The information in this Draft Placement Memorandum is not complete and may be changed. The Issue is meant only for Eligible Investors on a private placement basis and is not an offer to the public or to any other class of investors to purchase the Units. This Draft Placement Memorandum is not an offer to sell any Units and is not soliciting an offer to subscribe or buy the Units in any jurisdiction where such offer or sale is not permitted. It is being issued for the sole purpose of information or discussion relating to the Units that may be Allotted through the Final Placement Memorandum.

SHREM INVIT

(Registered in the Republic of India as an irrevocable trust set up under the Indian Trusts Act, 1882, and registered as an infrastructure investment trust under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, on February 4, 2021 having registration number IN/InvIT/20-21/0017)

Principal place of business: 1101, Viraj Towers, Junction off Andheri Kurla Road, W.E. Highway near Land Mark Building, Andheri (East), Mumbai 400 069
Tel: +91 22 4228 5500; **Fax**: +91 22 4228 5577; **Compliance Officer**: Mr. Shantilal Kothari
E-mail: infrateam@shrem.in; **Website**: www.shreminvit.com

Sponsor **Shrem Infra Structure Private Limited**	**Investment Manager** **Shrem Financial Private Limited**	**Trustee** **Axis Trustee Services Limited**

Shrem InvIT (the "**Trust**") is proposing an initial offer of up to [●] Units through a private placement at a price of ₹ [●] per Unit (the "**Issue Price**"), aggregating up to ₹ 6,000 million (the "**Issue**").

The Issue Price is ₹ [●] per Unit.

THIS ISSUE, AND THE DISTRIBUTION OF THIS DRAFT PLACEMENT MEMORANDUM, IS BEING MADE ONLY TO ELIGIBLE INVESTORS IN RELIANCE UPON REGULATION 14(2) OF THE SECURITIES AND EXCHANGE BOARD OF INDIA (INFRASTRUCTURE INVESTMENT TRUSTS) REGULATIONS, 2014

The Units are proposed to be listed on the National Stock Exchange of India Limited (the "**NSE**" or the "**Stock Exchange**"). In-principle approval for listing of the Units has been received from the NSE on [●]. NSE is the Designated Stock Exchange. Application shall be made to NSE for obtaining the final listing and trading approval for the Units to be Allotted pursuant to the Issue. NSE assumes no responsibility for the correctness of any statements made, opinions expressed or reports contained herein. Admission of the Units to be Allotted pursuant to the Issue for trading on NSE should not be taken as an indication of the merits of the Trust or of the Units.

This being an initial offer by the Trust, there has been no formal market for the Units. The Issue Price (determined and justified by the Investment Manager in consultation with the Lead Manager), should not be taken to be indicative of the market price of the Units after the Units are listed. No assurance can be given regarding an active or sustained market for trading in the Units or regarding the price at which the Units will be traded after listing.

A copy of this Draft Placement Memorandum has been delivered to NSE and a copy of the Placement Memorandum will be delivered to NSE. This Draft Placement Memorandum has not been, and will not be, registered as a prospectus, will not be circulated or distributed to the public at large in India or any other jurisdiction, and will not constitute a public offer in India or any other jurisdiction.

The Units have not been and will not be registered under the United States Securities Act of 1933, as amended (the "Securities Act") and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable U.S. state securities laws. Accordingly, the Units are being offered and sold outside the United States in offshore transactions in reliance on Regulation S under the Securities Act ("Regulation S") and applicable law of the jurisdictions where such offers and sales are made.

THE PLACEMENT MEMORANDUM SHALL BE PERSONAL TO EACH ELIGIBLE INVESTOR. THIS DRAFT PLACEMENT MEMORANDUM HAS BEEN PREPARED BY THE TRUST SOLELY FOR PROVIDING INFORMATION IN CONNECTION WITH THE ISSUE.

YOU MAY NOT, AND ARE NOT AUTHORIZED TO, (1) DELIVER THIS DRAFT PLACEMENT MEMORANDUM TO ANY OTHER PERSON; OR (2) REPRODUCE THIS DRAFT PLACEMENT MEMORANDUM IN ANY MANNER WHATSOEVER. ANY DISTRIBUTION OR REPRODUCTION OF THIS DRAFT PLACEMENT MEMORANDUM, IN WHOLE OR IN PART, IS UNAUTHORIZED. FAILURE TO COMPLY WITH THIS INSTRUCTION MAY RESULT IN A VIOLATION OF THE SECURITIES AND EXCHANGE BOARD OF INDIA (INFRASTRUCTURE INVESTMENT TRUSTS) REGULATIONS, 2014 OR OTHER APPLICABLE LAWS OF INDIA AND OF OTHER JURISDICTIONS.

INVESTMENTS IN THE UNITS INVOLVE RISKS AND PROSPECTIVE INVESTORS SHOULD NOT INVEST ANY FUNDS IN THE ISSUE UNLESS THEY CAN AFFORD TO TAKE THE RISK OF LOSING THEIR ENTIRE INVESTMENT. FOR MAKING AN INVESTMENT DECISION, INVESTORS MUST RELY ON THEIR OWN EXAMINATION OF THE TRUST, THE UNITS, THE ISSUE, AND THE PLACEMENT MEMORANDUM, INCLUDING THE RISKS INVOLVED. INVESTORS ARE ADVISED TO CAREFULLY READ THE PLACEMENT MEMORANDUM, INCLUDING THE SECTION ENTITLED "RISK FACTORS" AND "RIGHTS OF UNITHOLDERS" ON PAGES 59 AND 430, RESPECTIVELY, BEFORE MAKING AN INVESTMENT DECISION. THE UNITS HAVE NOT BEEN RECOMMENDED BY THE SECURITIES AND EXCHANGE BOARD OF INDIA ("SEBI") NOR DOES SEBI GUARANTEE ACCURACY OR ADEQUACY OF THE CONTENTS OF THE DRAFT PLACEMENT MEMORANDUM. EACH ELIGIBLE INVESTOR IS ADVISED TO CONSULT ITS OWN ADVISORS, ABOUT THE CONSEQUENCES OF AN INVESTMENT IN THE UNITS BEING ISSUED PURSUANT TO THE PLACEMENT MEMORANDUM.

Unless a serially numbered Placement Memorandum along with an Application Form is addressed to a particular Eligible Investor, no invitation to offer shall be deemed to have been made to such Eligible Investor to make an offer to subscribe to Units on private placement basis pursuant to the Issue. For further details, please see the section entitled "*Issue Information*" on page 435. The distribution of the Placement Memorandum or the disclosure of its contents without the Trustee's or Investment Manager's prior consent, to any person, other than to the addressees, shall be unauthorized and prohibited. Each addressee, by accepting delivery of the Placement Memorandum, shall agree to observe the foregoing restrictions and to make no copies of the Placement Memorandum or any documents referred to in the Placement Memorandum.

The information on the websites of the Sponsor, the Investment Manager, the Trust or the Lead Manager, as applicable, any website directly or indirectly linked to such websites, or the website of the Trustee, does not form part of this Draft Placement Memorandum and prospective investors should not rely on such information contained in, or available through, any such websites.

LEAD MANAGER	REGISTRAR AND UNIT TRANSFER AGENT
ICICI Securities Limited ICICI Centre H.T. Parekh Marg Churchgate Mumbai 400 020 Tel: +91 22 2288 2460 Fax: +91 22 2282 6580 E-mail: shrem.invit@icicisecurities.com Investor grievance E-mail: customercare@icicisecurities.com Website: www.icicisecurities.com Contact Person: Mr. Rupesh Khant SEBI Registration No.: INM000011179	**Link Intime India Private Limited** C-101, 247 Park 1st Floor, L.B.S. Marg Vikhroli West Mumbai 400 083 Tel: +91 22 4918 6000 Fax: +91 22 4918 6060 E-mail: bonds.helpdesk@linkintime.co.in Investor Grievance E-mail: bonds.helpdesk@linkintime.co.in Website: www.linkintime.co.in Contact Person: Ajit Patankar SEBI Registration No.: INR000004058

This Draft Placement Memorandum is dated February 27, 2021.

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NOTICE TO INVESTORS

The statements contained in this Draft Placement Memorandum relating to the Trust and the Units are, in all material respects, true and accurate and not misleading. The opinions and intentions expressed in this Draft Placement Memorandum with regard to the Trust and the Units are honestly held, have been reached after considering all relevant circumstances and are based on reasonable assumptions and information presently available with the Investment Manager, the Sponsor or both, the Investment Manager and the Sponsor. There are no other facts in relation to the Trust and the Units, the omission of which would, in the context of the Issue, make any statement in this Draft Placement Memorandum misleading in any material respect. Further, each of the Investment Manager and the Sponsor has made all reasonable enquiries to ascertain such facts and to verify the accuracy of all such information and statements.

The Lead Manager has not separately verified any information (financial, legal or otherwise) contained in this Draft Placement Memorandum. Accordingly, the Lead Manager or any of its shareholders, employees, counsel, officers, directors, representatives, agents, associates or affiliates make any express or implied representation, warranty or undertaking, and accept no responsibility or liability as to the accuracy or completeness of the information contained in this Draft Placement Memorandum or any other information supplied in connection with the Issue or the distribution of the Units, other than in relation to themselves. Each Eligible Investor receiving this Draft Placement Memorandum acknowledges that such person has neither relied on the Lead Manager nor any of its shareholders, employees, counsel, officers, directors, representatives, agents, associates or affiliates in connection with their investigation of the accuracy of such information or such person's investment decision. Each Eligible Investor must rely on its own examination of the Trust and the merits and risks involved in investing in the Units. Eligible Investors should not construe the contents of this Draft Placement Memorandum as legal, tax, accounting or investment advice. Each Eligible Investor receiving this Draft Placement Memorandum acknowledges that in making an investment decision, such investor has relied solely on the information contained in this Draft Placement Memorandum and not on any other disclosure or representation by the Investment Manager, the Trustee, the Sponsor, the Lead Manager or any other party. Save as expressly stated in this Draft Placement Memorandum, nothing contained herein is, or may be relied upon as, a promise or representation as to the future performance of the Trust.

No person is authorized to give any information or to make any representation not contained in this Draft Placement Memorandum and any information or representation not so contained must not be relied upon as having been authorized by or on behalf of the Trust or by, or on behalf, of the Sponsor, the Investment Manager or the Lead Manager. The delivery of this Draft Placement Memorandum, at any time, does not imply that the information contained in it is correct as of any time subsequent to its date. This Draft Placement Memorandum shall not be relied upon by, and the Investment Manager, the Trustee, the Sponsor, the Project Manager and/or the Lead Manager shall not be liable to, any subsequent acquirer, transferee or investor of the Units.

This Draft Placement Memorandum is personal to each Eligible Investor.

The distribution of this Draft Placement Memorandum or the disclosure of its contents to any person, other than the Eligible Investors to whom it is addressed and those retained by such Eligible Investors to enable them to make a decision with respect to their purchase of the Units, is unauthorized and prohibited. Each Eligible Investor, by accepting delivery of this Draft Placement Memorandum, agrees to observe the foregoing restrictions and make no copies of this Draft Placement Memorandum or any other material in connection with the Issue or the Units.

Certain U.S. Matters

The Units have not been, and will not be, registered under the Securities Act or any other applicable state securities laws of the U.S. and, unless so registered, may not be offered or sold within the U.S. except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable state securities laws. Accordingly, the Units are being offered and sold only outside the United States in offshore transactions in reliance on Regulation S, in each case in compliance with the applicable laws of the jurisdictions where those offers and sales are made.

Each purchaser of the Units offered by this Draft Placement Memorandum will be deemed to have made the representations, agreements and acknowledgments as described in this section entitled "*Notice to Investors - Representations by Eligible Investors"* on page 3 and in the section entitled "*Selling and Transfer Restrictions*" on page 427.

THE UNITS OFFERED HEREBY HAVE NOT BEEN REGISTERED WITH, OR APPROVED OR DISAPPROVED BY THE U.S. SECURITIES AND EXCHANGE COMMISSION (THE "**SEC**") OR ANY STATE SECURITIES COMMISSION IN THE U.S. OR ANY OTHER U.S. REGULATORY AUTHORITY. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT PASSED ON OR ENDORSED THE MERITS OF THE OFFERING OR THE ACCURACY OR ADEQUACY OF THIS DRAFT PLACEMENT MEMORANDUM. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE IN THE U.S.

Notice to Investors in certain other jurisdictions

The distribution of this Draft Placement Memorandum and the issue of the Units in certain jurisdictions may be restricted by law. As such, this Draft Placement Memorandum does not constitute, and may not be used for, or in connection with, an offer or solicitation by anyone in any jurisdiction in which such offer or solicitation is not authorized or to any person to whom it is unlawful to make such offer or solicitation. In particular, no action has been taken by the Investment Manager or the Lead Manager which would permit an offer of the Units or distribution of this Draft Placement Memorandum in any jurisdiction, other than India. Accordingly, the Units may not be offered or sold, directly or indirectly, and neither this Draft Placement Memorandum nor any Issue materials in connection with the Units be distributed or published in or from any country or jurisdiction that would require registration of the Units in such country or jurisdiction. Please see the section entitled "*Selling and Transfer Restrictions*" on page 427.

FATCA and Similar Measures

India has signed a Model 1 inter-governmental agreement with the United States (the "**U.S.-India IGA**") to give effect to the United States Foreign Account Tax Compliance Act provisions contained in sections 1471 to 1474 of the United States Internal Revenue Code and U.S. Treasury Regulations promulgated thereunder (together, as amended from time to time, "**FATCA**"). Pursuant to the U.S.-India IGA and the related Indian legislation, regulations and guidance, the Trust is required to report certain information about "Specified U.S. Persons" (as defined in the U.S.-India IGA) that own, directly or indirectly, an interest in the Trust. If the Trust does not comply with these obligations, it may be subject to a 30.0% withholding tax on certain payments to it of U.S. source income (including interest and dividends) (from July 1, 2014) and proceeds from the sale of property that could give rise to U.S. source interest or dividends (from January 1, 2019) (a "**FATCA Deduction**"), and to financial penalties or other sanctions under the relevant Indian legislation.

Under the terms of the current U.S.-India IGA, the Trust will not generally be required to withhold tax on payments made to an account holder (i.e. a Unitholder) or to close recalcitrant accounts. The Trust will be required to report certain information in respect of any "Specified U.S. Persons" to the Indian Directorate of Intelligence and Criminal Investigation (the "**Directorate**") and the Directorate will exchange this information, on an automatic basis annually, with the U.S. Internal Revenue Service.

It should be noted that a number of other jurisdictions have entered into or are committed to entering into inter-governmental agreements for the automatic cross-border exchange of tax information similar to the U.S.-India IGA, including, in particular, under a regime known as the OECD Common Reporting Standard (the "**CRS**"). India has signed, along with over 80 other countries, a multilateral competent authority agreement to implement the CRS, and has passed regulations to give effect to the CRS. These regulations require Indian "Financial Institutions", which is likely to include the Trust, to identify specified persons in participating jurisdictions under the CRS, and to report related information to the Directorate (for automatic exchange with the relevant tax authorities in such jurisdictions).

While the Trust will seek to satisfy its obligations under FATCA, the U.S.-India IGA, the CRS and the associated implementing legislation in India to avoid the imposition of any FATCA Deductions, financial penalties and other sanctions, the ability of the Trust to satisfy such obligations will depend on receiving relevant information and/or documentation about each Unitholder and the direct and indirect beneficial owners of the Units (if any). There can be no assurance that the Trust will be able to satisfy such obligations. If a Unitholder, or any related party, causes the Trust to suffer a FATCA Deduction, financial penalty, or other cost, expense or liability, or the Trust is required to make a FATCA Deduction from such Unitholder, the Investment Manager and/or the Trustee, on behalf of the Trust, reserves the right to take any action available to it and to pursue all remedies at its disposal to ensure that the FATCA Deduction or financial penalty and other associated costs, expenses and liabilities are economically borne by such Unitholder.

All prospective investors should consult with their own tax advisers regarding the possible implications of FATCA, the U.S.-India IGA, the CRS and the associated implementing legislation in India and any other similar legislation and/or regulations on their investments in the Trust.

THE VALUE OF THE UNITS AND THE INCOME DERIVED FROM THEM MAY FALL, AS WELL AS RISE, THE UNITS ARE NOT OBLIGATIONS OF, DEPOSITS IN, OR GUARANTEED BY THE TRUST, THE TRUSTEE, THE SPONSOR, THE INVESTMENT MANAGER, THE LEAD MANAGER OR ANY OF THEIR RESPECTIVE SHAREHOLDERS, EMPLOYEES, COUNSEL, OFFICERS, DIRECTORS, REPRESENTATIVES, AGENTS, ASSOCIATES OR AFFILIATES. AN INVESTMENT IN THE UNITS IS SUBJECT TO INVESTMENT RISKS, INCLUDING THE POSSIBLE LOSS OF THE PRINCIPAL AMOUNT INVESTED, FURTHER, LISTING OF THE UNITS ON THE STOCK EXCHANGE DOES NOT GUARANTEE A LIQUID MARKET FOR THE UNITS. INVESTORS HAVE NO RIGHT TO REQUEST THE TRUST, THE TRUSTEE, THE SPONSOR OR THE INVESTMENT MANAGER OR ANY OF THEIR RESPECTIVE SHAREHOLDERS, EMPLOYEES, COUNSEL, OFFICERS, DIRECTORS, REPRESENTATIVES, AGENTS, ASSOCIATES OR AFFILIATES TO REDEEM THEIR UNITS WHILE THE UNITS ARE LISTED, UNLESS OTHERWISE PERMITTED BY APPLICABLE LAW. THE

PERFORMANCE OF ANY OF THE LISTED UNITS OF THE TRUST IS NOT NECESSARILY INDICATIVE OF THE FUTURE PERFORMANCE OF THE UNITS OF THE TRUST.

Representations by Eligible Investors

References herein to "you" or "your" is to each Eligible Investor in the Issue.

By purchasing, or subscribing to, the Units pursuant to the Issue, you are deemed to have represented to the Trustee, the Investment Manager, the Sponsor and the Lead Manager, and acknowledge and agree as follows:

1. You are an "Institutional Investor" as defined in Regulation 2(1)(ya) of InvIT Regulations or a "Body Corporate" as defined in Regulation 2(1)(d) of InvIT Regulations, and are eligible under applicable laws and regulations of India, and undertake (i) to acquire, hold, manage or dispose of any of the Units that are Allotted to you in accordance with InvIT Regulations, other applicable laws and under the laws of all relevant jurisdictions; and (ii) that you are entitled to acquire and have all necessary capacity and have obtained all necessary consents, governmental or otherwise and authorisations to enable you to commit to this participation in the Issue and to perform your obligations in relation thereto (including, without limitation, in the case of any person on whose behalf you are acting, all necessary consents and authorisations to agree to the terms set out or referred to in this Draft Placement Memorandum) and will honour such obligations;

2. You will make all necessary filings and reportings, in relation to the Issue and your investment in the Units, with appropriate governmental, statutory or regulatory authorities, including the RBI, as may be required, in accordance with applicable law in your respective jurisdiction, as applicable;

3. You agree to provide on request in a timely manner, and consent to the use and disclosure (including to any taxation or other regulatory authorities) of, any information or documentation in relation to yourself and, if and to the extent required, the direct or indirect beneficial ownership of your Units (if any), as may be necessary for the Trust (or the Trustee and its agents) and the Investment Manager to comply with any regulatory obligations and/or prevent the withholding of tax or other penalties under FATCA, the CRS or other similar exchange of tax information regimes. You acknowledge and agree that you shall have no claim against the Trust (or the Trustee and its agents) and the Investment Manager for any losses suffered by you (including in relation to the direct or indirect beneficial ownership of your Units (if any)) as a result of such use or disclosure of such information or documentation.

4. You are aware that the Units have not been, and will not be registered through a prospectus under the InvIT Regulations, or under any other law in force in India, and no Units will be offered in India or overseas to the public or any members of the public in India or any other class of investors other than Institutional Investors and Bodies Corporate. This Draft Placement Memorandum shall be filed with the Stock Exchange and SEBI and would be displayed on the website of the Stock Exchange;

5. You confirm that, either: (i) you have not participated in or attended any investor meetings or presentations by the Trust or its agents ("**Presentations**") with regard to the Trust, the Units or the Issue; or (ii) if you have participated in or attended any Presentations, you understand and acknowledge that the Lead Manager or the Trustee may not have knowledge of the statements that the Trust, the Sponsor or their respective agents may have made at such Presentations and are therefore unable to determine whether the information provided to you at such Presentations may have included any material misstatements or omissions, and, accordingly you acknowledge that the Lead Manager, the Trustee (or its agents), the Investment Manager or the Sponsor have advised you not to rely in any way on any information that was provided to you at such Presentations;

6. None of the Sponsor, the Investment Manager, the Trustee or the Lead Manager or any of their respective shareholders, directors, officers, employees, counsel, representatives, agents or affiliates is making any recommendations to you or advising you regarding the suitability of any transactions it may enter into in connection with the Issue and that participation in the Issue is on the basis that you are not and will not, up to the Allotment, be a client of the Lead Manager. None of the Sponsor, the Trustee, the Investment Manager, the Lead Manager or any of their respective shareholders, employees, counsel, officers, directors, representatives, agents or affiliates have any duties or responsibilities to you for providing the protection afforded to their clients, or for providing advice in relation to the Issue and are in no way acting in a fiduciary capacity towards you;

7. All statements, other than statements of historical fact included in this Draft Placement Memorandum, including, without limitation, those regarding the Trust's financial position, business strategy, plans and objectives for future operations, the Investment Objectives, and the Projections of Revenue from Operations and Cash Flow from Operating Activities, are forward-looking statements. Such forward-looking statements involve known and unknown risks, uncertainties and other important factors that could cause actual results to be materially different from the results, performance or achievements expressed or implied by such forward-looking statements. Such forward-looking statements are based on numerous assumptions regarding the Trust's present and future business strategies and the

environment in which the Trust will operate in the future. You should not place undue reliance on forward-looking statements, which speak only as of the date of this Draft Placement Memorandum. The Trust, the Trustee, the Sponsor, the Lead Manager and the Investment Manager or any of their respective shareholders, directors, officers, employees, counsel, representatives, advisors, agents, associates or affiliates assume no responsibility to update any of the forward-looking statements contained in this Draft Placement Memorandum;

8. You have been provided a serially numbered copy of this Draft Placement Memorandum and have read this Draft Placement Memorandum in its entirety, including, in particular, the section entitled "*Risk Factors*" on page 59;

9. You are aware and understand that the Units are being offered only to Eligible Investors and are not being offered to the general public and the Allotment shall be on a discretionary basis;

10. You have made, or are deemed to have made, as applicable, the representations provided in the section entitled "*Selling and Transfer Restrictions*" on page 427;

11. You understand that the Units have not been, and will not be, registered under the Securities Act or with any securities regulatory authority of any state of the United States and accordingly, may not be offered or sold within the United States, except in reliance on an exemption from the registration requirements of the Securities Act;

12. The Units are being offered and sold outside the United States in an offshore transaction within the meaning of Regulation S and the applicable law of the jurisdictions in which those offers and sales are made.

13. You understand and agree that the Units are transferable only in accordance with the restrictions described in the section entitled "*Selling and Transfer Restrictions*" on page 427, and you warrant that you will comply with such restrictions;

14. In making your investment decision, you have (i) relied on your own examination of the Trust, the Units and the terms of the Issue, including the merits and risks involved, (ii) made and will continue to make your own assessment of the Trust, the Units and the terms of the Issue based solely on the information contained in this Draft Placement Memorandum, (iii) consulted your own independent advisors or otherwise have satisfied yourself concerning, without limitation, the effects of local laws, (iv) relied solely on the information contained in this Draft Placement Memorandum and no other disclosure or representation by the Sponsor or the Investment Manager or any other party; (v) received all information in this Draft Placement Memorandum that you believe is necessary or appropriate in order to make an investment decision in respect of the Trust and the Units, and (vi) relied upon your own investigation in deciding to invest in the Issue;

15. You have such knowledge and experience in financial, business and investment matters as to be capable of evaluating the merits and risks of an investment in the Units. You and any accounts for which you are subscribing to the Units, (i) are each able to bear the economic risk of the investment in the Units; (ii) will not, subject to the terms of this Placement Memorandum, look to any of the Investment Manager, the Trustee, the Sponsor or the Lead Manager or any of their respective shareholders, employees, counsel, officers, directors, representatives, financial advisors, agents or affiliates for all, or part, of any such loss or losses that may be suffered due to your investment in the Units; and (iii) are able to sustain a complete loss on the investment in the Units; (iv) have no need for immediate liquidity with respect to the investment in the Units, and (v) have no reason to anticipate any change in your or their circumstances, financial or otherwise, which may cause or require any sale or distribution by you or them of all or any part of the Units. You acknowledge that an investment in the Units involves a high degree of risk and that the Units are, therefore, a speculative investment. You are seeking to subscribe to the Units in the Issue for your own investment and not with a view to resell or distribute in any manner that could characterise you as an underwriter or similar entity in any jurisdiction;

16. The Trustee, the Sponsor, the Investment Manager, the Lead Manager or any of their respective shareholders, directors, officers, employees, counsel, representatives, advisors, agents or affiliates have not provided you with any legal, financial or tax advice or otherwise made any representations regarding the tax consequences of the Units (including but not limited to the Issue and the use of the proceeds of the Issue). You will obtain your own independent legal, financial or tax advice and will not rely on the Investment Manager, the Sponsor, the Trustee, the Lead Manager or any of their respective shareholders, employees, counsel, officers, directors, representatives, advisors, agents or affiliates when evaluating the tax consequences in relation to the Units (including but not limited to the Issue and the use of the proceeds of the Issue). You waive and agree not to assert any claim against the Lead Manager, the Sponsor, the Trustee or the Investment Manager or any of their respective financial advisors, agents or affiliates with respect to the tax aspects of the Units or the Issue or as a result of any tax audits by tax authorities, in relation to the Units and the Issue, wherever situated;

17. You are not the Trustee, or the Valuer or an employee of the Valuer involved in the valuation of the Trust's Initial Portfolio Assets;

18. You are aware that (i) we have received in-principle approval from the NSE dated [●], and (ii) the application for the final listing and trading approval will be made only after Allotment. There can be no assurance that the final approval for listing and trading of the Units will be obtained in a timely manner, or at all. The Trust, the Trustee, the Investment Manager or the Sponsor, shall not be responsible for any delay or non-receipt of such final approval (except to the extent prescribed under the InvIT Regulations) or any loss arising from such delay or non-receipt;

19. You shall not undertake any trade in the Units credited to your demat account until such time that the final listing and trading approval for the Units has been issued by the Stock Exchange;

20. The only information you are entitled to rely on, and on which you have relied, in committing yourself to acquire the Units is contained in this Draft Placement Memorandum, such information being all that you deem necessary to make an investment decision in respect of the Units and that you have neither received nor relied on any other information given or representations, warranties or statements made by the Trustee, the Lead Manager, the Investment Manager or the Sponsor, and neither the Trustee, the Lead Manager, the Investment Manager nor the Sponsor will be liable for your decision to accept an invitation to participate in the Issue based on any other information, representation, warranty or statement that you have obtained or received;

21. You understand that the Units to be Allotted in this Issue will, when issued, be credited as fully paid and will rank *pari passu* in all respect with all other Units, including in respect of the right to receive all distributions declared, made or paid in respect of the Units after the Allotment. For details, please see the section entitled "*Distributions*" on page 376;

22. You agree to indemnify and hold the Trustee, Investment Manager, the Sponsor and the Lead Manager harmless from any and all costs, claims, liabilities and expenses (including legal fee and expenses) arising out of or in connection with any breach of the representations and warranties in this section;

23. The Trustee, the Investment Manager, the Sponsor, the Lead Manager, their respective shareholders, employees, counsel, offices, directors, representatives, agents or affiliates, will rely on the truth and accuracy of the foregoing representations, warranties, acknowledgements and undertakings which are given to the Lead Manager on their own behalf and on behalf of the Trust, the Sponsor, the Investment Manager, the Trustee, and the same are irrevocable;

24. You are eligible to invest in India and in the Units under applicable law, including the FEMA Rules, and have not been prohibited by SEBI from buying, selling or dealing in securities;

25. You understand that, subject to the terms of this Draft Placement Memorandum, neither the Lead Manager, the Investment Manager, the Sponsor nor the Trustee has any obligation to purchase or subscribe to all, or any part, of the Units purchased by you in the Issue, or to support any losses directly or indirectly sustained or incurred by you for any reason whatsoever in connection with the Issue;

26. Any dispute arising in connection with the Issue will be governed by, and construed in accordance with, the laws of the Republic of India and the courts at Mumbai, Maharashtra shall have exclusive jurisdiction to settle any disputes which may arise out of or in connection with this Draft Placement Memorandum;

27. You have made, or are deemed to have made, as applicable, the representations provided in this section and each of the representations, warranties, acknowledgements and agreements set out above shall continue to be true and accurate at all times, up to and including the Allotment, listing and trading of the Units in the Issue; and

28. You are eligible to hold the Units, so Allotted. You are aware that your holding after the Allotment of the Units cannot exceed the investment level permissible as per any applicable law and regulations.

Available Information

The Investment Manager agrees to comply with any undertakings given by it from time to time in connection with the Units and, without prejudice to the generality of foregoing, shall furnish to the Unitholders all such information as may be required under the InvIT Regulations.

DEFINITIONS AND ABBREVIATIONS

This Draft Placement Memorandum uses the definitions and abbreviations provided below which you should consider when reading the information contained herein.

References to any legislation, act, regulations, rules, guidelines or policies shall be to such legislation, act, regulations, rules, guidelines or policies as amended, supplemented, or re-enacted from time to time and any reference to a statutory provision shall include any subordinate legislation made under that provision.

The words and expressions used in this Draft Placement Memorandum, but not defined herein shall have the meaning ascribed to such terms under the InvIT Regulations, the SEBI Act, the Depositories Act, and the rules and regulations made thereunder.

Notwithstanding the foregoing, the terms not defined but used in the sections entitled "Audited Special Purpose Combined Financial Statements", "Projections of Revenue from Operations and Cash Flow from Operating Activities", "Statement of Tax Benefits" and "Legal and other Information" on pages 458, 524, 442 and 420, respectively, shall have the meanings ascribed to such terms in those respective sections.

In this Draft Placement Memorandum, unless the context otherwise requires, a reference to "we", "us" and "our" refers to the Trust and the Initial Portfolio Assets on a consolidated basis. For the sole purpose of the Audited Special Purpose Combined Financial Statements, reference to "we", "us" and "our" refers to the Initial Portfolio Assets on a combined basis.

Trust Related Terms

Term	Description
Associate	Associate shall have the meaning under Regulation 2(1)(b) of the InvIT Regulations
Auditors	Mukund M. Chitale & Co., Chartered Accountants, the statutory auditors of the Trust
Audited Special Purpose Combined Financial Statements	Audited special purpose combined financial statements of the Initial Portfolio Assets prepared in accordance with the InvIT Regulations and Ind AS, which comprise the combined balance sheets as at December 31, 2020, March 31, 2020, March 31, 2019 and March 31, 2018 and the related combined statements of profit and loss (including other comprehensive income), combined cash flow statements and combined statements of changes in equity for the period or years ended December 31, 2020, March 31, 2020, March 31, 2019 and March 31, 2018 and a summary of significant accounting policies and other explanatory information
Concession Agreements	Collectively, the concession agreements entered into between the Project SPVs and the relevant concessioning authorities. For details, please see the section entitled "*Summary of Key Agreements*" on page 216
Corporate Governance Framework	The corporate governance framework adopted by the Investment Manager in relation to the Trust. For details, please see the section entitled "*Corporate Governance*" on page 127
Capital Contribution	The total subscription amounts (either by way of cash or share swap or otherwise (including transfer of interest in the InvIT Assets by the Sponsor and any other entities)) received by the Trust from the Unitholders (including the Sponsor), for subscription of Units, in accordance with applicable law and the InvIT Documents, through private placement (as defined in the InvIT Regulations)
DBL	Dilip Buildcon Limited
Holdcos	Collectively, SRPL, SIPL and STPL
Holding Company	A holding company, as defined under Regulation 2(1)(sa) of the InvIT Regulations
Initial Portfolio Assets	Collectively, the Holdcos and the Project SPVs
Investment Management Agreement	The investment management agreement dated January 12, 2021 entered into between the Trustee and the Investment Manager
Investment Manager	Shrem Financial Private Limited
Investment Objectives	The investment objectives of the Trust, as provided under the section entitled "*Overview of the Trust*" on page 17
InvIT Loan	The loan proposed to be availed by the Trust for an aggregate principal amount of up to ₹ 32,000 million
InvIT Assets	Assets owned by the Trust (acting through the Trustee), whether directly, or through holding companies or SPVs, and includes all rights, interests and benefits arising from and incidental to ownership of such assets, in accordance with the InvIT Regulations and applicable law
InvIT Documents	The Trust Deed, the Investment Management Agreement, the Project Implementation and Management Agreements, any other document, letter or agreement with respect to

Term	Description
	the Trust or the Units, executed for the purpose of the Trust, the offer documents and such other documents in connection therewith, as originally executed and amended, modified, supplemented or restated from time to time, together with the respective annexures, schedules and exhibits, if any
National HAM Projects	Collectively, the HAM projects operated and maintained by DBL Lucknow Sultanpur Highways Limited, DBL Tuljapur Ausa Highways Limited, DBL Kalmath Zarap Highways Limited, DBL Mahagaon Yavatmal Highways Private Limited, DBL Yavatmal Wardha Highways Private Limited and DBL Wardha Butibori Highways Private Limited
Parties to the Trust	Collectively, the Sponsor, the Trustee, the Investment Manager and the Project Manager
Portfolio Assets	The Initial Portfolio Assets and other projects, as the context may require, which are owned by the Trust from time to time
Project Implementation and Management Agreements	Collectively, the project implementation and management agreements, to be entered into amongst the Trustee, the Project Manager, the Investment Manager and the relevant Project SPV
Project SPVs	(i) Suryavanshi Infrastructure Private Limited, (ii) DBL Nadiad Modasa Tollways Limited, (iii) DBL Jaora-Sailana Tollways Limited, (iv) DBL Bankhlafata-Dogawa Tollways Limited, (v) DBL Ashoknagar Vidisha Tollways Ltd, (vi) DBL Silwani-Sultanganj Tollways Limited, (vii) DBL Sitamau-Suwasara Tollways Limited, (viii) DBL Hata-Dargawon Tollways Limited, (ix) DBL Patan Rehli Tollways Limited, (x) DBL Mundi-Sanawad Tollways Limited, (xi) DBL Uchera – Nagod Tollways Limited, (xii) DBL Betul-Sarni Tollways Limited, (xiii) DBL Tikamgarh-Nowgaon Tollways Limited, (xiv) DBL Sardarpur Badnawar Tollways Limited, (xv) DBL Mundargi Harapanahalli Tollways Limited, (xvi) DBL Hassan Periyapatna Tollways Limited, (xvii) DBL Hirekerur Ranibennur Tollways Limited, (xviii) DBL Lucknow Sultanpur Highways Limited, (xix) DBL Tuljapur Ausa Highways Limited, (xx) DBL Kalmath Zarap Highways Limited, (xxi) DBL Mahagaon Yavatmal Highways Private Limited, (xxii) DBL Yavatmal Wardha Highways Private Limited, (xxiii) DBL Wardha Butibori Highways Private Limited, and (xxiv) Jalpa Devi Tollways Limited
Project Manager	Shrem Road Projects Private Limited
Projections of Revenue from Operations and Cash Flow from Operating Activities	Projections of revenue from operations and cash flow from operating activities of the Trust (consisting of the Project SPVs) individually for the years ending March 31, 2022, March 31, 2023 and March 31, 2024 along with the basis of preparation and other explanatory information and significant assumptions
RBI Bank Rate	The rate of interest specified by the Reserve Bank of India from time to time in pursuance of section 49 of Reserve Bank of India Act, 1934 or any replacement of such rate for the time being in effect
Related Parties	Related parties, as defined under Regulation 2(1)(zv) of the InvIT Regulations.
SHA	Shareholders Agreement
Securities Purchase Agreements	Collectively, the SIPL SPA, SRPL SPA and STPL SPA
SASHA	Share Acquisition cum Shareholders Agreement
SIPL	Shrem Infraventure Private Limited
SIPL SPA	The securities purchase agreement to be entered into between SIPL, the Sponsor and other shareholders of SIPL, the Trust (acting through the Trustee) and the Investment Manager
Sponsor	Shrem Infra Structure Private Limited
SPV(s)	Special purpose vehicles, as defined under Regulation 2(l)(zy) of the InvIT Regulations
SRPL	Shrem Roadways Private Limited
SRPL SPA	The securities purchase agreement to be entered into between SRPL, the Sponsor and other shareholders of SRPL, the Trust (acting through the Trustee) and the Investment Manager
STPL	Shrem Tollway Private Limited
STPL SPA	The securities purchase agreement to be entered into between STPL, the Sponsor and other shareholders of STPL, the Trust (acting through the Trustee) and the Investment Manager
Suryavanshi Infra Technical Report	The technical report dated February 2021, prepared by the Technical Consultant, in relation to Suryavanshi Infra
Trust	Shrem InvIT
Trust Deed	The trust deed of Shrem InvIT dated December 31, 2020 entered into between the Sponsor and the Trustee
Trust Group	Initial Portfolio Assets on a combined basis
Trustee or Axis	Axis Trustee Services Limited

Term	Description
Unit	An undivided beneficial interest in the Trust, and all issued and allotted Units together represent the entire beneficial interest in the Trust
Unitholder	Any person who owns any Unit of the Trust
Valuation Report	The valuation report issued by the Valuer, which sets out its opinion as to the fair enterprise value of the Initial Portfolio Assets as on January 31, 2021
Valuer	Mr. S Sundararaman
We / us / our	Unless the context otherwise requires or implies, the Trust, the Holdcos and the Project SPVs

Issue Related Terms

Term	Description
Allocated/ Allocation	The allocation of the Units, to successful Bidders on the basis of the Application Form submitted by them, by the Investment Manager, in consultation with the Lead Manager
Allot/ Allotment/ Allotted	Unless the context otherwise requires, the issue and allotment or transfer of the Units to successful Bidders, pursuant to the Issue
Allottees	Bidders to whom Units are issued and Allotted pursuant to the Issue
Application Form	The serially numbered form pursuant to which Eligible Investors shall submit a Bid for the Units in the Issue
Bid(s)	Indication of interest of an Eligible Investor, as provided in the Application Form, to subscribe for the Units at the Issue Price, in terms of this Draft Placement Memorandum and the Application Form
Bid Amount	The amount payable by a Bidder for the number of Units Bid for at the Issue Price specified in this Draft Placement Memorandum
Bid/Issue Closing Date	[●], which is the last date up to which the Application Forms shall be accepted
Bid/Issue Opening Date	[●], which is the date on which the Application Forms shall be dispatched to Eligible Investors by the Registrar and the date from which, the Registrar shall accept Application Forms
Bid/Issue Period	Period between the Bid/Issue Opening Date and the Bid/Issue Closing Date, inclusive of both days, during which Eligible Investors can submit their Bids
Bid Lot	A minimum of 2,600,000 Units and in multiples of 200,000 Units thereafter
Bidder	Any Eligible Investor, who makes a Bid pursuant to the terms of this Draft Placement Memorandum and the Application Form
Body Corporate / Bodies Corporate	Body Corporate / Bodies corporate as defined in Regulation 2(1)(d) of the InvIT Regulations
Business Day	Any day from Monday to Friday, excluding any public holiday
Cash Escrow Account	'No-lien' and 'non-interest bearing' account opened with the Escrow Collection Bank and in whose favour Bidders should transfer money through direct credit/NEFT/NECS/RTGS in respect of the Bid Amount when submitting a Bid
Cash Escrow Agreement	The cash escrow agreement dated [●], entered into amongst the Trust (acting through the Trustee), the Trustee, the Sponsor, the Investment Manager, the Lead Manager, and the Escrow Collection Bank for, among others, collection of the Bid Amounts and for remitting refunds, if any, of the amounts collected, to the Bidders
Client ID	Client identification number maintained with one of the Depositories in relation to a demat account
Closing Date	The date on which Allotment of the Units pursuant to the Issue shall be made, i.e. on or about [●]
Demographic Details	Details of the Bidders, including the Bidder's address, investor status, occupation and bank account details
Designated Date	The date of credit of Units to the Eligible Investors' demat accounts
Designated Stock Exchange	National Stock Exchange of India Limited
Draft Placement Memorandum	This Draft Placement Memorandum dated February 27, 2021 in relation to the Issue, to be filed with SEBI and the Stock Exchange, issued in accordance with the InvIT Regulations, which does not contain the complete particulars of the Issue
Eligible Investors	Institutional Investors and Bodies Corporate, whether Indian or foreign
Escrow Collection Bank	[●]
Institutional Investors	Institutional investor as defined in Regulation 2(1)(ya) of the InvIT Regulations
I-Sec	ICICI Securities Limited
Issue	The issue of up to [●] Units at an Issue Price of ₹ [●] per Unit, aggregating up to ₹ 6,000 million, on a private placement basis

Term	Description
Issue Price	₹ [●] per Unit, being the price at which Units will be Allotted to successful Bidders in terms of this Draft Placement Memorandum
Issue Proceeds	The proceeds of the Issue of up to ₹ 6,000 million For further details about the use of the Issue Proceeds and the Issue Expenses, please see the section entitled "*Use of Proceeds*" on page 367
Issue Size	The issue of up to [●] Units aggregating up to ₹ 6,000 million
Listing Agreement	The listing agreement to be entered into with the Stock Exchange by the Trust, in line with the format as specified under the Securities and Exchange Board of India circular number CIR/CFD/CMD/6/2015 dated October 13, 2015 on "Format of uniform Listing Agreement"
Listing Date	The date on which the Units will be listed on the Stock Exchange
Lead Manager	I-Sec
Minimum Bid Size	₹ 260 million
Mutual Funds	Mutual funds registered with SEBI under the Securities and Exchange Board of India (Mutual Funds) Regulations, 1996
Placement Agreement	The placement agreement dated February 27, 2021 entered into among the Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, the Project Manager and the Lead Manager
Placement Memorandum	The placement memorandum dated [●] to be issued in relation to this Issue in accordance with the InvIT Regulations
Qualified Institutional Buyers or QIB(s)	Qualified institutional buyers, as defined under Regulation 2(1)(ss) of the SEBI ICDR Regulations, which currently includes (i) a mutual fund, a VCF, an AIF and an FVCI registered with SEBI, (ii) an FPI, other than Category III FPI, registered with SEBI, (iii) a public financial institution as defined in section 2(72) of the Companies Act, 2013, (iv) a scheduled commercial bank, (v) a multilateral and bilateral development financial institution, (vi) a state industrial development corporation, (vii) an insurance company registered with the IRDAI, (viii) a provident fund with minimum corpus of ₹ 250 million, (ix) a pension fund with minimum corpus of ₹ 250 million, (x) National Investment Fund set up by resolution no. F. No. 2/3/2005-DDII dated November 23, 2005 of the GoI published in the Gazette of India, (xi) insurance funds set up and managed by army, navy or air force of the Union of India, (xii) insurance funds set up and managed by the Department of Posts, India, and (xiii) systemically important non-banking financial companies. For the avoidance of doubt, this term is not used herein as it is defined in Rule 144A
Registrar and Unit Transfer Agent or Registrar	Link Intime India Private Limited
Working Day	Working Day, with reference to (a) Bid/Issue Period, shall mean all days, excluding Saturdays, Sundays and public holidays, on which commercial banks in Mumbai are open for business; and (b) the time period between the Bid/Issue Closing Date and the listing of the Units on the Stock Exchange, shall mean all trading days of Stock Exchange, excluding Sundays and bank holidays

Technical and Industry Related Terms

Term	Description
O&M	Operation and maintenance
Technical Consultant	RUKY Projects Private Limited
Technical Reports	Collectively the technical reports, prepared by the Technical Consultant, in relation to the Project SPVs
Traffic Study Report	The traffic study report, prepared by the Traffic Study Consultant, in relation to Jalpa Devi Tollways Limited
Traffic Study Consultant	Ramboll India Private Limited

Abbreviations

Term	Description
AIF	Alternative Investment Fund as defined in and registered with SEBI under the SEBI AIF Regulations
CAN	Confirmation of Allocation Note
CCEA	Cabinet Committee on Economic Affairs
CCI	Competition Commission of India

Term	Description
CDSL	Central Depository Services (India) Limited
Companies Act	Companies Act, 1956 and/or the Companies Act, 2013, as applicable
Companies Act, 1956	Companies Act, 1956, as amended without reference to the provisions thereof that have ceased to have effect
Companies Act, 2013	Companies Act, 2013, to the extent in force
Competition Act	Competition Act, 2002
Depository	A depository registered with SEBI under the Securities and Exchange Board of India (Depositories and Participants) Regulations, 2018
Depositories Act	Depositories Act, 1996
Depository Participant	A depository participant as defined under the Depositories Act
DIN	Director Identification Number
EPC	Engineering, Procuring and Construction
FEMA	Foreign Exchange Management Act, 1999, read with rules and regulations thereunder
FEMA Rules	Foreign Exchange Management (Non-debt Instruments) Rules, 2019
Financial Year or Fiscal Year or Fiscal	Period of 12 months ended March 31 of that particular year, unless otherwise stated
FVCI	Foreign venture capital investors, as defined under the SEBI FVCI Regulations
GAAR	General Anti-Avoidance Rules
GoI or Government	Government of India
HAM	Hybrid Annuity Model
ICAI	Institute of Chartered Accountants of India
Ind AS	Companies (Indian Accounting Standards) Rules, 2015, notified on February 19, 2015 by the MCA, including any amendments or modifications thereto
Indian GAAP	Generally Accepted Accounting Principles in India
Indian GAAS	Generally Accepted Auditing Standards in India
InvIT	Infrastructure Investment Trust
InvIT Regulations	Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014 and circulars, notifications, guidelines and clarifications issued thereunder
IRDAI	Insurance Regulatory and Development Authority of India
KRDCL	Karnataka Road Development Corporation Limited
LODR Regulations	Listing Obligations and Disclosure Requirements, 2015 (as amended)
Listing Regulations	Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015
MCA	Ministry of Corporate Affairs
MoEF	Ministry of Environment, Forest and Climate Change
MoRTH	Ministry of Road Transport and Highways
MPRDC	Madhya Pradesh Road Development Corporation Limited
NACH	National Automated Clearing House
NASD	National Association of Securities Dealers
NEFT	National Electronic Funds Transfer
NHAI	National Highways Authority of India
NSDL	National Securities Depository Limited
NSE	The National Stock Exchange of India Limited
PAN	Permanent Account Number
RBI	Reserve Bank of India
Regulation S	Regulation S under the Securities Act
Rs./Rupees/INR/₹	Indian Rupees
RTGS	Real Time Gross Settlement
Rule 144A	Rule 144A under the Securities Act
SCR (SECC) Regulations	Securities Contract (Regulation) (Stock Exchanges and Clearing Corporations) Regulations, 2018
SEBI	Securities and Exchange Board of India
SEBI Act	The Securities and Exchange Board of India Act, 1992
SEBI AIF Regulations	Securities and Exchange Board of India (Alternative Investments Funds) Regulations, 2012
SEBI FPI Regulations	Securities and Exchange Board of India (Foreign Portfolio Investors) Regulations, 2019
SEBI FVCI Regulations	Securities and Exchange Board of India (Foreign Venture Capital Investors) Regulations, 2000
SEBI ICDR Regulations	Securities and Exchange Board of India (Issue of Capital and Disclosure Requirements) Regulations, 2018
SEBI VCF Regulations	Securities and Exchange Board of India (Venture Capital Funds) Regulations, 1996

Term	Description
Securities Act	U.S. Securities Act of 1933, as amended
Stock Exchange	NSE
U.S./USA/United States	United States of America
USD/US$	United States Dollars
VCF	Venture capital funds as defined under the SEBI VCF Regulations

PRESENTATION OF FINANCIAL DATA AND OTHER INFORMATION

Certain Conventions

All references in this Draft Placement Memorandum to "India" are to the Republic of India and all references to the "U.S.", or the "United States" are to the United States of America.

Unless stated otherwise, all references to page numbers in this Draft Placement Memorandum are to the page numbers of this Draft Placement Memorandum.

Financial Data

Unless stated otherwise, the financial information in this Draft Placement Memorandum is derived from the Audited Special Purpose Combined Financial Statements. The Trust was settled as a trust on December 31, 2020, and will not acquire ownership of the Initial Portfolio Assets until immediately prior to the Allotment of the Units in the Issue. As of the date of this Draft Placement Memorandum, there is no available financial information of the Trust.

The Audited Special Purpose Combined Financial Statements have been prepared in accordance with requirements of the InvIT Regulations, the accounting principles generally accepted in India, including the Indian Accounting Standards as notified under the Companies (Indian Accounting Standards) Rules, 2015 prescribed under the Companies Act, 2013, as applicable ("**Ind AS**") and the SEBI Circular (CIR/IMD/DF/114/2016) dated October 20, 2016 on 'Disclosure of Financial Information in Offer Document/Placement Memorandum for InvITs' ("**SEBI Circular on Financial Disclosures**"). For further details, please see the section entitled "*Audited Special Purpose Combined Financial Statements*" on page 458.

Further, this Draft Placement Memorandum includes projections of revenue and operating cash flows of the Project SPVs for the financial years ended March 31, 2022, March 31, 2023 and March 31, 2024, prepared in accordance with Standard on Assurance Engagement 3400, 'The Examination of Prospective Financial Information', issued by the Institute of Chartered Accountants of India (the "**Projections of Revenue from Operations and Cash Flow from Operating Activities**"). For further details, please see the section entitled "*Projections of Revenue from Operations and Cash Flow from Operating Activities*" on page 524.

Further, this Draft Placement Memorandum includes summary of the audited financial statements of the (i) Sponsor, as of and for the financial years ended March 31, 2020, March 31, 2019 and March 31, 2018 prepared in accordance with Ind AS and the Companies Act; and (ii) Investment Manager, as of and for the financial years ended March 31, 2020, March 31, 2019 and March 31, 2018, prepared in accordance with Indian GAAP, derived from the consolidated financial statements of the Sponsor for the respective years and from the consolidated financial statements of the Investment Manager for the respective years*. For further details, please see the sections entitled "*Summary Financial Information of the Sponsor*" and "*Summary Financial Information of the Investment Manager*" on pages 36 and 40, respectively.

**The Investment Manager is presently in the process of divesting its entire shareholding in its subsidiary, Shrem Airport Hotels Private Limited, to Shrem Ajanta Infrastructure Private Limited. After such divestment, the Investment Manager will have no subsidiaries.*

The financial year for the Trust, the Sponsor, the Investment Manager and the Initial Portfolio Assets, commences on April 1 and ends on March 31 of the next year, and accordingly, all references to a particular financial year or fiscal year, unless stated otherwise, are to the 12-month period ended on March 31 of that year.

The degree to which the financial information included in this Draft Placement Memorandum will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting policies and practices, the Companies Act, the Indian GAAP, Ind AS and the InvIT Regulations. The Investment Manager has not attempted to explain these differences or quantify their impact on the financial data included in this Draft Placement Memorandum, and it is urged that you consult your own advisors regarding such differences and their impact on our financial data. Any reliance by persons not familiar with Indian accounting policies and practices on the financial disclosures presented in this Draft Placement Memorandum should accordingly be limited.

In this Draft Placement Memorandum, any discrepancies in any table between the total and the sums of the amounts listed are due to rounding off. All figures and percentage figures have been rounded off to two decimal places.

Currency and Units of Presentation

All references to:

- "Rupees" or "₹" or "INR" or "Rs." are to Indian Rupees, the official currency of the Republic of India; and
- "USD" or "US$" or "$" or "U.S. dollars" are to United States Dollars, the official currency of the United States.

Except otherwise specified, certain numerical information in this Draft Placement Memorandum has been presented in "million" units. One million represents 1,000,000 and one billion represents 1,000,000,000.

Unless the context requires otherwise, any percentage amounts, as set forth in this Draft Placement Memorandum, have been calculated on the basis of the Audited Special Purpose Combined Financial Statements, and the summary financial statements of (i) the Sponsor (on a consolidated basis); and (ii) the Investment Manager (on a consolidated basis).

Exchange Rates

This Draft Placement Memorandum contains conversion of certain other currency amounts into Indian Rupees. These conversions should not be construed as a representation that these currency amounts could have been, or can be converted into Indian Rupees, at any particular rate.

The following table sets forth, for the periods indicated, information with respect to the exchange rate between the Rupee and the US$:

(in ₹ per US$)

Currency	As of December 31, 2020	As of March 31, 2020	As of March 31, 2019	As of March 31, 2018
1 US$	73.05	75.39	69.17	65.04

Source: www.rbi.org.in (for the period prior to July 10, 2018) and www.fbil.org.in (for the period post-July 10, 2018)
Note: If the RBI reference rate is not available on a particular date due to a public holiday, exchange rates of the previous working day has been disclosed. The reference rates are rounded off to two decimal places.

Industry and Market Data

Unless stated otherwise, industry and market data used in this Draft Placement Memorandum has been obtained or derived from publicly available information, publications of the Government and other sources.

Industry publications as well as Government publications generally state that the information contained in such publications has been obtained from various sources believed to be reliable but that their accuracy and completeness are not guaranteed and their reliability cannot be assured. Accordingly, no investment decisions should be based solely on such information. Although the Investment Manager and the Sponsor believe that the industry and market data used in this Draft Placement Memorandum is reliable, it has not been independently verified by the Investment Manager or the Sponsor or the Trustee or the Lead Manager or any of their respective affiliates or advisors. The data used in these sources may have been re-classified for the purposes of presentation. Data from these sources may also not be comparable. Such data involves risks, uncertainties and numerous assumptions and is subject to change based on various factors, including those disclosed in the section entitled "*Risk Factors*" on page 59. Accordingly, investment decisions should not be based solely on such information.

The extent to which the market and industry data used in this Draft Placement Memorandum is meaningful depending on the reader's familiarity with and understanding of the methodologies used in compiling such data. There are no standard data gathering methodologies in the industry in which the business of the Trust is conducted, and methodologies and assumptions may vary widely among different industry sources.

FORWARD-LOOKING STATEMENTS

Certain statements contained in this Draft Placement Memorandum that are not statements of historical fact constitute "forward-looking statements". Investors can generally identify forward-looking statements by terminology such as "aim", "anticipate", "believe", "continue", "can", "could", "estimate", "expect", "intend", "likely", "may", "objective", "plan", "potential", "project", "pursue", "shall", "should", "will", "would", or other words or phrases of similar import. Similarly, statements that describe the strategies, objectives, plans or goals of the Trust are also forward-looking statements. However, these are not the exclusive means of identifying forward-looking statements.

All statements regarding the Trust's expected financial conditions, results of operations, business plans and prospects are forward-looking statements. These forward-looking statements include statements as to the Trust's business strategy, planned projects, revenue and profitability (including, without limitation, any financial or operating projections or forecasts), new business and other matters discussed in this Draft Placement Memorandum that are not historical facts. These forward-looking statements and any other projections contained in this Draft Placement Memorandum (whether made by the Trustee, Investment Manager or any third party), are predictions and involve known and unknown risks, uncertainties, assumptions and other factors that may cause the Trust's actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements or other projections. Further, this Draft Placement Memorandum also includes the section entitled "*Projections of Revenue from Operating and Cash Flow from Operating Activities*" on page 524.

The Valuation Report included in this Draft Placement Memorandum, is based on certain projections and accordingly, should be read together with assumptions and notes thereto. For further details, please see the "*Valuation Report*" attached as Annexure A. The Technical Reports include projections and estimates in relation to routine and periodic maintenance, including operation and maintenance, and accordingly, should be read in conjunction with the relevant notes and assumptions thereto.

All forward-looking statements and financial projections are subject to risks, uncertainties and assumptions. Actual results may differ materially from those suggested by forward-looking statements and financial projections due to certain known or unknown risks or uncertainties associated with the Investment Manager's expectations with respect to, but not limited to, the actual growth in the infrastructure sector, the Investment Manager's ability to successfully implement the strategy, growth and expansion plans, technological changes, cash flow projections, exposure to market risks, general economic and political conditions in India, monetary and fiscal policies of India, inflation, deflation. foreign exchange rates, performance of financial markets in India or globally, changes in domestic laws, regulations and taxes, changes in competition in the infrastructure sector, the outcome of any legal or regulatory proceedings and the future impact of new accounting standards. By their nature, certain of the market risk disclosures are only estimates and could be materially different from what actually occurs in the future. As a result, actual future gains, losses or impact on net income could materially differ from those that have been estimated.

Factors that could cause actual results, performance or achievements of the Trust to differ materially include, but are not limited to, those discussed under the sections entitled "*Risk Factors*", "*Industry Overview*", "*Business*" and "*Discussion and analysis by the Directors of the Investment Manager of the financial condition, results of operations and cash flows of the Initial Portfolio Assets of the Trust*", on pages 59, 136, 144 and 379, respectively. Some of the factors that could cause the Trust's actual results, performance or achievements to differ materially from those in the forward-looking statements, financial projections and financial information include, but are not limited to, the following:

- We propose to intimate our lenders in relation to the transactions contemplated under the Issue or the refinancing of the loans obtained by the Project SPVs from banks and other financial institutions;
- Some of our business approvals and applications for business approvals are not traceable;
- A significant portion of our concessions have been granted by MPRDC. Further, a significant portion of our projected revenue will be derived from the NHAI HAM Projects;
- Some of our Project SPVs and the Holding Companies have availed non-interest bearing unsecured loans from the Sponsor, other Shrem group entities and/or other parties that may be;
- The lenders of the Project SPVs may not release the security that has been created pursuant to loan agreements that have been entered into between the Project SPVs and their lenders;
- The Trust proposes to incur indebtedness, the terms of which may impose restrictions and conditions which may adversely affect the Trust's ability to conduct its business;
- The terms of the Project Implementation and Management Agreements, O&M Agreements and the Subscription Agreements may change subject to comments provided by Concessioning Authorities;

- The Valuation Report by S. Sundararaman is not an opinion on the commercial merits and structure of the Issue nor is it an opinion, express or implied, as to the future trading price of Units or the financial condition of Trust upon the Listing, and the valuation of the Project SPVs contained in such Valuation Report may not be indicative of the true value of the Project SPVs;

- The accuracy of statistical and other information with respect to the road infrastructure sector and the traffic assessment report commissioned by the Investment Manager for the Toll Projects contained in this Draft Placement Memorandum cannot be guaranteed; and

- The acquisition by the Trust of the Project SPVs from the Sponsor may be subject to certain risks, which may result in damages and losses, and conditions that may prevent the Trust from acquiring the Project SPVs or providing debt financing to them.

The forward-looking statements, Projections of Revenue from Operations and Cash Flow from Operating Activities, Valuation Report and Technical Reports reflect current views as of the date of this Draft Placement Memorandum and are not a guarantee of future performance or returns to Bidders. These statements and projections are based on certain beliefs and assumptions, which in turn are based on currently available information. Although the Investment Manager and the Sponsor believe that the expectations and the assumptions upon which such forward-looking statements are based, are reasonable at this time, none of the Investment Manager or the Sponsor can assure Bidders that such expectations will prove to be correct or accurate.

In accordance with the InvIT Regulations, the assumptions underlying the Projections of Revenue from Operations and Cash Flow from Operating Activities have been certified by the Auditors. The Projections of Revenue from Operations and Cash Flow from Operating Activities have been prepared for inclusion in this Draft Placement Memorandum for the purposes of this Issue, using a set of assumptions that include hypothetical assumptions about future events and management's actions that are not necessarily expected to occur, and have been approved by the board of directors of the Investment Manager. Consequently, Bidders are cautioned that the Projections of Revenue from Operations and Cash Flow from Operating Activities may not be appropriate for purposes other than that described above. In any event, these statements speak only as of the date of this Draft Placement Memorandum or the respective dates indicated in this Draft Placement Memorandum.

The Trust, the Investment Manager, the Sponsor and the Lead Manager or any of their affiliates or advisors, undertake no obligation to update or revise any of statements reflecting circumstances arising after the date hereof or to reflect the occurrence of underlying events, whether as a result of new information, future events or otherwise after the date of this Draft Placement Memorandum. If any of these risks and uncertainties materialize, or if any of the Investment Manager's underlying assumptions prove to be incorrect, the actual results of operations or financial condition or cash flow of the Trust could differ materially from that described herein as anticipated, believed, estimated or expected. All subsequent forward-looking statements attributable to the Trust are expressly qualified in their entirety by reference to these cautionary statements. Given these uncertainties, Bidders are cautioned not to place undue reliance on such forward-looking statements and financial projections, and not to regard such statements to be a guarantee or assurance of the Trust's future performance or returns to investors.

THE ISSUE

The following is a general summary of the terms of this Issue. This summary should be read in conjunction with, and is qualified in its entirety by, the detailed information appearing elsewhere in this Draft Placement Memorandum:

Issue	Up to [●] Units aggregating up to ₹ 6,000 million
Issue Price	₹ [●]
Minimum Bid Size	₹ 260 million
Bid/Issue Opening Date	[●]
Bid/Issue Closing Date	[●]
Sponsor	Shrem Infra Structure Private Limited
Trustee	Axis Trustee Services Limited
Investment Manager	Shrem Financial Private Limited
Project Manager	Shrem Road Projects Private Limited
Eligible Investors	Institutional Investors and Bodies Corporate, Indian or foreign, subject to applicable law
Authority for this Issue	This Issue was authorised, and approved by the board of directors of the Investment Manager on February 22, 2021.
Tenure of the Trust	The Trust shall remain in force perpetually until it is dissolved or terminated in accordance with the Trust Deed. For details, please see the section entitled "*Parties to the Trust*" on page 94.
Units issued and outstanding as of the date of this Draft Placement Memorandum	As of the date of this Draft Placement Memorandum, there are no issued and outstanding Units.
Units issued and outstanding immediately after this Issue	Up to [●] Units
Sponsor Units as on the date of the Placement Memorandum	Up to [●] Units The Units held by the Sponsor shall rank *pari passu* with, and have the same rights as the Units to be Allotted pursuant to this Issue. The Units to be held by the Sponsor have been allotted to the Sponsor pursuant to the resolution of the board of directors of the Investment Manager dated [●]
Distribution	Please see the section entitled "*Distribution*" on page 376
Indian Taxation	Please see the section entitled "*Statement of Tax Benefits"* on page 442
Use of Proceeds	Please see the section entitled "*Use of Proceeds*" on page 367
Listing	Prior to this Issue, there has been no market for the Units. The Units are proposed to be listed on the Stock Exchange. In-principle approval for listing of the Units has been received from NSE on [●]. The Investment Manager shall apply to the Stock Exchange for the final listing and trading approval, after the Allotment and the credit of the Units to the demat accounts of the Allottees
Designated Stock Exchange	The National Stock Exchange of India Limited
Closing Date	The date on which Allotment of the Units pursuant to this Issue shall be made, i.e. on or about [●]
Ranking	The Units being issued shall rank *pari passu* in all respects, including rights in respect of distribution. Please see the section entitled *"Rights of Unitholders"* on page 430
Lock-in and Rights of Unitholders	For details, please see the sections entitled "*Information Concerning the Units*" and "*Rights of Unitholders*" on pages 366 and 430, respectively
Risk Factors	Prior to making an investment decision, Bidders should consider carefully the matters discussed in the section entitled *"Risk Factors*" on page 59

Upon listing of the Units on the Stock Exchange, the Units shall be traded only on the dematerialized segment of the Stock Exchange.

In accordance with the InvIT Regulations, no Unitholder shall enjoy superior voting or any other rights over another Unitholder. Further, there shall not be multiple classes of Units. However, in the future, the Trust may issue subordinate units of the Trust only to the Sponsor and its Associates, in compliance with the InvIT Regulations, where such subordinate units of the Trust shall carry only inferior voting or other rights compared to the Units.

For further details in relation to this Issue, including the method of application, please see the section entitled "*Issue Information*" on page 435.

OVERVIEW OF THE TRUST

The following overview is qualified in its entirety by, and is subject to, the more detailed information contained in, or referred to elsewhere, in this Draft Placement Memorandum. The statements contained in this summary that are not historical facts may be forward-looking statements. Such statements are subject to certain risks, uncertainties and assumptions that could cause actual results of the Trust to differ materially from those forecasted or projected in this Draft Placement Memorandum. Under no circumstances should the inclusion of such information herein be regarded as a representation, warranty or prediction of the accuracy of the underlying assumptions by the Trust, the Parties to the Trust or the Lead Manager or any other person or that these results will be achieved or are likely to be achieved. Investment in Units involves risks. Bidders are advised not to rely solely on this overview, however, should read this Draft Placement Memorandum in its entirety and, in particular, the section entitled "Risk Factors" on page 59.

Structure and description of the Trust

The Sponsor set up the Trust on December 31, 2020, as an irrevocable trust under the provisions of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the InvIT Regulations on February 4, 2021 having registration number IN/InvIT/20-21/0017. The Sponsor has settled the Trust for an initial sum of ₹ 10,000. The Sponsor shall not have any beneficial interest in such initial sum of the Trust and such sum shall not be distributed to Sponsor under any circumstances.

For details of the registered office and contact person of the Sponsor, please see the section entitled *"General Information"* on page 90.

Further, Shrem Financial Private Limited has been appointed as the Investment Manager, and Shrem Road Projects Private Limited has been appointed as the Project Manager to the Trust. For further details, please see the section entitled "*Parties to the Trust*" on page 94.

Investment Objectives

The objective of the Trust is to carry on the activities of, and to make investments as, an infrastructure investment trust, as permissible in terms of the InvIT Regulations, and to make investments in Holding Companies and / or SPVs and / or infrastructure projects and / or securities in India, in accordance with the InvIT Documents and as permitted under applicable law.

The Investment Objectives of the Trust is as follows:

(a). to raise funds in accordance with applicable law, for purpose of attaining the object and purpose of the Trust;

(b). to make investments or re-investments in accordance with the InvIT Documents and applicable law;

(c). to park amounts held by the Trust pending investment or distribution, or as a reserve of the Trust's anticipated obligations, in temporary short term investments such as high-grade money market instruments, short term deposits with banks and financial institutions and debt based market funds to the extent permitted under the InvIT Regulations;

(d). to make distributions to the Unitholders in the manner set out in the Trust Deed; and

(e). to do all other things necessary and conducive to the attainment of the Investment Objectives of the Trust, directly or through agents or other delegates (including the Investment Manager).

The Trust, through the Trustee or the Investment Manager (as applicable), is entitled to do all other things necessary or conducive to the attainment of the objectives and the Investment Objectives, as is reasonably practicable, subject to the provisions of the InvIT Regulations. The Trustee shall ensure that the Trust shall invest in the Holding Companies or SPVs or infrastructure projects or securities in India, in the manner provided under the InvIT Regulations.

Subject to, and as contemplated in, the InvIT Regulations and the InvIT Documents, the Trust may invest amounts held by it pending investments, distributions, as a reserve or any other permitted use of the InvIT Assets in short-term investments, through such instruments, as may be permitted under the InvIT Regulations.

The Trustee shall ensure that at all times during the term of the Trust, the utilisation of the InvIT Assets and the activities of the Trust shall comply with the provisions of the InvIT Documents and applicable laws. The Trustee shall ensure that the Trust shall not carry on any other business or trade, in contradiction of the restrictions and requirements under applicable law.

Fee and expenses

Annual Expenses

The expenses in relation to the Trust, other than such expenses incurred in relation to operations of the Initial Portfolio Assets, would broadly include fee payable to: (i) the Trustee; (ii) the Investment Manager; (iii) the Project Manager; (iv) the Auditors, (v) the Valuer; and (vi) other intermediaries and consultants.

The estimated recurring expenses on an annual basis, including but not limited to, are as follows:

(₹ in million)

Payable by the Trust	Estimated Expenses*
Fee payable to Credit Rating Agency	3.0
Fee payable to the Valuer	0.60
Fee payable to the Auditors	3.50
Fee payable to Trustee	1.50
Fee payable to Investment Manager	105.0
Fee payable to Project Manager	52.50

**The above-mentioned expenses relate to the first full year of operation for the Trust i.e. Financial Year 2022*

Set-up expenses

The expenses in relation to setting up the Trust, being an aggregate of ₹ 1.01 million, have been borne by the Sponsor, on behalf of the Trust.

Issue Expenses

The total expenses of this Issue are estimated to be up to ₹ [●] million. For details in relation to the Issue expenses, please see the section entitled "*Use of Proceeds*" on page 367.

Details of credit ratings

The Trust has been given an issuer rating of 'Provisional IND AAA' with a 'Stable' outlook by India Ratings and Research, a Fitch Group company, the rationale for which is available at the website www.indiaratings.co.in.

FORMATION TRANSACTIONS IN RELATION TO THE TRUST

Details of arrangement pertaining to the Trust

The Trust's initial portfolio of assets comprises 24 road project SPVs, acquired or to be acquired by the Sponsor through three companies, namely, Shrem Roadways Private Limited ("**SRPL**"), Shrem Tollway Private Limited ("**STPL**") and Shrem Infraventure Private Limited ("**SIPL**"), namely, (i) Suryavanshi Infrastructure Private Limited, (ii) DBL Nadiad Modasa Tollways Limited, (iii) DBL Jaora-Sailana Tollways Limited, (iv) DBL Bankhlafata-Dogawa Tollways Limited, (v) DBL Ashoknagar Vidisha Tollways Ltd, (vi) DBL Silwani-Sultanganj Tollways Limited, (vii) DBL Sitamau-Suwasara Tollways Limited, (viii) DBL Hata-Dargawon Tollways Limited, (ix) DBL Patan Rehli Tollways Limited, (x) DBL Mundi-Sanawad Tollways Limited, (xi) DBL Uchera – Nagod Tollways Limited, (xii) DBL Betul-Sarni Tollways Limited, (xiii) DBL Tikamgarh-Nowgaon Tollways Limited, (xiv) DBL Sardarpur Badnawar Tollways Limited, (xv) DBL Mundargi Harapanahalli Tollways Limited, (xvi) DBL Hassan Periyapatna Tollways Limited, (xvii) DBL Hirekerur Ranibennur Tollways Limited, (xviii) DBL Lucknow Sultanpur Highways Limited, (xix) DBL Tuljapur Ausa Highways Limited, (xx) DBL Kalmath Zarap Highways Limited, (xxi) DBL Mahagaon Yavatmal Highways Private Limited, (xxii) DBL Yavatmal Wardha Highways Private Limited, (xxiii) DBL Wardha Butibori Highways Private Limited, and (xxiv) Jalpa Devi Tollways Limited (together, "the **Project SPVs**"). The details of the Initial Portfolio Assets as of the date of this Draft Placement Memorandum are provided below:

1. Shrem Roadways Private Limited ("SRPL")

SRPL was incorporated on February 14, 2017 under the Companies Act, 2013 (CIN U45309MH2017PTC291157) as a private limited company. Its registered office is located at 1101, Viraj Towers, Junction of Andheri Kurla Road, Western Express Highway, Andheri (East), Mumbai 400 069. The authorised capital of the company is ₹ 100,000,000 (divided into 10,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 100,000,000 (divided into 10,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. The shareholding pattern of SRPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name*	No. of Equity Shares	Percentage (%)
1.	Shrem Infra Structure Private Limited	9,390,000	93.90
2.	RS Infra Advisors and Consultants LLP	600,000	6.00
3.	Nitan Chhatwal	5,000	0.05
4.	Hitesh Chhatwal	5,000	0.05
Total		**10,000,000**	**100.00**

***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SRPL and the other shareholders of SRPL shall enter into a letter agreement, pursuant to which the other shareholders of SRPL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of SRPL that prevents the Trust or SRPL from complying with the provisions of applicable law, including the InvIT Regulations.*

2. Shrem Infraventure Private Limited ("SIPL")

SIPL was incorporated on October 25, 2010 under the Companies Act, 1956 (CIN U45100MH2010PTC209421) as a private limited company. Its registered office is located at 1101, Viraj Towers, Junction of Andheri Kurla Road, Western Express Highway, Andheri (East), Mumbai 400 069. The authorised capital of the company is ₹ 100,000,000 (divided into 10,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 100,000,000 (divided into 10,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. The shareholding pattern of SIPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name*	No. of Equity Shares	Percentage (%)
1.	Shrem Infra Structure Private Limited	7,090,000	70.90
2.	Chhatwal Group Trust	2,300,000	23.00
3.	RS Infra Advisors and Consultants LLP	600,000	6.00
4.	Nitan Chhatwal	5,000	0.05
5.	Hitesh Chhatwal	5,000	0.05
Total		**10,000,000**	**100.00**

***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SIPL and the other shareholders of SIPL shall enter into a letter agreement, pursuant to which the other shareholders of SIPL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of SIPL that prevents the Trust or SIPL from complying with the provisions of applicable law, including the InvIT Regulations.*

3. Shrem Tollway Private Limited ("STPL")

STPL was incorporated on March 5, 2012 under the Companies Act, 1956 (CIN U45100MH2012PTC227647) as a private limited company. Its registered office is located at 1101, Viraj Towers, Junction of Andheri Kurla Road, Western Express Highway, Andheri (East), Mumbai 400 069. The authorised capital of the company is ₹ 20,000,000 (divided into 2,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. The shareholding pattern of STPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name*	No. of Equity Shares	Percentage (%)
1.	Shrem Infra Structure Private Limited	552,093	55.21
2.	Shrem Investments Private Limited	287,907	28.79
3.	RS Infra Advisors and Consultants LLP	150,000	15.00
4.	Nitan Chhatwal	5,000	0.50
5.	Hitesh Chhatwal	5,000	0.50
Total		**1,000,000**	**100.00**

***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, STPL and the other shareholders of STPL shall enter into a letter agreement, pursuant to which the other shareholders of STPL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of STPL that prevents the Trust or STPL from complying with the provisions of applicable law, including the InvIT Regulations.*

A. Projects held or proposed to be held by Shrem Roadways Private Limited are as follows:

1. Suryavanshi Infrastructure Private Limited ("Suryavanshi Infrastructure")

Suryavanshi Infrastructure was incorporated on April 19, 2007 under the Companies Act, 1956 (CIN U45203MP2007PTC019459) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,200,000 (divided into 120,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 868,000 (divided into 86,800 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by Suryavanshi Infrastructure as at the date of this Draft Placement Memorandum. The shareholding pattern of Suryavanshi Infrastructure as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	86,700	99.89
2.	Nitan Ramprakash Chhatwal*	30	0.04
3.	Smita Nitan Chhatwal*	20	0.02
4.	Krishani Nitan Chhatwal*	20	0.02
5.	Hitesh Ramprakash Chhatwal*	10	0.01
6.	Anjali Hitesh Chhatwal*	10	0.01
7.	Aaryaman Nitan Chhatwal*	10	0.01
Total		**86,800**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

2. DBL Nadiad Modasa Tollways Limited ("DNMTL")

DNMTL was incorporated on June 15, 2011 under the Companies Act, 1956 (CIN U45200MP2011PLC026188) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 434,000,000, consisting of: (i) ₹ 290,000,000 (divided into 29,000,000 class A equity shares of ₹ 10 each); and (ii) ₹ 144,000,000 (divided into 14,400,000 class B equity shares of ₹ 10 each, which rank *pari passu* with class A except that class B equity shares are not entitled to any dividend), and its issued subscribed and paid-up capital is ₹ 286,550,000 (divided into 28,655,000 Class A equity shares of ₹ 10 each) and no class B equity shares, as at the date of this Draft Placement Memorandum. No preference shares have been issued by DNMTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DNMTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name**	No. of Class A Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	21,204,600	74.00
2.	Dilip Buildcon Limited	7,450,300	26.00
3.	Nitan Ramprakash Chhatwal*	30	Negligible

Sr. No.	Shareholder's Name**	No. of Class A Equity Shares	Percentage (%)
4.	Smita Nitan Chhatwal*	20	Negligible
5.	Krishani Nitan Chhatwal*	20	Negligible
6.	Hitesh Ramprakash Chhatwal*	10	Negligible
7.	Anjali Hitesh Chhatwal*	10	Negligible
8.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**28,655,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*
***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SRPL, DNMTL and the other shareholders of DNMTL shall enter into a letter agreement, pursuant to which the other shareholders of DNMTL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of DNMTL that prevents the Trust, SRPL or DNMTL from complying with the provisions of applicable law, including the InvIT Regulations.*

3. ***DBL Jaora-Sailana Tollways Limited*** *("DJSTL")*

DJSTL was incorporated on November 29, 2012 under the Companies Act, 1956 (CIN U45200MP2012PLC029593) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 200,000,000 (divided into 20,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 200,000,000 (divided into 20,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DJSTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DJSTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	19,999,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
4.	Smita Nitan Chhatwal*	20	Negligible
5.	Krishani Nitan Chhatwal*	20	Negligible
6.	Hitesh Ramprakash Chhatwal*	10	Negligible
7.	Anjali Hitesh Chhatwal*	10	Negligible
8.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**20,000,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

4. ***DBL Bankhlafata-Dogawa Tollways Limited*** *("DBDTL")*

DBDTL was incorporated on December 31, 2012 under the Companies Act, 1956 (CIN U45200MP2012PLC029819) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 160,000,000 (divided into 16,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 160,000,000 (divided into 16,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DBDTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DBDTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	15,999,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**16,000,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

5. ***DBL Ashoknagar-Vidisha Tollways Limited*** *("DAVTL")*

DAVTL was incorporated on February 27, 2013 under the Companies Act, 1956 (CIN U45200MP2013PLC030153) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 199,600,000 (divided into 19,960,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 199,600,000 (divided into 19,960,000 equity shares of ₹ 10 each), as at the

date of this Draft Placement Memorandum. No preference shares have been issued by DAVTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DAVTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	19,959,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**19,960,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

6. ***DBL Silwani-Sultanganj Tollways Limited*** *("**DBL Silwani**")*

DBL Silwani was incorporated on August 17, 2011 under the Companies Act, 1956 (CIN U45200MP2011PLC026586) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DBL Silwani as at the date of this Draft Placement Memorandum. The shareholding pattern of DBL Silwani as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	999,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**1,000,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

7. ***DBL Sitamau-Suwasara Tollways Limited*** *("**DBL Sitamau**")*

DBL Sitamau was incorporated on November 29, 2011 under the Companies Act, 1956 (CIN U45200MP2011PLC027212) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 77,500,000 (divided into 7,750,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 77,500,000 (divided into 7,750,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DBL Sitamau the date of this Draft Placement Memorandum. The shareholding pattern of DBL Sitamau as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	7,749,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**7,750,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

8. ***DBL Hata-Dargawon Tollways Limited*** *("**DHDTL**")*

DHDTL was incorporated on August 3, 2015 under the Companies Act, 2013 (CIN U45203MP2015PLC034513) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 3,200,000 (divided into 320,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 797,560 (divided into 79,756 equity shares of ₹ 10 each), as at the date of this Draft

Placement Memorandum. No preference shares have been issued by DHDTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DHDTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
2.	Shrem Roadways Private Limited	79,656	99.87
3.	Nitan Ramprakash Chhatwal*	30	0.04
4.	Smita Nitan Chhatwal*	20	0.03
5.	Krishani Nitan Chhatwal*	20	0.03
6.	Hitesh Ramprakash Chhatwal*	10	0.01
7.	Anjali Hitesh Chhatwal*	10	0.01
8.	Aaryaman Nitan Chhatwal*	10	0.01
Total		**79,756**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

9. ***DBL Patan Rehli Tollways Limited*** *("**DPRTL**")*

DPRTL was incorporated on August 6, 2015 under the Companies Act, 2013 (CIN U45203MP2015PLC034537) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 1,010,350 (divided into 101,035 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DPRTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DPRTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	100,935	99.90
2.	Nitan Ramprakash Chhatwal*	30	0.03
3.	Smita Nitan Chhatwal*	20	0.02
4.	Krishani Nitan Chhatwal*	20	0.02
5.	Hitesh Ramprakash Chhatwal*	10	0.01
6.	Anjali Hitesh Chhatwal*	10	0.01
7.	Aaryaman Nitan Chhatwal*	10	0.01
Total		**101,035**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

10. ***DBL Mundi-Sanawad Tollways Limited*** *("**DMSTL**")*

DMSTL was incorporated on November 28, 2011 under the Companies Act, 1956 (CIN U45300MP2011PLC027193) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 10,000,000 (divided into 1,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DMSTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DMSTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	999,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**1,000,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

11. ***DBL Uchera-Nagod Tollways Limited*** *("**DUNTL**")*

DUNTL was incorporated on August 29, 2012 under the Companies Act, 1956 (CIN U45200MP2012PLC029098) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 320,000,000 (divided into 32,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 320,000,000 (divided into 32,000,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DUNTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DUNTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	31,999,900	99.99
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**320,000,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

12. ***DBL Betul-Sarni Tollways Limited*** *("**DBSTL**")*

DBSTL was incorporated on May 2, 2013 under the Companies Act, 1956 (CIN U45200MP2013PLC030636) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 16,608,000 (divided into 1,660,800 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 16,608,000 (divided into 1,660,800 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DBSTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DBSTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name**	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	1,660,700	99.99
2.	Dilip Suryavanshi*	30	Negligible
3.	Seema Suryavanshi*	20	Negligible
4.	Devendra Jain*	20	Negligible
5.	Dilip Mass Communication Private Limited*	10	Negligible
6.	High Fly Airlines Private Limited*	10	Negligible
7.	Suryavanshi Minerals Private Limited*	10	Negligible
Total		**1,660,800**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*

13. ***DBL Tikamgarh-Nowgaon Tollways Limited*** *("**DTNTL**")*

DTNTL was incorporated on November 7, 2013 under the Companies Act, 1956 (CIN U45200MP2013PLC031732) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 8,484,620 (divided into 848,462 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 8,484,620 (divided into 848,462 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DTNTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DTNTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	848,362	99.98
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**848,462**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

14. ***DBL Sardarpur Badnawar Tollways Limited*** *("**DSBTL**")*

DSBTL was incorporated on June 22, 2011 under the Companies Act, 1956 (CIN U45200MP2011PLC026234) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 2,500,000 (divided into 250,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 2,500,000 (divided into 250,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DSBTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DSBTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	249,900	99.96
2.	Nitan Ramprakash Chhatwal*	30	Negligible
3.	Smita Nitan Chhatwal*	20	Negligible
4.	Krishani Nitan Chhatwal*	20	Negligible
5.	Hitesh Ramprakash Chhatwal*	10	Negligible
6.	Anjali Hitesh Chhatwal*	10	Negligible
7.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**250,000**	**100.00**

**Nominee shareholder of Shrem Roadways Private Limited.*

15. ***DBL Mundargi Harapanahalli Tollways Limited*** *("**DMHTL**")*

DMHTL was incorporated on October 16, 2015 under the Companies Act, 2013 (CIN U45400MP2015PLC034854) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,750,000, consisting of: (i) ₹ 1,200,000 (divided into 120,000 class A equity shares of ₹ 10 each); and (ii) ₹ 550,000 (divided into 55,000 class B equity shares of ₹ 10 each, which rank *pari passu* with class A except that class B equity shares are not entitled to any dividend) and its issued subscribed and paid-up capital is divided into ₹ 1,056,610 (divided into 105,661 Class A equity shares of ₹ 10 each) and ₹ 371,240 Class B shares (divided into 37,124 Class B equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DMHTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DMHTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name***	No. of Class A Equity Shares	No. of Class B Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	105,561	-	73.93
2.	Dilip Buildcon Limited	-	37,124	26.00
3.	Nitan Ramprakash Chhatwal**	30	-	0.02
4.	Smita Nitan Chhatwal**	20	-	0.01
5.	Devendra Jain*	20	-	0.01
6.	Hitesh Ramprakash Chhatwal**	10	-	0.007
7.	Karan Suryavanshi*	10	-	0.007
8.	Aaryaman Nitan Chhatwal**	10	-	0.007
Total		**105,661**	**37,124**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*
**Nominee shareholder on behalf of Shrem Roadways Private Limited.*
****The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SRPL, DMHTL and the other shareholders of DMHTL shall enter into a letter agreement, pursuant to which the other shareholders of DMHTL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of DMHTL that prevents the Trust, SRPL or DMHTL from complying with the provisions of applicable law, including the InvIT Regulations.*

16. **DBL Hassan Periyapatna Tollways Limited** ("**DHPTL**")

DHPTL was incorporated on October 21, 2015 under the Companies Act, 2013 (CIN U45203MP2015PLC034878) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,450,000, consisting of: (i) ₹ 1,000,000 (divided into 100,000 class A equity shares of ₹ 10 each); and (ii) ₹ 450,000 (divided into 45,000 class B equity shares of ₹ 10 each, which rank *pari passu* with class A except that class B equity shares are not entitled to any dividend), and its issued subscribed and paid-up capital is divided into ₹ 872,270 (divided into 87,227 Class A equity shares of ₹ 10 each) and ₹ 306,470 (divided into 30,647 Class B equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DHPTL, as at the date of this Draft Placement Memorandum. The shareholding pattern of DHPTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name**	No. of Class A Equity Shares (Class A)	No. of Class B Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	87,127	30,647	99.92
2.	Dilip Suryavanshi*	30	-	0.03
3.	Seema Suryavanshi*	20	-	0.02
4.	Devendra Jain*	20	-	0.02
5.	Rajaram Shivhare*	10	-	0.01
6.	Karan Suryavanshi*	10	-	0.01

7.	Bharat Singh*	10	-	0.01
Total		**87,227**	**30,647**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*
***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SRPL, DHPTL and the other shareholders of DHPTL shall enter into a letter agreement, pursuant to which the other shareholders of DHPTL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of DHPTL that prevents the Trust, SRPL or DHPTL from complying with the provisions of applicable law, including the InvIT Regulations.*

17. ***DBL Hirekerur Ranibennur Tollways Limited*** *("**DHRTL**")*

DHRTL was incorporated on October 23, 2015 under the Companies Act, 2013 (CIN U45200MP2015PLC034882) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,900,000, consisting of: (i) ₹ 1,300,000 (divided into 130,000 class A equity shares of ₹ 10 each); and (ii) ₹ 600,000 (divided into 60,000 class B equity shares of ₹ 10 each, which rank *pari passu* with class A except that class B equity shares are not entitled to any dividend), and its issued subscribed and paid-up capital is divided into ₹ 1,198,340 (divided into 119,834 Class A equity shares of ₹ 10 each) and ₹ 421,040 (divided into 42,104 Class B equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DHRTL as at the date of this Draft Placement Memorandum. The shareholding pattern of DHRTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name***	No. of Class A Equity Shares	No. of Class B Equity Shares	Percentage (%)
1.	Shrem Roadways Private Limited	119,734	-	73.94
2.	Dilip Buildcon Limited	-	42,104	26.00
3.	Nitan Ramprakash Chhatwal**	30	-	0.02
4.	Smita Nitan Chhatwal**	20	-	0.01
5.	Krishani Nitan Chhatwal**	20	-	0.01
6.	Hitesh Ramprakash Chhatwal**	10	-	0.006
7.	Karan Suryavanshi*	10	-	0.006
8.	Aaryaman Nitan Chhatwal**	10	-	0.006
Total		**119,834**	**42,104**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited*
***Nominee shareholder on behalf of Shrem Roadways Private Limited.*
****The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, SRPL, DHRTL and the other shareholders of DHRTL shall enter into a letter agreement, pursuant to which the other shareholders of DHRTL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of DHRTL that prevents the Trust, SRPL or DHRTL from complying with the provisions of applicable law, including the InvIT Regulations.*

B. Projects held or proposed to be held by Shrem Infraventure Private Limited are as follows:

1. ***DBL Lucknow Sultanpur Highways Limited*** *("**DLSHL**")*

DLSHL was incorporated on September 9, 2016 under the Companies Act, 2013 (CIN U45500MP2016PLC041454) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 40,000,000 (divided into 4,000,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 20,996,110 (divided into 2,099,611 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DLSHL as at the date of this Draft Placement Memorandum. The shareholding pattern of DLSHL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	1,070,802	51.00
2.	Shrem Infraventure Private Limited	1,028,709	48.99
3.	Nitan Ramprakash Chhatwal*	30	Negligible
4.	Smita Nitan Chhatwal*	20	Negligible
5.	Krishani Nitan Chhatwal*	20	Negligible
6.	Hitesh Ramprakash Chhatwal*	10	Negligible
7.	Anjali Hitesh Chhatwal*	10	Negligible
8.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**2,099,611**	**100.00**

**Nominee shareholder of Shrem Infraventure Private Limited.*

2. ***DBL Tuljapur Ausa Highways Limited*** *("**DTAHL**")*

DTAHL was incorporated on March 24, 2017 under the Companies Act, 2013 (CIN U45500MP2017PLC042967) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 2,000,000 (divided into 200,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 1,436,910 (divided into 143,691 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DTAHL as at the date of this Draft Placement Memorandum. The shareholding pattern of DTAHL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Shrem Infraventure Private Limited	70,409	49.00
2.	Dilip Buildcon Limited	73,192	50.94
3.	Seema Suryavanshi*	30	0.02
4.	Devendra Jain*	20	0.01
5.	Karan Suryavanshi*	20	0.01
6.	Bharat Singh*	10	Negligible
7.	Raja Ghosh*	10	Negligible
Total		**143,691**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*

3. ***DBL Kalmath Zarap Highways Limited*** *("**DKZHL**")*

DKZHL was incorporated on December 13, 2016 under the Companies Act, 2013 (CIN U45203MP2016PLC041978) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,000,000 (divided into 100,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 500,000 (divided into 50,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DKZHL as at the date of this Draft Placement Memorandum. The shareholding pattern of DKZHL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	25,500	51.00
2.	Shrem Infraventure Private Limited	24,400	48.80
2.	Nitan Ramprakash Chhatwal*	30	0.06
3.	Smita Nitan Chhatwal*	20	0.04
4.	Krishani Nitan Chhatwal*	20	0.04
5.	Hitesh Ramprakash Chhatwal*	10	0.02
6.	Anjali Hitesh Chhatwal*	10	0.02
7.	Aaryaman Nitan Chhatwal*	10	0.02
Total		**50,000**	**100.00**

**Nominee shareholder of Shrem Infraventure Private Limited.*

4. ***DBL Mahagaon Yavatmal Highways Private Limited*** *("**DMYHPL**")*

DMYHPL was incorporated on April 24, 2017 under the Companies Act, 2013 (CIN U45309MP2017PTC043177) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 3,500,000 (divided into 350,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 1,458,020 (divided into 145,802 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DMYHPL as at the date of this Draft Placement Memorandum. The shareholding pattern of DMYHPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	145,702	99.93
2.	Seema Suryavanshi*	50	0.03
3.	Devendra Jain*	50	0.03
Total		**145,802**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*

5. ***DBL Yavatmal Wardha Highways Private Limited*** *("**DYWHPL**")*

DYWHPL was incorporated on April 21, 2017 under the Companies Act, 2013 (CIN U45500MP2017PTC043169) as a special

purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 1,000,000 (divided into 100,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 1,000,000 (divided into 100,000 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DYWHPL as at the date of this Draft Placement Memorandum. The shareholding pattern of DYWHPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	50,900	50.90
2.	Shrem Infraventure Private Limited	49,000	49.00
3.	Seema Suryavanshi*	50	0.05
4.	Devendra Jain*	50	0.05
Total		**100,000**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*

6. ***DBL Wardha Butibori Highways Private Limited*** *("**DWBHPL**")*

DWBHPL was incorporated on April 24, 2017 under the Companies Act, 2013 (CIN U45309MP2017PTC043184) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 3,000,000 (divided into 300,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 2,052,370 (divided into 205,237 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by DWBHPL as at the date of this Draft Placement Memorandum. The shareholding pattern of DWBHPL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	104,571	50.95
2.	Shrem Infraventure Private Limited	100,566	49.00
3.	Seema Suryavanshi*	50	0.02
4.	Devendra Jain*	50	0.02
Total		**205,237**	**100.00**

**Nominee shareholder of Dilip Buildcon Limited.*

C. Project held by Shrem Tollway Private Limited is as follows:

1. ***Jalpa Devi Tollways Limited*** *("**JDTL**")*

JDTL was incorporated on August 6, 2015 under the Companies Act, 2013 (CIN U45203MP2015PLC034538) as a special purpose vehicle. Its registered office is located at Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal 462 016. The authorised capital of the company is ₹ 45,000,000 (divided into 4,500,000 equity shares of ₹ 10 each) and its issued subscribed and paid-up capital is ₹ 41,808,440 (divided into 4,180,844 equity shares of ₹ 10 each), as at the date of this Draft Placement Memorandum. No preference shares have been issued by JDTL as at the date of this Draft Placement Memorandum. The shareholding pattern of JDTL as at the date of this Draft Placement Memorandum is provided below.

Sr. No.	Shareholder's Name	No. of Equity Shares	Percentage (%)
1.	Dilip Buildcon Limited	2,132,231	51.00
2.	Shrem Tollway Private Limited	2,048,513	48.99
3.	Nitan Ramprakash Chhatwal*	30	Negligible
4.	Smita Nitan Chhatwal*	20	Negligible
5.	Krishani Nitan Chhatwal*	20	Negligible
6.	Hitesh Ramprakash Chhatwal*	10	Negligible
7.	Anjali Hitesh Chhatwal*	10	Negligible
8.	Aaryaman Nitan Chhatwal*	10	Negligible
Total		**4,180,844**	**100.00**

**Nominee shareholder of Shrem Tollway Private Limited*

***The Trust (acting through the Trustee), the Trustee, the Investment Manager, the Sponsor, STPL, JDTL and the other shareholders of JDTL shall enter into a letter agreement, pursuant to which the other shareholders of JDTL shall have agreed, amongst others, to not exercise any rights, in relation to their holding in equity shares of JDTL that prevents the Trust, STPL or JDTL from complying with the provisions of applicable law, including the InvIT Regulations. Further, DBL shall have agreed to ensure that any decision taken by it with respect to JDTL, including in respect of exercising its right to vote in relation to the affairs of JDTL, shall be in compliance with the InvIT Regulations, not against the interest of the Trust or the Unitholders and in compliance with any guidelines that may be specified by SEBI in this regard.*

Acquisition of the Initial Portfolio Assets by the Trust and acquisition of the Units by the Sponsor

The Sponsor and certain other shareholders presently hold 100% of the equity shareholding of each of the Holdcos, which in turn hold certain shareholding in the Project SPVs. Prior to the Allotment, the Trust, acting through the Trustee, proposes to acquire from the Sponsor and the other shareholders, and the Sponsor and the other shareholders propose to transfer to the Trust in exchange for Units, the equity shareholding of each of the Holdcos, pursuant to the Securities Purchase Agreements (the "**Proposed Transfer**").

The Proposed Transfer shall be as set out below:

Sr. No.	Name of the Holdco	Pre-Issue shareholding of the Sponsor and other shareholders	Proposed post-Issue shareholding of the Trust
1.	SRPL	100.00%	100.00%
2.	SIPL	100.00%	100.00%
3.	STPL	100.00%	100.00%

Sr. No.	Name of the Project SPV	Pre-Issue shareholding of the Holdcos, DBL and their respective nominees	Proposed post-Issue shareholding of the Trust
SRPL			
1.	Suryavanshi Infrastructure	100.00%	100.00%
2.	DNMTL	100.00%	74.00%
3.	DJSTL	100.00%	100.00%
4.	DBDTL	100.00%	100.00%
5.	DAVTL	100.00%	100.00%
6.	DBL Silwani	100.00%	100.00%
7.	DBL Sitamau	100.00%	100.00%
8.	DHDTL	100.00%	100.00%
9.	DPRTL	100.00%	100.00%
10.	DMSTL	100.00%	100.00%
11.	DUNTL	100.00%	100.00%
12.	DBSTL	100.00%	100.00%
13.	DTNTL	100.00%	100.00%
14.	DSBTL	100.00%	100.00%
15.	DMHTL	100.00%	74.00%
16.	DHPTL	100.00%	74.00%
17.	DHRTL	100.00%	74.00%
18.	DLSHL	100.00%	100.00%
19.	DTAHL	100.00%	100.00%
20.	DKZHL	100.00%	100.00%
21.	DMYHPL	100.00%	100.00%
22.	DYWHPL	100.00%	100.00%
23.	DWBHPL	100.00%	100.00%
24.	JDTL	100.00%	100.00%

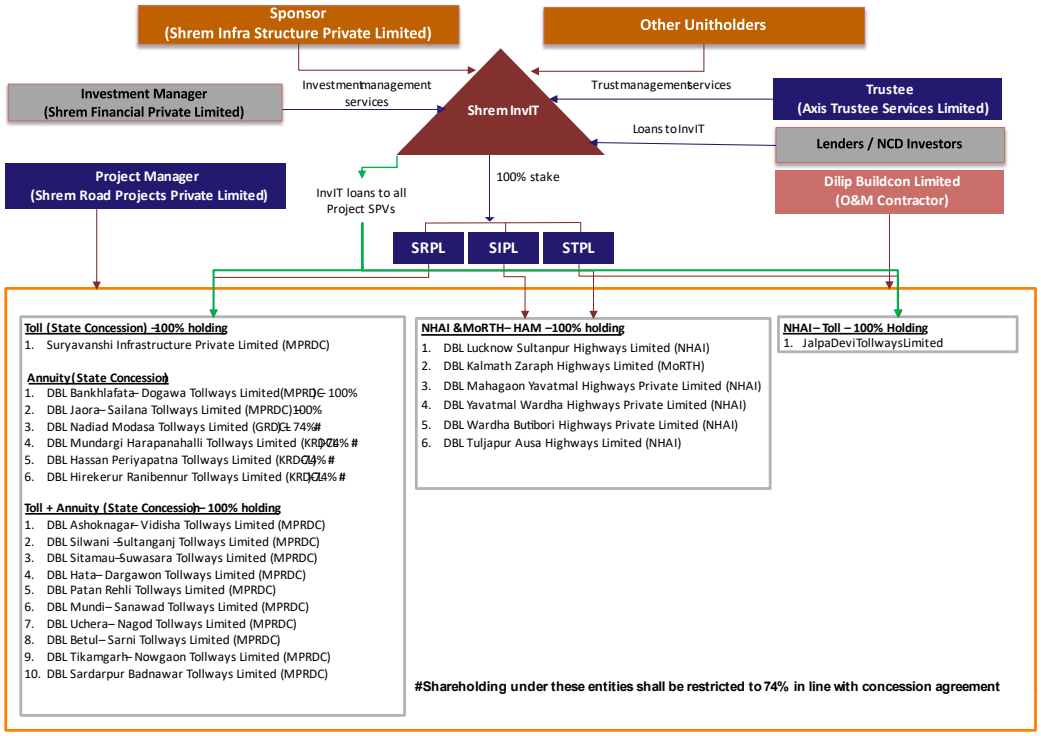
Utilisation of Issue Proceeds and InvIT Loan

Upon the listing of the Units, the Trust shall utilize the Issue Proceeds towards providing loans to certain Initial Portfolio Assets for repayment or pre-payment of debt, including any accrued interest, availed by them from certain banks and financial institutions. For further details, please see the section entitled "*Use of Proceeds*" on page 367.

The Trust proposes to utilise the InvIT Loan to subscribe to the Project SPV NCDs, which in turn will be utilised towards pre-payment or repayment of debt, including any accrued interest, availed from banks and financial institutions.

Proposed post-listing structure

The following structure illustrates the relationship between the Trust, the Trustee, the Sponsor, the Investment Manager, the Project Manager and the Unitholders as on the Listing Date:


Sponsor
(Shrem Infra Structure Private Limited)
Other Unitholders
Investment Manager
(Shrem Financial Private Limited)
Investment management services
Shrem InvIT
Trust management services
Trustee
(Axis Trustee Services Limited)
Loans to InvIT
Lenders / NCD Investors
Project Manager
(Shrem Road Projects Private Limited)
InvIT loans to all Project SPVs
100% stake
Dilip Buildcon Limited
(O&M Contractor)
SRPL
SIPL
STPL
Toll (State Concession) -100% holding
1. Suryavanshi Infrastructure Private Limited (MPRDC)
Annuity (State Concession)
1. DBL Bankhlafata– Dogawa Tollways Limited (MPRDC) – 100%
2. DBL Jaora– Sailana Tollways Limited (MPRDC) 100%
3. DBL Nadiad Modasa Tollways Limited (GRDCL 74%#
4. DBL Mundargi Harapanahalli Tollways Limited (KRDCL 74% #
5. DBL Hassan Periyapatna Tollways Limited (KRDCL 74% #
6. DBL Hirekerur Ranibennur Tollways Limited (KRDCL 74% #
Toll + Annuity (State Concession) – 100% holding
1. DBL Ashoknagar– Vidisha Tollways Limited (MPRDC)
2. DBL Silwani –Sultanganj Tollways Limited (MPRDC)
3. DBL Sitamau–Suwasara Tollways Limited (MPRDC)
4. DBL Hata– Dargawon Tollways Limited (MPRDC)
5. DBL Patan Rehli Tollways Limited (MPRDC)
6. DBL Mundi– Sanawad Tollways Limited (MPRDC)
7. DBL Uchera– Nagod Tollways Limited (MPRDC)
8. DBL Betul– Sarni Tollways Limited (MPRDC)
9. DBL Tikamgarh– Nowgaon Tollways Limited (MPRDC)
10. DBL Sardarpur Badnawar Tollways Limited (MPRDC)
NHAI & MoRTH– HAM –100% holding
1. DBL Lucknow Sultanpur Highways Limited (NHAI)
2. DBL Kalmath Zaraph Highways Limited (MoRTH)
3. DBL Mahagaon Yavatmal Highways Private Limited (NHAI)
4. DBL Yavatmal Wardha Highways Private Limited (NHAI)
5. DBL Wardha Butibori Highways Private Limited (NHAI)
6. DBL Tuljapur Ausa Highways Limited (NHAI)
NHAI – Toll – 100% Holding
1. JalpaDeviTollwaysLimited
#Shareholding under these entities shall be restricted to 74% in line with concession agreement

SUMMARY COMBINED FINANCIAL STATEMENTS

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SHREM INVIT
COMBINED BALANCE SHEET

(Rs.in Million)

SI	Particulars	Notes	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
	ASSETS					
(1)	**Non-current assets**					
(a)	Property, plant and equipment	3	5.61	6.05	4.98	5.87
(b)	Capital work in progress	4	-	2,747.52	20,966.25	8,468.27
(c)	Investment Property		-	-	-	-
(d)	Other Intangible assets	5	8,951.01	9,371.15	9,930.31	2,635.07
(e)	Intangible assets under development	6	-	-	-	7,743.63
(f)	Financial assets					
(i)	Investments		-	-	-	-
(ii)	Loans	7	0.05	0.05	-	-
(iii)	Trade receivables	8	33,885.67	31,269.14	14,628.59	15,431.86
(iv)	Others	9	1,170.12	1,057.50	-	-
(g)	Deferred tax assets (Net)		-	-	-	-
(h)	Other non-current asset	10	1.70	1.86	1.68	2,262.52
	Total non-current assets		**44,014.16**	**44,453.27**	**45,531.81**	**36,547.22**
(2)	**Current assets**					
(a)	Inventories					
(b)	Financial assets					
(i)	Investments	11	-	-	541.02	-
(ii)	Trade receivables	8	4,553.40	4,902.11	4,347.47	2,790.69
(iii)	Cash and cash equivalent	12	4,896.65	3,801.25	2,290.97	1,557.58
(iv)	Bank balance other than (iii) above			-	-	-
(v)	Loans	7	-	-	-	-
(vi)	Others	9	849.40	789.00	10.37	9.71
(c)	Current Tax Assets (Net)	13	1,026.65	517.05	180.86	54.25
(d)	Other current assets	10	3,600.83	3,874.74	5,799.87	4,112.53
	Total current assets		**14,926.93**	**13,884.15**	**13,170.56**	**8,524.76**
	TOTAL ASSETS		**58,941.09**	**58,337.42**	**58,702.37**	**45,071.98**
	EQUITY AND LIABILITIES					
	Equity					
(a)	Equity share capital	14	210.28	210.28	223.60	265.41
(b)	Other equity	15	1,193.39	(1,717.73)	(2,355.06)	351.32
	Total Equity		**1,403.67**	**(1,507.45)**	**(2,131.46)**	**616.73**
	Liabilities					
(1)	**Non-current liabilities**					
(a)	Financial liabilities					
(i)	Borrowings	16	37,454.05	41,135.12	40,055.31	26,405.55
(ii)	Trade payable	17				
	total outstanding dues of micro and small enterprises		-	-	-	-
	total outstanding dues of creditors other than micro and small enterprises		-	-	150.78	0.71
(iii)	Other financial liabilities	18	943.90	1,057.50	1,008.90	1,166.59
(b)	Provisions	19	1,421.98	947.66	510.79	52.59
(c)	Deferred tax liabilities (net)	20	47.24	44.40	59.48	828.35
(d)	Other non-current liabilities	21	-	-	-	0.02
	Total non-current liabilities		**39,867.17**	**43,184.68**	**41,785.26**	**28,453.81**
(2)	**Current liabilities**					
(a)	Financial liabilities					
(i)	Borrowings	16	10,949.37	10,739.70	10,815.74	6,940.73
(ii)	Trade payable	17				
	total outstanding dues of micro and small enterprises		-	-	-	-
	total outstanding dues of creditors other than micro and small enterprises		2,490.90	3,296.10	4,898.01	3,525.50
(iii)	Other financial liabilities	18	3,823.97	2,350.32	1,704.64	1,070.47
(b)	Other current liabilities	21	50.81	111.28	1,629.06	4,464.58
(c)	Provisions	19	355.20	162.79	1.11	0.16
(d)	Current tax liability (net)		-	-	-	-
	Total current liabilities		**17,670.25**	**16,660.19**	**19,048.56**	**16,001.44**
	TOTAL LIABILITIES		**57,537.42**	**59,844.87**	**60,833.82**	**44,455.25**
	TOTAL EQUITY AND IABILITIES		**58,941.09**	**58,337.42**	**58,702.37**	**45,071.98**

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF PROFIT AND LOSS

(Rs.in Million)

SI	Particulars	Notes	For the period ended 31st December, 2020	For the year ended 31st March, 2020	For the year ended 31st March, 2019	For the year ended 31st March, 2018
(I)	Revenue from Operations	22	8,904.94	12,860.54	38,333.21	25,892.08
(II)	Other income	23	166.93	111.54	354.70	39.85
(III)	**Total Income (I+II)**		**9,071.87**	**12,972.08**	**38,687.91**	**25,931.93**
(IV)	Expenses					
	Cost of construction	24	1,763.57	5,864.99	35,039.87	23,619.29
	Employee benefits expense	25	8.72	11.20	5.46	33.76
	Finance costs	26	3,472.10	4,432.60	3,784.78	1,975.55
	Depreciation and amortization expense	27	420.73	560.20	490.58	240.15
	Other expenses	28	589.08	680.18	699.42	415.62
	Total expenses (IV)		**6,254.20**	**11,549.17**	**40,020.11**	**26,284.37**
(V)	Profit/(loss)before exceptional items and tax (III-IV)		2,817.67	1,422.90	(1,332.21)	(352.44)
(VI)	Exceptional items					
(VII)	**Profit / (loss) before tax (V) - (VI)**		**2,817.67**	**1,422.90**	**(1,332.21)**	**(352.44)**
(VIII)	**Tax expenses**					
	(1) Current tax		54.96	168.88	0.10	11.37
	(2) Deferred tax - Charged/(Credit)	20	2.84	(15.08)	(768.87)	752.64
	(3) MAT Credit			0.24	(15.25)	-
	(4) Income Tax for earlier years		(151.25)	-	-	-
(IX)	**Profit (Loss) for the period/year from continuing operations (VII - VIII)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(X)	Profit/(loss) from discontinued operations		-	-	-	-
(XI)	Tax expenses of discontinued operations		-	-	-	-
(XIII)	**Profit/(loss) for the period/year VI= (IX+XII)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(X)	**Other Comprehensive Income**					
	A (i) Items that will not be reclassified to profit or loss		-	-	-	-
	(ii) Income tax relating to items that will not be reclassified to profit or loss		-	-	-	-
	B (i) Items that will be reclassified to profit or loss		-	-	-	-
	(ii) Income tax relating to items that will be reclassified to profit or loss		-	-	-	-
(XI)	**Total Comprehensive Income for the period/year (Comprising Profit (Loss) and Other Comprehensive Income for the period/year) (IX-X)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(XII)	**Earnings per unit (for continuing operations)**	30	Refer Note 41			
	(1) Basic					
	(2) Diluted					

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF CHANGES IN EQUITY

A. Equity share capital **(Rs.in Million)**

Particulars	Note	Amount (Rs.)
Balance as on 31 March 2017		**136.22**
Balance as on 1 April 2017	14	136.22
Changes in equity share capital during the year		129.18
Balance as on 31 March 2018		**265.41**
Balance as on 1 April 2018	14	265.41
Changes in equity share capital during the year		(41.81)
Balance as on 31 March 2019		**223.60**
Balance as on 1 April 2019	14	223.60
Changes in equity share capital during the year		(13.31)
Balance as on 31 March 2020		**210.28**
Balance as on 1 April 2020	14	210.28
Changes in equity share capital during the year		-
Balance as on 31 December 2020		**210.28**

B. Other equity **(Rs.in Million)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 31 March 2017	1,725.42	-	(1,339.37)	386.05
Total comprehensive income for the period 31st March 2018				
Profit or (loss)	-	-	(1,116.44)	(1,116.44)
Excess Income Tax Provision Written off	-	-	2.69	2.69
Issue of Shares	1,079.02	-	-	1,079.02
Balance as on 31 March 2018	**2,804.44**	**-**	**(2,453.12)**	**351.32**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption	Retained	
Balance as on 31 March 2018	2,804.44	-	(2,453.12)	351.32
Profit or (loss) for the year	-	-	(548.19)	(548.19)
Issue of Shares/adjustement	(2,158.19)	-	-	(2,158.19)
Balance as on 31 March 2019	**646.25**	**-**	**(3,001.31)**	**(2,355.06)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 31 March 2019	646.25	-	(3,001.31)	(2,355.06)
Profit or (loss) for the year	-	-	1,268.86	1,268.86
Transfer to Loan Redemption Reserve	-	445.77	(445.77)	-
Securities Premium	143.00	-	-	143.00
Issue of Shares/adjustement	(774.53)	-	-	(774.53)
Balance as on 31 March 2020	**14.72**	**445.77**	**(2,178.21)**	**(1,717.73)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 1st April 2020	14.72	445.77	(2,178.21)	(1,717.73)
Profit or (loss) for the period	-	-	2,911.12	2,911.12
Transfer to Loan Redemption Reserve	-	1,346.40	(1,346.40)	-
Balance as on 31 December 2020	**14.72**	**1,792.17**	**(613.49)**	**1,193.39**

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF CASH FLOW

Rs. in Millions

Sr No	Particulars	For the period ended 31st Dec 2020	For the period ended 31st March 2020	For the period ended 31st March 2019	For the period ended 31st March 2018
A	**CASH FLOW FROM OPERATING ACTIVITIES:**				
	Net Profit /(Loss) before tax as per Profit & Loss Account	2,817.67	1,422.90	(1,332.21)	(352.44)
		-	-	-	-
	Adjusted for:	-	-	-	-
	Depreciation & Amortisation	420.73	560.20	490.58	240.15
	Finance Cost	3,472.10	4,432.60	3,784.78	1,975.55
	Interest Income	(133.41)	(101.77)	(65.20)	(18.82)
	Operating Profit before Working Capital Changes	6,577.09	6,313.93	2,877.95	1,844.44
	Adjusted for:				
	(Increase)/Decrease in Current and Non- Current Assets	(2,166.75)	(17,106.53)	(180.65)	(9,219.10)
	Increase/(Decrease) in Current and Non Current Liabilities	1,161.10	(1,977.54)	(377.35)	7,176.61
	Net cash from Operating Activities before Income Tax	5,571.44	(12,770.14)	2,319.95	(198.05)
	Income tax paid / (Refund)	413.31	505.31	111.46	19.42
	Excess Provision write off	-	-	-	2.69
	Net Cash from Operating Activities	5,158.13	(13,275.45)	2,208.49	(214.78)
B	**CASH FLOW FROM INVESTING ACTIVITIES:**				
	(Purchase) / Sale of Property, Plant & Equipment - Net	2,747.37	18,216.62	(12,154.44)	(1,718.14)
	Intangible Assets under development	-	-	-	(4,623.45)
	Capitalization of Construction Cost	-	-	-	(5,013.03)
	Capitalization in Intangible Assets		-	(384.84)	-
	Changes in Financial assets	-	-	-	-
	On Account of Service Concession Arrangement	-	-	-	(564.08)
	(Purchase) / Sale of Investments - Net	-	541.02	(541.02)	800.25
	Interest Income	133.41	101.77	65.20	18.82
	Net cash used in Investing Activities	2,880.78	18,859.41	(13,015.10)	(11,099.63)
C	**CASH FLOW FROM FINANCING ACTIVITIES:**				
	Proceed from issue of / (Reduction of) Share Capital including Share Premium - Net	-	(644.85)	(2,200.00)	(1,718.66)
	Procceds from / (Repayment) of Long Term Borrowings - Net	(3,681.07)	1,079.81	13,649.77	11,972.04
	Procceds from / (Repayment) of Short Term Borrowings - Net	209.67	(76.04)	3,875.01	4,101.17
	Finance Cost	(3,472.10)	(4,432.60)	(3,784.78)	(1,975.56)
	Net Cash from / (used in) Financing Activities	(6,943.50)	(4,073.68)	11,540.00	12,378.99
	Net Increase / (Decrease) in Cash and Cash Equivalents	1,095.40	1,510.28	733.38	1,064.59
	Opening Balance of Cash and Cash Equivalents	3,801.25	2,290.97	1,557.58	492.98
	Closing Balance of Cash and Cash Equivalents	4,896.65	3,801.25	2,290.97	1,557.58

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SUMMARY FINANCIAL INFORMATION OF THE SPONSOR

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SHREM INFRA STRUCTURE PRIVATE LIMITED

CIN: U45100MH2014PTC254839

CONSOLIDATED BALANCE SHEET

(Rs in Million)

	Particulars	As at 31 March 2020	As at 31 March 2019	As at 31 March 2018
	ASSETS			
(1)	**Non-current assets**			
(a)	Property, plant and equipment	4.14	4.94	5.79
(b)	Capital work-in-progress	-	-	-
(c)	Investment Property	-	-	-
(b)	Goodwill	1,174.98	1,026.86	1,111.83
(e)	Other intangible assets	828.04	575.73	1,181.20
(f)	Intangible assets under development	-	-	-
(g)	Biological Asset other than bearer plants	-	-	-
(h)	Financial assets	-	-	-
	(i) Investments	1,578.99	366.93	0.25
	(ii) Trade receivables	6,900.10	6,736.50	8,984.85
	(iii) Loans	3,709.08	-	-
	(iv) Others	-	-	-
(i)	Deferred tax assets	-	21.49	3.52
(j)	Other non-current asset	2,678.86	4,214.31	106.72
	Total non-current assets	**16,874.19**	**12,946.76**	**11,394.15**
(2)	**Current assets**			
(a)	Inventories	-	-	-
(b)	Financial assets	-	-	-
	(i) Investments	-	-	-
	(ii) Trade receivables	874.19	918.55	817.35
	(iii) Cash and cash equivalent	1,061.49	222.63	258.52
	(iv) Bank balances other than (iii) above	-	-	-
	(v) Loans	297.33	-	-
	(vi) Others	2,483.26	4,630.21	6,545.65
(c)	Current Tax Assets (Net)	15.63	-	-
(d)	Other current assets	152.16	122.13	149.85
	Total current assets	**4,884.06**	**5,893.51**	**7,771.36**
	TOTAL ASSETS	**21,758.25**	**18,840.27**	**19,165.51**
	EQUITY AND LIABILITIES			
	Equity			
(a)	Equity share capital	766.50	766.50	766.50
(b)	Other equity	1,169.57	860.60	70.09
	Equity Attributable to Owners of Shrem Infra Structure Private Limited	1,936.07	1,627.10	836.59
(c)	Non-controlling Interest	255.79	370.72	471.07
	Total Equity	**2,191.86**	**1,997.82**	**1,307.66**
	Liabilities			
(1)	**Non-current liabilities**			
(a)	Financial liabilities			
	(i) Borrowings	7,234.37	6,760.72	9,190.31
	(ii) Trade payable	-	-	-
	(iii) Other financial liabilities	4,102.80	3,980.00	1,166.59
(b)	Provisions	530.46	235.49	52.59
(c)	Deferred tax liabilities (net)	3.41	-	722.90
(d)	Other non-current liabilities	-	-	0.02
	Total non-current liabilities	**11,871.04**	**10,976.20**	**11,132.41**
(2)	**Current liabilities**			
(a)	Financial liabilities			
	Borrowings	4,102.95	4,284.24	5,793.05
	Trade payable	149.15	245.52	124.04
	Other financial liabilities	3,199.66	1,248.70	736.58
(b)	Other current liabilities	237.42	52.88	13.62
(c)	Provisions	0.11	0.14	0.14
(d)	Current tax liabilities (Net)	6.05	34.77	57.97
	Total current liabilities	**7,695.34**	**5,866.25**	**6,725.40**
	TOTAL LIABILITIES	**19,566.38**	**16,842.46**	**17,857.81**
	TOTAL EQUITY AND LIABILITIES	**21,758.25**	**18,840.27**	**19,165.46**

SHREM INFRA STRUCTURE PRIVATE LIMITED

CIN: U45100MH2014PTC254839

CONSOLIDATED STATEMENT OF PROFIT & LOSS

(Rs in Million)

	Particulars	For the year ended 31st March, 2020	For the year ended 31st March, 2019	For the year ended 31st March, 2018
(I)	Revenue from Operations	1,696.42	1,687.68	1,775.41
(II)	Other income	33.02	878.88	115.52
(III)	**Total Income (I+II)**	**1,729.44**	**2,566.56**	**1,890.93**
(IV)	Expenses			
	Cost of construction	161.68	471.51	174.72
	Employee benefits expense	11.68	5.85	18.25
	Finance costs	855.88	872.99	947.54
	Depreciation and amortization expense	100.68	72.15	116.14
	Other expenses	365.02	749.98	141.57
	Total expenses (IV)	**1,494.94**	**2,172.46**	**1,398.22**
(V)	Profit/(loss) before exceptional items and tax (III-IV)	234.51	394.10	492.71
(VI)	Extraordinary items	-	-	1.08
(VII)	**Profit / (loss) before tax (V) - (VI)**	234.51	394.10	491.63
(VIII)	**Tax expenses**	-	-	-
	(1) Current tax	9.85	43.99	30.19
	(2) Income Tax for previous years	0.30	-	-
	(3) Deferred tax	8.36	-701.44	618.10
	(4) MAT credit receivable	-	-12.27	-15.28
(IX)	**Profit (Loss) for the year from continuing operations (VII - VIII)**	**215.99**	**1,063.82**	**-141.39**
(X)	Less: Share of Profit / (loss) of Pre-acquisition Period	31.92	125.19	-171.46
	Add: Share of Profit/(Loss) of Associates	269.41	-48.77	-
(XI)	**Net Profit (Loss) for the period (IX - X)**	**453.47**	**889.86**	**30.07**
(XII)	Profit / (loss) for the period attributable to:	-	-	-
	(a) Owners of the Parent	362.57	766.96	78.79
	(b) Non-controlling Interest	90.91	122.91	-48.72
(XIII)	**Other Comprehensive Income**			
	A (i) Items that will not be reclassified to profit or loss	-	-	-
	(ii) Income tax relating to items that will not be reclassified to profit or loss	-	-	-
	B (i) Items that will be reclassified to profit or loss	-	-	-
	(ii) Income tax relating to items that will be reclassified to profit or loss	-	-	-
(XIV)	**Total Comprehensive Income for the year (Comprising Profit (Loss) and Other Comprehensive Income for the year) (IX-X)**	**362.57**	**766.96**	**78.79**
(XV)	**Earnings per equity share (for continuing operations)**	-	-	-
	(1) Basic	4.73	10.01	6.22
	(2) Diluted	4.73	10.01	6.22

SHREM INFRA STRUCTURE PRIVATE LIMITED
CIN: U45100MH2014PTC254839
CONSOLIDATED CASH FLOW STATEMENT

(Rs in Millions)

	Particulars	For the year ended 31st March, 2020	For the year ended 31st March, 2019	For the year ended 31st March, 2018
A	**CASH FLOW FROM OPERATING ACTIVITIES:**			
	Net Profit before tax as per Profit & Loss Account	**362.57**	**766.96**	**78.79**
	Adjusted for:			
	Tax Expenses	18.21	-669.72	-
	Depreciation & Amortisation	100.68	72.15	116.14
	Finance Cost	855.88	872.99	947.54
	Operating Profit before Working Capital Changes	**1,337.34**	**1,042.37**	**1,142.47**
	Movements in working capital:			
	(Increase)/Decrease in Current and Non- Current Assets	-621.39	4,090.31	-16,604.41
	Increase/(Decrease) in Current and Non-Current Liabilities	2,288.34	3,669.16	2,151.55
	Net cash from Operating Activities before Income Tax	3,004.29	8,801.83	-13,310.39
	Income tax paid	-37.66	4,202.00	-
	Net Cash from Operating Activities	**2,966.63**	**4,599.84**	**-13,310.39**
B	**CASH FLOW FROM INVESTING ACTIVITIES:**			
	Purchase of Tangible and Intangible Assets	-352.19	534.18	-1,303.13
	Investment in Equity	-1,212.06	-366.69	-0.25
	Net cash used in Investing Activities	**-1,564.25**	**167.50**	**-1,303.38**
C	**CASH FLOW FROM FINANCING ACTIVITIES:**			
	Proceed from issue of Share Capital including Share Premium	-	-	766.50
	Proceeds/(Repayment) of Borrowings	292.37	-3,938.40	-
	Proceeds from/(Repayment) of Long Term Borrowings	-	-	9,190.31
	Proceeds from/(Repayment) of Short Term Borrowings	-	-	5,793.05
	Finance Cost	-855.88	-872.99	-947.54
	Share of Non-controlling Interest/Acquisition of Subsidiaries	-	8.17	69.97
	Net Cash from / (used in) Financing Activities	**-563.51**	**-4,803.22**	**14,872.28**
	Net Increase / (Decrease) in Cash and Cash Equivalents	**838.87**	**-35.89**	**258.52**
	Cash and Cash Equivalents at the beginning of the year	**222.63**	**258.52**	**-**
	Closing Balance of Cash and Cash Equivalents	**1,061.49**	**222.63**	**258.52**

SUMMARY FINANCIAL INFORMATION OF THE INVESTMENT MANAGER

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SHREM FINANCIAL PRIVATE LIMITED
CIN: U67190MH2010PTC206680
Consolidated Balance Sheet

(Rs in Millions)

	Particulars	Note No.	As at 31 March, 2020	As at 31 March, 2019	As at 31 March, 2018
A	**EQUITY AND LIABILITIES**				
1	**Shareholders' funds**				
	(a) Share capital	3	100	100	100
	(b) Reserves and surplus	4	3	15	17
			103	115	117
			-	-	-
2	**Minority Interest**		19	15	15
			-	-	-
3	**Non-current liabilities**		-	-	-
	(a) Long-term borrowings	5	3,946	3,841	700
	(b) Deferred tax liabilities (net)	11	-	0	-
	(c) Other long-term liabilities		-	-	-
	(d) Long-term provisions		-	-	-
			3,946	3,841	700
4	**Current liabilities**				
	(a) Short-term borrowings		-	-	697
	(b) Trade payables	6	141	122	11
	(c) Other current liabilities	7	37	34	11
	(d) Short-term provisions	8	3	2	0
			180	157	720
			-	-	-
			4,249	**4,128**	**1,551**
B	**ASSETS**				
1	**Non-current assets**				
	(a) Fixed assets				
	(i) Tangible Assets	9	8	2	1
	(ii) Intangible Assets	9	0	-	-
	(iii) Capital Work-in-Progress	9	1,966	1,027	147
	(b) Non-current investments	10	-	-	-
	(c) Deferred tax assets (net)	11	1	-	0.02
	(d) Long-term loans and advances	12	1,267	1,267	1,267
	(b) Other non-current assets	13	-	0.00	0.01
			3,241	2,296	1,415
2	**Current assets**				
	(a) Current investments		-	-	-
	(b) Inventories		-	-	-
	(c) Trade Receivables		-	-	-
	(d) Cash and cash equivalents	14	9	70	5
	(e) Short-term loans and advances	15	997	1,590	91
	(f) Other current assets	16	2	172	40
			1,008	1,832	136
			-	-	-
			4,249	**4,128**	**1,551**

SHREM FINANCIAL PRIVATE LIMITED

CIN: U67190MH2010PTC206680

Consolidated Profit & Loss Statement

(Rs in Millions)

	Particulars	Note No.	For the period ended 31 March, 2020	For the period ended 31 March, 2019	For the period ended 31 March, 2018
A	**CONTINUING OPERATIONS**				
1	Revenue from operations	17	-	0.29	-
2	Other income	18	0.93	6.21	1.93
3	**Total revenue**		0.93	6.49	1.93
4	**Expenses**				
	(a) Employee benefit expenses	19	4.39	3.98	3.96
	(b) Finance cost	20	-	0.05	7.76
	(c) Depreciation & Amorization Expenses	9	0.95	0.33	0.06
	(d) Other expenses	21	3.35	3.91	1.39
	Total expenses		8.70	8.27	13.18
5	**Profit / (Loss) before exceptional and extraordinary items and tax**		**-7.77**	**-1.78**	**-11.25**
6	Exceptional items		-	-	-
7	**Profit / (Loss) before extraordinary items and tax**		**-7.77**	**-1.78**	**-11.25**
8	Extraordinary items		-	-	1.08
9	**Profit / (Loss) before tax**		**-7.77**	**-1.78**	**-12.33**
10	**Tax expense:**				
	(a) Current tax expense for current year		-	-	-
	(b) (Less) MAT credit (where applicable)		-	-	-
	(c) Current tax expense relating to prior years		-	-	-
	Net current tax expense		-	-	-
	Deferred tax	11	0.74	-0.21	0.02
			0.74	-0.21	0.02
11	**Profit / (Loss) after tax**		**-7.02**	**-1.99**	**-12.30**
12	**Minority Interest in Profit/(Loss)**		-0.22	-0.19	-0.17
13	**Share in Pre-Acquisition Profit**		**-**	**-**	**-0.25**
	Share of Profit/(Loss) of Associates		-	-	-0.25
14	**Profit / (Loss) from continuing operations**		-6.81	-1.80	-12.13
B	**DISCONTINUING OPERATIONS**		-	-	-
15	**Profit / (Loss) from discontinuing operations**		-	-	-
16	**Profit / (Loss) for the year**		**-6.81**	**-1.80**	**-12.13**

SHREM FINANCIAL PRIVATE LIMITED
CIN: U67190MH2010PTC206680
Consolidated Cash Flow Statement

(Rs. in Millions)

Particular	For the year ended 31st March 2020	For the year ended 31st March 2019	For the year ended 31st March 2018
A. CASH FLOW FROM OPERATING ACTIVITIES			
Net profit before tax & extraordinary items	-7.77	-1.78	-12.33
adjusted for:			
Depreciation	0.95	0.33	0.06
Interest Received	0.93	0.31	-
Interest & Financial Expenses	-	0.05	7.77
OPERATING PROFIT BEFORE WORKING CAPITAL CHANGES	**-5.89**	**-1.09**	**-4.49**
Changes in Working Capital :			
Loans & Advances	592.90	-1,498.75	35.72
Other current assets	169.79	-132.05	-37.40
Prepaid Expenses	0.00	0.00	0.00
Trade Payables	19.20	110.96	10.87
Short-term Borrowing	-	-	639.99
Other current liabilities	3.09	22.18	-293.93
Short-term provisions	1.12	1.22	0.47
CASH GENERATED FROM OPERATIONS	**780.22**	**-1,497.52**	**351.24**
Taxes (Paid) / Refund	-	-	-
CASH FLOW BEFORE EXTRA ORDINARY ITEMS	**780.22**	**-1,497.52**	**351.24**
Prior period adjustments	-	-	-
NET CASH FROM OPERATING ACTIVITIES(A)	**780.22**	**-1,497.52**	**351.24**
B. CASH FLOW FROM INVESTING ACTIVITIES			
Purchase/Sale of Fixed assets	-945.27	-881.57	-148.34
Purchase/Sale of Investments	0.25	-	624.85
Interest Received	-0.93	-0.31	-
NET CASH USED IN INVESTING ACTIVITIES	**-945.94**	**-881.88**	**476.51**
C. CASH FLOW FROM FINANCING ACTIVITIES			
Issue of Share Capital	-	-	99.90
Interest & Financial Expenses	-	-0.05	-7.77
Proceeds from Borrowings	104.83	2,443.91	351.85
Other Non-Current Assets	-	-	-0.01
Long Term Loan & Advances	-	-	-1,266.60
NET CASH USED IN FINANCIAL ACTIVITIES	**104.83**	**2,443.86**	**-822.62**
Net increase/ (decrease) in Cash and Cash Equivalents	-60.90	64.47	5.13
Cash and Cash Equivalents as on 01.04.2019	69.77	5.30	0.17
Cash and Cash Equivalents as on 31.03.2020	8.87	69.77	5.30

SUMMARY OF INDUSTRY

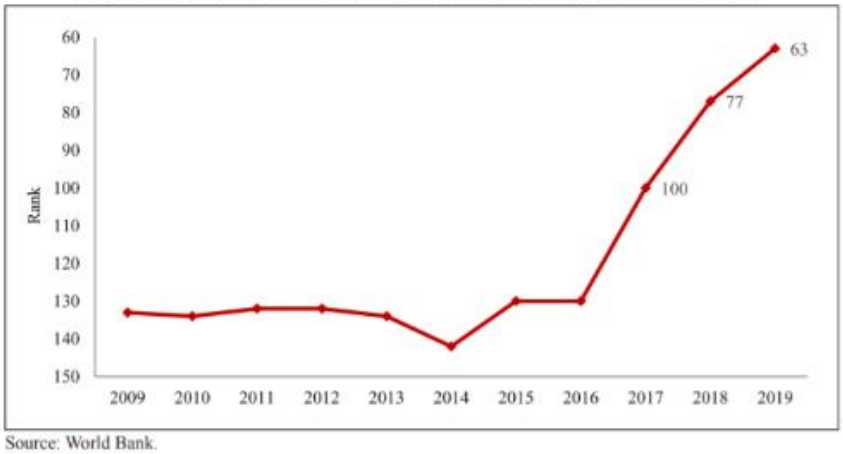
Overview of the Indian Economy

According to the Economic Survey 2020-2021, in 2018, 2019 and 2020 (advance estimates), India's gross domestic product ("**GDP**") based on constant prices was estimated at ₹ 1,39,81,426 crores (revised estimates), ₹ 1,45,65,951 crores (provisional estimates) and ₹ 1,34,39,662 crores (advance estimates) respectively. *(Source: Economic Survey 2020-2021 Statistical Appendix Volume 2*).

CPI inflation was 7.30% in September and rose further to 7.60% in October 2020. CPI inflation is projected at 6.80% for Q3: Fiscal 2021, 5.20% for Q4: Fiscal 2021 and 5.20% to 5.00% in H1: 2021-22 and 4.3% in Q3: Fiscal 2022 (Source: *Reserve Bank of India, Minutes of the Monetary Policy Committee Meeting December 2 to 4, 2020 and Minutes of the Monetary Policy Committee Meeting February 3 to 5, 2021*).

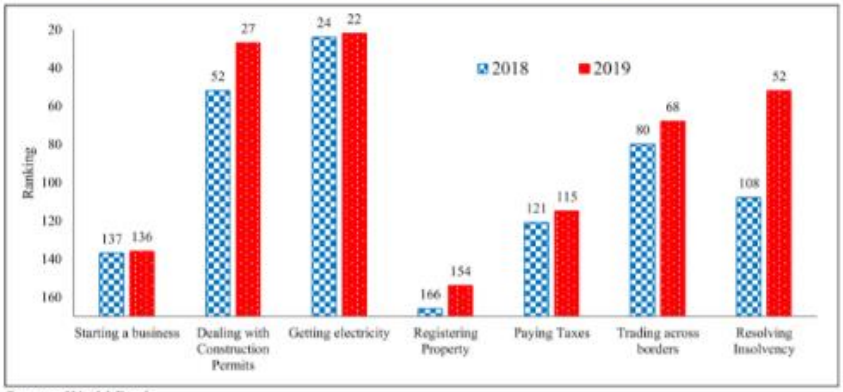
The Government of India has taken several industry specific reform initiatives since 2014 that have significantly improved the overall business environment. In order to improve ease of doing business, the emphasis has been on simplification and rationalization of the existing rules and introduction of information technology to make governance more efficient and effective. The improvement in the business environment as a result of these reforms is reflected in India's considerably improved ranking to 63rd position among the 190 countries in the World Bank's Doing Business 2020 Report (Source: *Economic Survey of India 2019 - 2020, Volume II ("**ESI II**")*).

Figure 5: India's ranking in World Bank Ease of Doing Business Reports



Source: World Bank.

Figure 6: India's Progress in Ease of Doing Business Reports Rankings



Source: World Bank.

Overview of the Indian Infrastructure Sector

It is well-accepted that investment in infrastructure is necessary for growth. Power shortages lead to dependence on expensive captive power, which in turn impels high costs and lack of competitiveness for the economy. Inadequate transport infrastructure leads to bottlenecks both in the supply of raw materials as well as movement of finished goods to the marketplace. The price that farmers get for their produce is depressed if there is no connectivity through good quality rural roads, which in turn keeps rural incomes depressed negating the fruits of high overall growth performance. For all these reasons, provision of adequate infrastructure is essential for growth and for making growth inclusive. India recently launched the National Infrastructure Pipeline for the period FY 2020-2025 (Source: *ESI II*).

Investment in Infrastructure is necessary for growth. To achieve the GDP of $5 trillion by 2024-25, India needs to spend about $1.4 trillion (₹ 100 lakh crore) over these years on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint to the growth of the Indian economy. To implement an infrastructure program of this scale, it is important that projects are adequately prepared and launched (Source: *ESI II*).

To draw up the National Infrastructure Pipeline ("**NIP**") for each of the years from FY 2019-20 to FY 2024-25, an inter-ministerial Task Force was set up in September 2019 under the chairmanship of Secretary (Department of Economic Affairs), Ministry of Finance. NIP is expected to enable well-prepared infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP also intends to facilitate supply side interventions in infrastructure development to boost short-term as well as the potential GDP growth. Improved infrastructure capacities will also drive competitiveness of the Indian economy (Source: *ESI II*).

In Fiscal 2021, the Government of India approved the continuation of the revamped Infrastructure Viability Gap Funding (VGF) scheme till 2024-25. Revamping of the proposed VGF scheme will attract more PPP projects and facilitate the private investment in the social sectors (Health, Education, Waste Water, Solid Waste Management, Water Supply etc.). The revamped Scheme is mainly related to introduction of the two sub-schemes for mainstreaming private participation in social infrastructure. (Source: *Economic Survey of India 2020 - 2021, Volume II)*

Overview of Road Sector in India

Introduction

Road transport is the dominant mode of transportation in terms of its contribution to Gross Value Added ("**GVA**") and traffic share. The share of transport sector in the GVA for 2017-18 was about 4.77 per cent of which the share of road transport is the largest at 3.06 per cent, followed by the share of the Railways (0.75 per cent), air transport (0.15 per cent) and water transport (0.06 per cent). Similarly, as per the National Transport Development Policy Committee Report, as of 2011-12, road transport is estimated to handle 69 per cent and 90 per cent of the countrywide freight and passenger traffic, respectively. The Ministry of Road Transport and Highways ("**MoRTH**") is mandated with the development and maintenance of road networks especially the national highways as well as the implementation of the Motor Vehicle Act under which it formulates broad policies relating to road transport (Source: *ESI II*).

During the decade ending in Fiscal 2019, the national highways recorded a CAGR of 7.25 per cent followed by rural roads (6.25 per cent) and urban roads (4.27 per cent). The pace at which roads have been constructed has grown significantly from 12 kms per day in 2014-15 to 30 kms per day in Fiscal 2019 before it moderated in Fiscal 2020. The decline in the construction of road per day in Fiscal 2021 is mostly on account of the COVID-19 shock. With the unlocking of the economy, construction of roads is expected to return back to the high pace attained before COVID-19. (Source: *Economic Survey of India 2020 - 2021, Volume II)*

Road Network

The capacity of national highways in term of handling traffic (passenger and goods) needs to keep pace with economic growth. India has the second largest road network in the world of about 58.98 lakh km. This comprises national highways, expressways, state highways, major district roads, other district roads and village roads as under:

Particulars	Capacity (in km)
National Highways	132,500
State Highways	156,694
Other Roads	5,608,477
Total	**5,897,671**

(Source: *MoRTH Annual Report*)

The Government of India has launched major initiatives to upgrade and strengthen national highways through various phases of NHDP. The status of various programmes up to December 31, 2019 is as under:

Phases	Total Length in km	Length completed up to March 31, 2019	Length completed during April 1, 2019 to December 31, 2019	Length Completed up to December 31, 2019
Bharatmala Pariyojana (I+ II +III +IV) GQ, Port connection and Upgradation with 2/4/6 -laning / Development of	46,278	33,808	3,148	36,956

Phases	Total Length in km	Length completed up to March 31, 2019	Length completed during April 1, 2019 to December 31, 2019	Length Completed up to December 31, 2019
North South-East West Corridor				
V 6-laning of GQ and High density corridor	6,500	3,464	329	3,593
VI Expressways	1,000	176	21	197
VII Ring Roads, Bypasses and flyovers and other structures	700 km of ring roads, bypass + flyovers etc.	115	9	124
Other Schemes				
SARDP-NE (Phase A + Arunachal Pradesh)	6,418	3,029	112	3,141
LWE (including Vijaywada Ranchi Route)	6,014	5,479	65	5,344
EAP (WB+JICA+ADB)	1,985	1,018	63	1,081

(Source: *MoRTH Annual Report*)

Key Organisations governing the National Highways

1. *Ministry of Road Transport and Highways*

MoRTH is the apex organisation under the Government of India entrusted with the task of formulating and administering, in consultation with other central ministries and departments, State Governments, Union Territory administrations, organisations and individuals, policies for road transport, national highways and transport research with a view to increasing the mobility and efficiency of the road transport system in the country. MoRTH has two wings: roads wing and transport wing (Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

The road wing deals with development and maintenance of national highways in the country. Its main responsibilities are as follows:

- planning, development and maintenance of National Highways in the country;
- extending technical and financial support to State Governments for the development of state roads and the roads of inter-state connectivity and economic importance;
- evolving standard specifications for roads and bridges in the country; and
- serving as a repository of technical knowledge on roads and bridges.

(Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

The transport wing deals with matter relating to road transport. Its main responsibilities are as follows:

- motor vehicles legislation;
- administration of the Motor Vehicles Act, 1988.
- taxation of motor vehicles;
- compulsory insurance of motor vehicles;
- administration of the Road Transport Corporations Act, 1950 and promotion of transport co-operatives in the field of motor transport;
- evolution of road safety standards in the form of a National Policy on Road Safety and by preparing and implementing the Annual Road Safety Plan;
- collecting, compiling and analysing road accident statistics and taking steps for developing a road safety culture in the country by involving the members of public and organising various awareness campaigns; and
- providing grants-in-aid to non-governmental organisations in accordance with the laid down guidelines.

(Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

2. *National Highways Authority of India*

National Highways Authority of India ("**NHAI**") was set up by an act of the Parliament i.e. National Highways Authority of India Act, 1988. It has been entrusted with NHDP, which along with other minor projects, has vested in it 50,329 kms of national highways for development, maintenance and management. NHAI's objective is to ensure that all contract awards and procurements conform to the best industry practices with regard to transparency of process, adoption of bid criteria to ensure healthy competition in award of contracts, implementation of projects conform to best quality requirements and the highway system is maintained to ensure best user comfort and convenience. National highways are the arterial roads of the country for inter-state movement of passengers and goods. They traverse the length and width of the country connecting the national and state capitals, major ports and rail junctions and link up with border roads and foreign highways. The total length of national highways (including expressways) in the country at present is 132,499 kms. While highways and expressways constitute only about 1.7% of the length of all roads, they carry about 40% of the road traffic (Source: *Website of National Highways Authority of India (https://nhai.gov.in/#/about-nhai)*).

Development initiatives in the Roads and Highways Sector

National Highway Development Project

NHAI is mandated to implement NHDP, which is India's largest ever highways project, in a phased manner. The national highways have a total length of approximately 72,000 km to serve as the arterial network of the country. Although national highways constitute only about 2 per cent of the road network, it carries 40 per cent of the total road traffic. Rapid expansion of passenger and freight traffic makes it imperative to improve the road network in the country. Accordingly, Government of India launched major initiatives to upgrade and strengthen national highways through various phases of NHDP.

- ***NHDP Phase I***: CCEA on January 12, 2000 approved NHDP Phase-I - Four laning of 6,359 km at a cost of ₹ 30,300.00 crore.

- ***NHDP Phase II***: CCEA on December 18, 2003 approved NHDP Phase-II: Four laning of 6,702 km at a cost of ₹. 34,339 crore in December 2003. These two phases comprise of Golden Quadrilateral ("**GQ**"), North-South and East-West Corridors ("**NS-EW**"), port connectivity and other projects. The GQ (5,846 km) connects the four major cities of Delhi, Mumbai, Chennai and Kolkata. The NS-EW Corridors (7,300 km) connect Srinagar in the North to Kanyakumari in the South, including a spur from Salem to Kochi and Silchar in the East to Porbandar in the West.

- ***NHDP Phase III***: CCEA on April 12, 2007 approved upgradation of 12,109 km under NHDP Phase III at an estimated cost of ₹ 80,626 crore.

- ***NHDP Phase–IV***: CCEA on June 18, 2008 approved upgradation/strengthening of 20,000 kms of national highways to 2/4 lane with paved shoulders on EPC/ BOT (Toll/Annuity) basis under NHDP Phase–IV.

- ***NHDP Phase-V***: CCEA on October 5, 2006 approved six laning of 6,500 km of national highways comprising 5,700 km of GQ and balance 800 km of other sections under NHDP Phase-V at a cost of Rs. ₹ 41,210 crore.

- ***NHDP Phase-VI***: In November 2006, approved construction of 1,000 km of expressways with full access control on new alignments at a cost of ₹ 16,680 crore under NHDP-Phase-VI.

- ***NHDP Phase-VII***: CCEA in December 2007 approved construction of ring roads, bypasses, grade separators, flyovers, elevated roads and tunnels at a cost of ₹16,680 crore under the NHDP Phase-VII.

Advantages of NHDP

Advantages of having a well-developed network of world class highways are many for a nation like India -poised to surge ahead.

- Savings in vehicle operating costs
- Benefits to trade especially in movement of perishable matter
- Faster, comfortable journeys
- Reduced maintenance costs
- Reduced fuel consumption
- Safer travel
- All round development of areas

Prime Focus of NHDP

NHDP's prime focus is on developing International standard roads with facilities for uninterrupted flow of traffic with:

- Enhanced safety features
- Divided carriageways and service roads
- Better riding surface
- Grade separators
- Better road geometry
- Over bridges and underpasses
- Better traffic management and noticeable signage
- Bypasses and wayside amenities

(Source: *Website of NHAI (https://nhai.gov.in/#/about-nhdp)*)

Bharatmala Pariyojana (Phase-I)

The Cabinet Committee on Economic Affairs approved the implementation of an umbrella programme for the National Highways – "*Bharatmala Pariyojana Phase-I*" in its meeting held on October 24, 2017, for construction/ up-gradation of national highways of 34,800 kms length over a period of five years (2017-18 to 2021-22) at an estimated outlay of ₹ 5,35,000 Crore. The programme focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions like development of economic corridors, inter corridors and feeder routes, national corridor efficiency improvement, border and international connectivity roads, coastal and port connectivity roads and green-field expressways. Multi-modal integration is also built into this program. Special attention has been paid to fulfilling the connectivity needs of backward and tribal areas, areas of economic activity, places of religious and tourist interest, border areas, coastal areas and trade routes with neighbouring countries. Projects with aggregate length of approximately 9,674 kms (includes projects with length 347 kms which had been awarded and terminated) have already been awarded under Bharatmala Pariyojana (including residual NHDP Works) till December 2019, while projects with length 3,555 kms are currently under bidding. Additionally, work on preparation of detailed project reports for about 16,326 kms is under progress (Source: *MoRTH Annual Report*).

SUMMARY OF BUSINESS

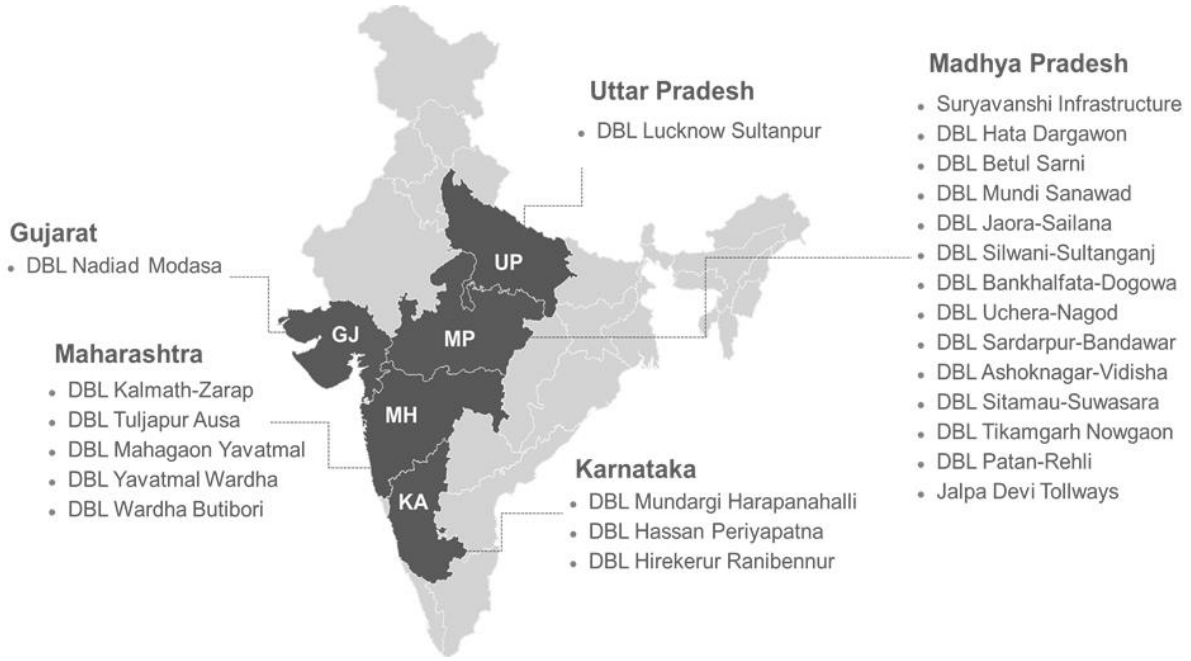
Overview

We are an InvIT set-up for the purposes of carrying on the activity of an infrastructure investment trust and for making investments in the Project SPVs or infrastructure projects or securities of Indian companies engaged in the infrastructure sector, as may be permitted, in accordance with the InvIT Regulations. We were registered with SEBI as an InvIT on February 4, 2021. Our Sponsor, Shrem Infra Structure Private Limited, is a part of the Shrem group. The Shrem group was founded in 2010 by Nitan Chhatwal, and has managed diverse investments in the hospitality, health care, telecommunication and infrastructure sectors. The Sponsor has set up the Trust, which, subject to receiving approvals from the Concessioning Authorities, will, amongst other things, acquire 100% of the issued and paid-up equity share capital of Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, the "**Holding Companies**"). It is proposed that through the Holding Companies, the Trust will ultimately acquire 100% shareholding in 20 Project SPVs and 74% shareholding in four Project SPVs (on account of shareholding requirements under the relevant concession agreements), which maintain and operate road assets aggregating to approximately 6,442.35 lane kilometers, located across five states in India (the "**Projects**"). For details of such proposed acquisitions, please see the section entitled "*Formation Transactions in relation to the Trust*" on page 19.

Our Projects

The Projects, consisting of both National Highways and State Highways, are located in the States of Madhya Pradesh, Maharashtra, Uttar Pradesh, Gujarat and Karnataka.

The map below illustrates the locations of the Projects:



* *Map not to scale*

We operate and maintain our Projects through the Project SPVs, the key details of which are provided below:

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
1.	DBL Lucknow Sultanpur Highways Limited ("**DLSHL**")	Augmenting the existing road from 11.500 kilometer to 134.700 kilometer (approximately 127.425 kilometer) on the Lucknow-Sultanpur section of National Highway number 56 (new National Highway number 731) by four-laning thereof on design, build, operate and transfer (annuity) basis.	666.77	Uttar Pradesh

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
2.	DBL Kalmath Zarap Highways Limited (“**DKZHL**”)	Augmenting the existing road from kilometer 406.030 to kilometer 450.170 (43.905 kilometer) on the Kalmath-Zarap section of National Highway number 17 (new National Highway number 66) by four-laning on design, build, operate and transfer (annuity) basis.	267.40	Maharashtra
3.	DBL Yavatmal Wardha Highways Private Limited (“**DYWHPL**”)	Augment the existing road from kilometer 400.575 to kilometer 465.500 of Yavatmal-Wardha section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	370.55	Maharashtra
4.	DBL Tuljapur Ausa Highways Limited (“**DTAHL**”)	Augmenting the existing road from kilometer 0.000 to kilometer 55.835 (existing chainage: kilometer 416.000 to kilometer 470.000) (approximately 67.428 kilometer) on the Tuljapur-Ausa (including Tuljapur bypass) section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	376.96	Maharashtra
5.	DBL Wardha Butibori Highways Private Limited (“**DWBHPL**”)	Augmenting the existing road from kilometer 28.800 to kilometer 85.374 (approximately 59.374 kilometer) on the Wardha-Butibori section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	351.93	Maharashtra
6.	DBL Mahagaon Yavatmal Highways Private Limited (“**DMYHPL**”)	Augmenting the existing road from kilometer 320.580 to kilometer 400.575 (approximately 80.195 kilometer) on the Mahagaon to Yavatmal section of National Highway number 361 by four-laning thereof on design, build, operate and transfer (annuity) basis.	450.42	Maharashtra
7.	DBL Ashoknagar Vidisha Tollways Limited (“**DAVTL**”)	Augmenting the existing road from bypass junction of Ashoknagar (kilometer 0/10) to Bangla Chauraha (kilometer 35.68) (approximately 35.68 kilometer), on the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis.	107.04	Madhya Pradesh
8.	DBL Betul Sarni Tollways Limited (“**DBSTL**”)	Augmenting the existing road from kilometer 0.00 (Kamani Gate Betul) to kilometer 124.10 (approximately 124.10 kilometer) on the section of State Highway number 43 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	372.30	Madhya Pradesh
9.	DBL Hata-Dargawan Tollways Limited (“**DHDTL**”)	Augmenting the existing road from kilometer 0.00 (Damoh naka in Ilatta town) to kilometer 64.40 (at Dargawan Tiraha) (approximately 64.40 kilometer), section of the State Highway number 48, by intermediate-laning on build, operate and transfer (toll plus annuity) basis.	193.20	Madhya Pradesh
10.	DBL Silwani Sultanganj Tollways Limited (“**DBL Silwani**”)	Augmenting the existing road from kilometer 0.00 to kilometer 75.995 (approximately 76.00 kilometer) on the Silwani-Sultanganj-Jaisinghnagar-Sagar Road section of State Highway number 15 by intermediate-laning / two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	228.00	Madhya Pradesh

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
11.	DBL Sitamau Suwasara Tollways Limited ("**DSSTL**")	Augment the existing road from kilometer 0/00 to kilometer 34/000 (approximately 34.97 kilometer) on the Sitamau-Basai-Suwasara section of major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	104.91	Madhya Pradesh
12.	DBL Mundi-Sanawad Tollways Limited ("**DMSTL**")	Augmenting the existing road from kilometer 0.00 (at Mundi) to kilometer 64.400 (at Sanawad town) (approximately 67.63 kilometer) on the Mundi-Punasa-Sulgaon- Sanawad section of the major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	202.89	Madhya Pradesh
13.	DBL Uchera-Nagod Tollways Limited ("**DUNTL**")	Augmenting the existing road from kilometer 32.00 (near Nagod National Highway number 75) to kilometer 87.00 (near Uttar Pradesh Border) including 1.70 kilometer Nagod bypass (approximately 55.60 kilometer) on the section of State Highway number 56 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	166.80	Madhya Pradesh
14.	DBL Sardarpur Badnawar Tollways Limited ("**DSBTL**")	Augmenting the existing road from kilometer 0/00 to kilometer 43/300 (approximately 43.00 kilometer) on the Sardarpur-Badnawar Road section of State Highway number 34 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis	129.00	Madhya Pradesh
15.	DBL Patan Rehli Tollways Limited ("**DPRTL**")	Augmenting the existing road from kilometer 31/10 of State Highway number 15 Rehli-Gorjhamar-Patan Chok and cross the junction of kilometer 113/00 of Rehli Gourjhamar State Highway number 15 including bypass of Rehli which is about 4.4 kilometer and terminated at kilometer 38/10 (approximately 86.60 kilometer) on the section of State Highway number 15 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	259.80	Madhya Pradesh
16.	DBL Tikamgarh-Nowgaon Tollways Limited ("**DTNTL**")	Augmenting the existing road from Y-junction in kilometer 10/8 at Tikamgarh-Malehra road (State Highway number 10) to kilometer 107 of Jhansi-Nowgaon (National Highway number 76) (approximately 76.40 kilometer), the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis	229.20	Madhya Pradesh
17.	DBL Nadiad Modasa Tollways Limited ("**DNMTL**")	Improving the section Nadiad-Madhudha-Kathial-Kapadwanj-Bayad-Modasa from kilometer 0.60 to kilometer 109.00 on State Highway number 59 by strengthening and widening to two-laning on design, build, finance, operate and transfer (annuity) basis.	325.20	Gujarat
18.	DBL Bankhalafata-Dogawa Tollways Limited ("**DBDTL**")	Augmenting the existing three major district roads under package-I comprising (i) Bankhalafata-Dogawa-via-Borawa-Savardevala (23.67 kilometer); (ii) Punasa-Mundi-Singhaji (thermal power plant) and Singhaji bridge approach road (13.30 kilometer); and (iii) Beed-Mundi-Devala-Khutala-Attoot-NVDA (28.43 kilometer) (total length of 65.40 kilometer) by intermediate-laning /	196.20	Madhya Pradesh

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
		two-laning on design, build, finance, operate and transfer (annuity) basis.		
19.	DBL Jaora-Sailana Tollways Limited ("**DJSTL**")	Augmenting the existing four major district roads under package-IV comprising (i) Jaora-Piplodha-Jalandharkheda and Piploda-Sailana (42.27 kilometer); (ii) Raipururiya-Petlabad-Bamniya (18.18 kilometer); (iii) Jawad-Khoh (21.07 kilometer); and (iv) Soyat-Pidawa (6.25 kilometer) (total length of 87.77 kilometer) by intermediate-laning / two-laning on design, build, finance, operate and transfer (annuity) basis.	263.31	Madhya Pradesh
20.	DBL Mundargi Harapanahalli Tollways Limited ("**DMHTL**")	Augmenting the existing State Highway from Mundargi-Hadagali-Harapanahalli (approximate length 51.21 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.	153.63	Karnataka
21.	DBL Hassan Periyapatna Tollways Limited ("**DHPTL**")	Augmenting the existing State Highway from Hassan-Ramanathapura-Periyapatna (approximate length of 73.69 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.	221.07	Karnataka
22.	DBL Hirekerur Ranibennur Tollways Limited ("**DHRTL**")	Augmenting the existing State Highway from Hirekerur-Ranibennur (approximate length 55.69 kilometers) on design, build, finance, operate, maintain and transfer (annuity) basis.	167.07	Karnataka
23.	Jalpa Devi Tollways Limited ("**JDTL**")	Augmenting the existing road National Highway number 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of National Highway number 3 by four-laning on design, build, finance, operate and transfer (toll) basis.	506.70	Madhya Pradesh
24.	Suryavanshi Infrastructure Private Limited ("**Suryavanshi Infra**")	Reconstruction, strengthening, widening and rehabilitation of Mandsaur-Sitamau section from existing kilometer stone 18 and ends at the existing kilometer stone 62 at Chambal River (Rajasthan border) (total 44 kilometer) on State Highway number 14 section, and its operation and maintenance, on build, operate and transfer basis.	132.00	Madhya Pradesh

** The calculation of lane kilometres is done as per the circular of MoRTH (Ref. No.341/PS/Secretary/RTH/2018) dated March 1, 2018 ("**MoRTH Measurement Circular**"). As per the MoRTH Measurement Circular, the linear measurement of the project highway has been dispensed with.).*

The concessioning authorities for the State Projects are Madhya Pradesh Road Development Corporation Limited ("**MPRDC**"), Karnataka Road Development Corporation Limited ("**KRDCL**"), Roads and Buildings Department, Government of Gujarat ("**RBDGG**") and for the National Highway Projects are National Highways Authority of India ("**NHAI**") and Ministry of Road Transport and Highways, Government of India ("**MoRTH**") (collectively, the "**Concessioning Authorities**"). Each of the concessioning authorities is a government entity.

The Projects are divided into four types on the basis of the implementation mode: (i) hybrid annuity; (ii) toll; (iii) annuity; and (iv) annuity plus toll. Key details of these models are set out below:

- The hybrid annuity model ("**HAM**") was introduced in January 2016 by the Government with an intent to share the financial risk with the developers, given that infrastructure projects are capital intensive in nature. In a HAM project, the concessioning authority shares a portion of the total project cost during the construction phase. As a mix of EPC and

annuity models, HAM reduces the financial burden of a concessionaire during the project construction phase and provides an assured revenue in form of annuities, interest on reducing balance of completion cost (BCC) and O&M payments linked to inflation in the operational phase. Annuity payments eliminate the risk of income fluctuations resulting from changes in traffic volumes. Going forward, HAM is expected to remain the preferred mode of contract for both the Government as well as developers.

- In an annuity project or where the annuity component of an annuity plus toll project is concerned, a fixed amount is paid semi-annually as annuity by the respective Concessioning Authority pursuant to the applicable concession agreement. Income from the project is thus assured to the extent of the annuity to be collected, thus eliminating or reducing our risk of income fluctuations resulted from changes in traffic volumes.

- In a toll-based project or where the toll component of an annuity plus toll project is concerned, concessionares are allowed to collect tolls from vehicles that use their project carriageways during the concession period at rates notified by the relevant Concessioning Authority, as updated from time to time. Income collected on a toll basis thus fluctuates as traffic volume changes, which is a risk inherent in the operation of our toll roads. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
Bid Criteria	Bid project cost ("**BPC**") and first year O&M payable during operation (Both BPC and O&M are indexed with inflation from bid date at every payment invoice)	One time grant receivable from the relevant Concessioning Authority or annual premium payable to the relevant Concessioning Authority	Fixed half yearly payment (annuity) throughout the concession period	Fixed half yearly payment (annuity) throughout the concession period
Bid Parameter	Lowest lifecycle cost considering net present value of BPC and O&M bids	Lowest grant or highest premium, as the case maybe	Lowest fixed half year payment (annuity)	Lowest fixed half year payment (annuity)
Payments during Construction	40% of the BPC, linked to physical progress in five equal instalments	Grant if payable else Nil	Nil	Nil
Payments during Operation/Revenue	**60% of the BPC is paid in bi-annual annuities over 15 years** after COD along with interest at 3 per cent above the RBI Bank Rate and O&M payment as per bid norms	**Actual Toll Collection.** Toll rates are revised and notified annually by the relevant Concessioning Authority with a fixed formula which consists of one fixed component (3% annual) and second inflation linked (40% of wholesale price index)	**Fixed Half Yearly Payment**	**Fixed Half Yearly Payment and Actual Toll Collection.** Toll Rates are revised and notified annually by Authority with a fixed formula
Concession Period	Construction period and 15 years of operations	As per the concession agreement (which varies	As per the concession agreement (which is usually up to 15 years)	As per the concession agreement (which is usually up to 15 years)

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
		between 12 to 26 years)		
Revenue Risk	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual annuity, interest and O&M payments are made by the relevant Concessioning Authority irrespective of the traffic.	The revenue is directly linked with the actual traffic plying on the project stretch. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by the relevant Concessioning Authority irrespective of the traffic.	There is no revenue risk with respect to annuity payments as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by Concessioning Authority irrespective of the traffic. The toll revenue is directly linked with the actual traffic plying on the project stretch.

Parties to the Trust

Our Sponsor, Shrem Infra Structure Private Limited and its directors, prior to entering the road infrastructure sector, was an investor in Radiant Life Care Mumbai Private Limited (from March 2015 to December 2017), which through an operation and maintenance agreement, was involved in expanding, equipping, operating, upgrading, managing and administering work of Dr. Balabhai Nanavati Hospital. For further details, please see the section entitled "*Parties to the Trust – The Sponsor - Shrem Infra Structure Private Limited*" on page 94. Further, the promoters of the Shrem group have managed investments in various assets classes such as debt capital markets, development of hotels, upgradation of hospital, private equity, lending through a group NBFC entity and development of road projects.

Our Investment Manager, Shrem Financial Private Limited, is responsible for managing us, the Holding Companies and the Project SPVs as well as undertaking investment decisions relating to our assets. The Investment Manager has been engaged in the infrastructure business since 2011. The Investment Manager, through its erstwhile subsidiary, Shrem Resort Private Limited (now Zon Hotels Private Limited), developed and operated the Novotel Goa Shrem Resorts Hotel and the Grand Mercure Goa Shrem Resort between January 2011 – September 2017. It successfully operated the two hotels until September 2017 and subsequently sold them. For further details, please see the section entitled "*Parties to the Trust – The Investment Manager – Shrem Financial Private Limited*" on page 105.

Our Trustee, Axis Trustee Services Limited, is a trusteeship company which has been registered with SEBI on January 31, 2014, and has been promoted by Axis Bank Limited for providing corporate and other trusteeship services. For further details, please see the section entitled "*Parties to the Trust – The Trustee – Axis Trustee Services Limited*" on page 94.

Our Project Manager, Shrem Road Projects Private Limited, will be overseeing the operation and maintenance of the entire portfolio of the Projects which has been contracted on a fixed price basis to DBL for the entire life of the respective Project. For further details, please see the section entitled "*Parties to the Trust – The Project Manager – Shrem Road Projects Private Limited*" on page 118. For further details in respect of our O&M arrangements, please see the section entitled "*Business – Operation and Maintenance*" on page 214.

Competitive Strengths

Sizeable portfolio of long term steady revenue-generating assets

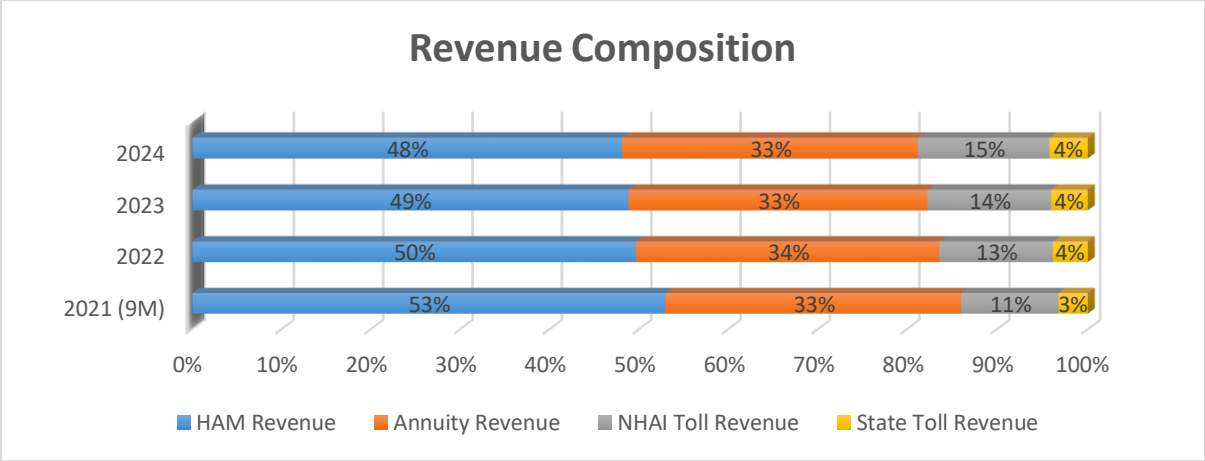
The Trust will have a sizeable initial portfolio of completed and revenue-generating assets, consisting of the 24 Projects, having an aggregate length of 6,442.35 lane kilometres, located across five states in India. Each Project SPV has entered into a long term concession agreement with one of the Concessioning Authorities, having concession periods ranging between 10 and 26 years, with each such concession period commencing from the appointed date of the relevant Project. Thus, the Projects will provide long term cash flows to the Trust. On a collective basis, the HAM Projects had a weighted average residual project life

of approximately 13.83 years, JDTL had a residual project life of approximately 21.70 years and the state Projects had a weighted average residual project life of approximately 7.46 years, each as of December 31, 2020.

Diversified road asset portfolio in terms of Concessioning Authorities, categories of revenue and geographies

The Projects comprise six hybrid annuity projects, 10 annuity plus toll projects, six annuity projects and two toll projects (one being a sole toll project and the other being a grant and toll project) across five states of India, with concessions granted by five different Concessioning Authorities. We believe that the diversified revenue streams from our Projects place us at a unique position in the Indian road sector providing us with steady cash flow during the course of the year.

1. *Breakup of share of annuity revenue and toll revenue in total revenue*: A significant portion of our revenue comes and is expected to continue in the future from annuities paid by the relevant Concessioning Authorities, which signifies the steady nature of income for the Trust. Further, the state toll revenue from our Projects comprising approximately 4% of our combined revenue from operations has been linked with the O&M payments under 14 state Projects to the O&M Contractor, thus eliminating any risk of fluctuations in toll collection.

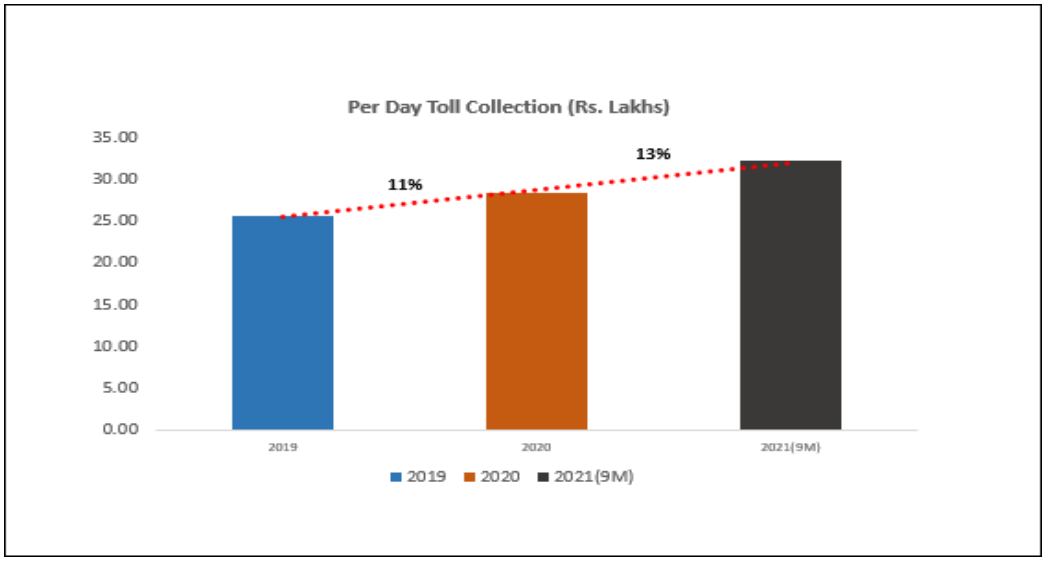


* *The revenue composition for the nine months ended December 31, 2020 is based on the Audited Special Purpose Combined Financial Statements. For further details, please see the section entitled "Audited Special Purpose Combined Financial Statements" on page 458.*

** *The revenue composition for Fiscal 2022, 2023 and 2024 is based on the Projections of Revenue from Operations and Cash Flow from Operating Activities (based on actual cash inflow). For further details of the Projections of Revenue from Operations and Cash Flow from Operating Activities and reliance on the same, please see the sections entitled "Projections of Revenue from Operations and Cash Flow from Operating Activities" and "Risk Factors – The Audited Special Purpose Combined Financial Statements and Projections of Revenue from Operations and Cash Flow from Operating Activities presented in this Draft Placement Memorandum may not be indicative of the future financial condition and results of operations of the Trust" on pages 524 and 63, respectively.*

2. *Annuity Track Record*: The Project SPVs have received 184 regular semi-annual annuities till December 31, 2020. We have been receiving regular semi-annual annuities from MPRDC since 2013, RBDGG since January 2015, KRDCL since March 2019 and NHAI since October 2019. As per the concession agreements, the relevant Concessioning Authorities are required to make payment within 15 days of due date as per concession period and average collection days on all annuities is 13 days from the due date.

3. *Sole NHAI Toll Asset:* Jalpa Devi Tollway Limited is the only NHAI project in our portfolio that is entirely based on NHAI toll revenues. It is part of a NH-3, which connects Agra-Gwalior-Shivpuri-Biaora-Dewas-Indore-Nasik-Mumbai. Toll revenue have shown consistent growth since its COD i.e. 18th June 2018. During Financial year 2020-21, the first quarter showed a decline in traffic in freight modes due to a complete lockdown in view of COVID-19. The traffic showed recovery in second and third quarter of FY21 as the lockdowns were eased and economic activities slowly started to pick up (Source: *Traffic Report*).



The concession periods of the Project SPVs started at different times and they are expected to expire at different times, thereby ensuring continuous cash flows. The residual terms of the concession agreements range between 5.51 years and 21.70 years as of December 31, 2020. We believe that our temporally and geographically diverse project portfolio and our expertise leveraged from existing projects provides us with an advantage in capitalizing on new opportunities available in the Indian roads and highways sector. We believe that this diversification strengthens our business by reducing our reliance on any specific project and reducing the potential impact on our business of any economic slowdown or Project-specific *force majeure* event or with respect to any particular project.

Strong O&M support and favourable O&M structure

For the present O&M arrangements of the Project SPVs, please see the section entitled "*Business – Operation and Maintenance*" on page 214.

Pursuant to the O&M Agreements, Dilip Buildcon Limited shall be appointed as the O&M contractor in respect of the Project SPVs ("**DBL**" or the "**O&M Contractor**") prior to filing the Placement Memorandum with SEBI. DBL was the original bidder for the Project SPVs, and was also the EPC contractor for the construction and development of each of the Projects.

DBL is one of the largest players in the Indian road construction sector in terms of scale of operations and order book size. DBL has demonstrated strong execution capability over the past few years. DBL bids for projects after factoring synergetic benefits arising from clustering of projects and stretches with relatively lower hurdles of land acquisition and clearances. DBL has a large fleet of self-owned equipment and machinery and a large workforce to support all their contractual obligations, including the O&M activities relating to our projects.

Pursuant to the terms of the O&M Agreements, DBL will be responsible for discharging all the O&M responsibilities required to be discharged under the Concession Agreements by the Project SPVs. For further details, please see the section entitled "*Business – Operation and Maintenance*" on page 214. The Investment Manager believes that the Trust will benefit from DBL's engagement as the O&M Contractor for the Project SPVs, given that DBL was the original owner and developer of the Projects and has extensive experience in the road infrastructure sector. Some of the benefits that arise from our O&M arrangements with DBL include:

- The O&M Agreements will have a fixed cost structure for the entire concession life of each Project SPV, and the O&M Contractor will not be entitled to any adjustments in payments on account of any escalation in prices and inflation as well as adjustments for items required for the execution of the O&M obligations under the O&M Agreements.

- In case of the NHAI and MoRTH HAM Projects, we shall be entitled to withhold the release of the defect liability deposit (submitted in the form of performance security) and utilise such deposit against any cost incurred by the Project SPV or the O&M Contractor due to non-fulfilment of the O&M obligations mentioned in the relevant O&M Agreements. Further, under the O&M Agreements, the Project SPV will be required to make payments after the expiry of six months from the date of the expiry of the defects liability period under the relevant EPC agreements.

- Under the O&M Agreements, the O&M Contractor will be required to provide a performance security, in form of a corporate guarantee from the O&M Contractor, as security for the performance of its obligations. The Project SPVs shall be entitled to invoke such performance security as Damages in the event of a default by the O&M Contractor.

- Payments to the O&M Contractor will be subject to certain conditions, including:

    - such payments being subject to receipt of the annuity by the relevant Project SPV under its concession agreement, except where there is any loss of annuity or delay in receipt of annuity from the relevant Concessioning Authority due to reasons attributable to the relevant Project SPV or the relevant Concessioning Authority (in which case the payments will be released to the O&M Contractor on the due date of payment); and
    - the entitlement of a Project SPV to adjust payments to be made to the O&M Contractor in the event any annuity is withheld or reduced by the relevant Concessioning Authority on account of any deficiency in the O&M of the relevant Project or for the breach of by the O&M Contractor of the relevant O&M Agreement.

Further, since a significant portion in six of our HAM Projects is rigid pavement roads (i.e. road constructed with cement, also known as pavement quality concrete roads ("**PQC Roads**")). The design life of PQC Roads is approximately 25-30 years which is more than the concession life of such Projects (being 15 years). Since PQC roads does not require periodic overlay, the maintenance expenses are relatively lower. In addition, the average annual daily traffic plying on the State Projects is 1,343 passenger car equivalent units. The maintenance cost of such Projects, amongst other aspects, is also linked with the vehicular traffic using the Projects. Since traffic on such Projects is very low, the associated maintenance cost is also low.

Hedge against adverse interest rate movements

The NHAI and MoRTH HAM Projects have a natural hedge against the risk of adverse interest rate movement. In addition to the annuity payments due under such concession agreements during the operations period, the relevant concession agreements for HAM Projects require the relevant Concessioning Authority to pay interest on the reducing balance of the completion cost (equivalent to 60% of the BPC) throughout the operation period at the rate of 3 per cent above the prevailing RBI Bank Rate. Accordingly, any increase in the interest payable on loans by us due to an increase in interest rates gets offset by the increased revenues earned by us on such HAM Projects. The value of the financial assets carrying this interest is higher than the consolidated debt of the Project SPVs availed from banks and financial institutions.

Skilled and experienced management team with industry experience

We will be managed by qualified personnel of the Investment Manager who have management and operational experience in the roads and highways sector. For further details, see "*Parties to the Trust – The Investment Manager – Shrem Financial Private Limited*" on page 105. We believe that the experience and leadership of these teams will contribute to our growth and success and will position the Project SPVs to be operated and managed in an efficient manner.

Attractive industry sector with favourable government policies

Further development of the infrastructure sector, in particular road infrastructure, is a priority for the GoI and has been the subject of enhanced investment from the public sector through traditional means of public investment and new channels such as PPPs. Roads have been the key focus area for budget allocations over the years. Under Union Budget 2020-21, the Government has allocated ₹ 91,823 crore (US$ 13.14 billion) under the Ministry of Road Transport and Highways. Between FY2016 and FY2021, budget outlay for road transport and highways increased at a robust CAGR of 13.10%. Huge investment have been made in the sector with total investment increasing more than three times from ₹ 51,914 crore (US$ 7.43 billion) in 2014-15 to ₹ 158,839 crore (US$ 22.73 billion) in 2018 – 2019. More than 13,000 km length of roads have already been awarded under the Bharatmala Pariyojana project, of which 3,800 kms have been constructed. By March 2022, the government aims to award another 8,500 kms and complete an additional 11,000 kms of national highway corridors (Source: *Union Budget 2021-2022*). Through the PPP model, among others, the Investment Manager believes that the Trust has acquired, and will continue to capture through further acquisitions, a significant share in the PPP format of the road infrastructure sector.

For further details, please see the section entitled "*Industry Overview*" on page 136.

Business Strategies

The Investment Manager believes the following to be the key strategies of the Trust:

Institute and maintain prudent capital management policies

The Investment Manager will seek to employ appropriate financing policies and diversify its sources of financing with the objective of minimizing our overall cost of capital to retain enough flexibility to make acquisitions in the future while also maximising distributions to Unitholders.

Active asset management

We intend to continue to manage our road assets through the services of the Project Manager and the O&M Contractor. The Project Manager and the O&M Contractor will be responsible for providing routine O&M services pursuant to the provisions

of the Project Implementation and Management Agreements and O&M Agreements. For further details in respect of our O&M arrangements, please see the section entitled "*Business – Operation and Maintenance*" on page 214.

Future acquisition of completed steady revenue- generating annuity road infrastructure assets

The Investment Manager may in the future expand our initial portfolio by identifying and acquiring additional operational revenue generating hybrid annuity or annuity projects which meet our Investment Objectives in accordance with the provisions of the Trust Deed. For further details of the Investment Objectives, please see the section entitled "*Overview of the Trust*" on page 17.

In addition, the Investment Manager believes that due to trends in the industry, a number of acquisition opportunities may be available. These trends include the potential divestment of assets by reputed Infrastructure developers, highly leveraged private companies and by financial and private equity investors seeking to exit their investments. The Investment Manager hopes to take advantage of these opportunities by actively sourcing and acquiring quality assets from such third parties on a case-by-case basis which is value accretive to existing unitholders. The acquisitions shall be done only after a detailed technical and financial due diligence from independent third parties.

RISK FACTORS

An investment in the Units involves a high degree of risk. Investors should carefully consider all the information in this Draft Placement Memorandum, including the risks and uncertainties described below, before making an investment in the Units. If any of the following risks actually occurs, the business, results of operations and financial condition of the Trust could suffer, the price of the Units could decline and investors may lose all or part of their investment. The risks and uncertainties described below are not the only risks that the Trust faces or may face. Additional risks and uncertainties not presently known to the Investment Manager and the Trust or that they currently believe to be immaterial may also have an adverse effect on the business, results of operations and financial condition of the Trust and as a result, the returns on investments of the Unitholders. If any of the following risks, or other risks that are not currently known or are currently considered immaterial, actually occur, our business prospects, results of operations, cash flows and financial condition could suffer, the price of the Units could decline, and prospective investors may lose all or part of their investment. Unless specified or quantified in the relevant risk factors below, the Investment Manager and the Sponsor are not in a position to quantify or specify the financial or other implications of any of the risks described in this section.

In making an investment decision, prospective investors must rely on their own examination of the Trust and the terms of the Issue, including the merits and risks involved. To obtain a complete understanding, this section should be read in conjunction with the sections entitled "Business" and "Discussion and Analysis by the Directors of the Investment Manager of the Financial Condition, Results of Operations and Cash Flows of the Initial Portfolio Assets of the Trust" on pages 144 and 379, respectively as well as the financial statements and other financial information included elsewhere in this Draft Placement Memorandum. Before investing in the Units, prospective investors should obtain professional advice on investing in the Issue.

This Draft Placement Memorandum also contains forward-looking statements that involve risks and uncertainties and assumptions. The Trust's actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including considerations described below and in "Forward Looking Statements".

Investors should be aware that the price of the Units, and the income from them, may be subject to volatility. If any of the risks described below occurs, our business and prospects could be materially and adversely affected and investors could lose all or part of their original investment.

In making an investment decision, prospective investors must rely upon their own examinations and the terms of the Issue, including the merits and the risks involved. The prospective investors should consult their tax, financial and legal advisors about the particular consequences of investing in the Issue.

RISKS RELATING TO THE TRUST'S BUSINESS AND INDUSTRY

1. We propose to intimate our lenders in relation to the transactions contemplated under the Issue or the refinancing of the loans obtained by the Project SPVs from banks and other financial institutions.

Certain of the lending arrangements entered into by the Project SPVs in relation to loans availed by them from banks and other financial institutions may require consent to be obtained by the Project SPVs for, amongst others, incurring further indebtedness and in certain cases, for change in management control. Prior to filing the Placement Memorandum with SEBI, each of the Project SPVs shall serve notices to its relevant lenders in relation to the repayment or prepayment of the outstanding debt availed from such lender, which shall include details of the amounts proposed to be repaid or prepaid, the Issue and the proposed transfer of the Holdcos and the Project SPVs to the Trust. There can be no assurance that upon intimation, the lenders or financial institutions will not prescribe any conditions in relation to the Issue and proposed refinancing by the Project SPVs.

2. Some of our business approvals and applications for business approvals are not traceable.

We have not been able to trace copies of certain applications made by the Project SPVs in relation to approvals required under certain labour laws and certain approvals obtained by the Project SPVs in relation to their business, including approvals relating to environmental clearances, registrations under Shops and Establishments Acts of various states and registration under the Legal Metrology Act, 2009 and respective state government rules for weigh-in-motion and road weigh bridge. Despite conducting searches of our internal records, we have not been able to trace the aforementioned documents.

While information in relation to the aforementioned applications and some of the aforementioned approvals has been disclosed in the section entitled "*Regulatory Approvals*" on page 417 based on the internal records of the Project SPVs and the Investment Manager, we may not be able to furnish any document evidencing making such applications or receiving such approvals. We cannot assure you that the abovementioned applications and approvals will be located by us in a timely manner or at all. Further, there can be no assurance that in the event of any legal proceedings or regulatory actions against any of the Project SPVs in relation to such applications or approvals, the Project SPVs will not face adverse consequences or penalties on account of not being able to provide documentation in relation to such applications or approvals.

3. ***A significant portion of our concessions have been granted by MPRDC. Further, a significant portion of our projected revenue will be derived from the NHAI HAM Projects.***

13 of the 24 Project SPVs have been granted concessions by MPRDC. Any adverse changes to the terms of the existing concession agreements of such Project SPVs, or any changes to the existing policy framework of MPRDC may adversely impact the cash flow, business and revenue from operations of such Project SPVs and may accordingly have an adverse impact on the Trust.

Further, as per the Projections of Revenue from Operations and Cash Flow from Operating Activities, the revenue from operations for Fiscals 2022, 2023 and 2024 arising from the six National HAM Projects is projected to constitute approximately 50%, 49% and 48% of our overall projected revenue from operations for Fiscals 2022, 2023 and 2024. For further details of the Projections of Revenue from Operations and Cash Flow from Operating Activities and reliance on the same, please see the sections entitled "*Projections of Revenue from Operations and Cash Flow from Operating Activities*" and "*– The Audited Special Purpose Combined Financial Statements and Projections of Revenue from Operations and Cash Flow from Operating Activities presented in this Draft Placement Memorandum may not be indicative of the future financial condition and results of operations of the Trust*" on pages 524 and 63, respectively. Any adverse impact on the revenue from operations of the National HAM Projects will have an adverse impact on the business, cash flows and revenue from operations of the Trust.

4. ***Some of our Project SPVs and the Holding Companies have availed non-interest bearing unsecured loans from the Sponsor, other Shrem group entities and/or other parties.***

Some of our Project SPVs and the Holding Companies have availed non-interest bearing unsecured loans from the Sponsor, other Shrem group entities and/or other parties which shall continue on the books of such Project SPVs even after listing of the Issue. In the event that any such lender seeks any pre-mature repayment of any such loan, such Project SPVs and/or Holding Companies and/or the Trust would need to find alternative sources of financing such repayment, which may not be available on commercially reasonable terms, or at all. Any such pre-mature repayment may have a material adverse effect on the Project SPVs and/ or the Holding Companies business, cash flows and financial condition. For further details of such non-interest bearing unsecured loans please see the section entitled "*Financial Indebtedness and Deferred Payments*" on page 369.

5. ***The lenders of the Initial Portfolio Assets may not release the security, including pledge of shares of certain Initial Portfolio Assets, that has been created pursuant to loan agreements that have been entered into between the Initial Portfolio Assets and their lenders.***

The shares of SRPL and STPL are pledged with their lenders as part of the security for borrowings availed by them from their respective lenders. If such security is not released by the lenders in a timely manner after the Bid/Issue Closing Date, it could have an adverse effect on the ability of the Trust to acquire shareholding in SRPL and STPL in a timely manner or at all.

The Trust proposes to utilise the proceeds from the InvIT Loan and the Issue to repay the loans that are currently outstanding with the Project SPVs (the "**Project SPV Loans**"). For further details, please see the sections entitled "*Use of Proceeds*" and "*Financial Indebtedness and Deferred Payments*" on page 367 and 369, respectively. The Project SPVs have secured the indebtedness under the Project SPV Loans in favour of the respective lenders. The security that has been created in favour of these lenders will be released within an agreed period of time from the repayment of the Project SPV Loans. If such security is not released by the lenders within the time period agreed, or in the event of a dispute with the Project SPVs in relation to such security, it could have an adverse effect on the Trust's business and results of operations.

6. ***The Trust proposes to incur indebtedness, the terms of which may impose restrictions and conditions which may adversely affect the Trust's ability to conduct its business.***

The Trust proposes to avail a loan aggregating to ₹ 34,213.70 million after the Closing Date (the "**InvIT Loan**" for the purpose of prepayment or repayment of the Project SPV Loans (other than the loan availed by DBL Lucknow Sultanpur Highways Limited).

The terms of the InvIT Loan may contain customary restrictive covenants and conditions, such as the requirement to obtain prior consent from the relevant lender to dispose of InvIT Assets or incur further indebtedness at the Trust or Project SPV level.

Further, the terms of the InvIT Loan may include restrictive conditions in relation to acquisitions by the Trust (including to completed and operational projects), which may restrict the ability of the Trust to acquire certain categories of eligible infrastructure projects, as otherwise permitted under the InvIT Regulations.

Additionally, the InvIT Loan may be secured by, among other things:

- first charge on all immoveable assets, moveable assets and the receivables of the Trust;
- first charge on the escrow account opened by the Trust in which the free cash flows of the Initial Portfolio Assets and any infrastructure projects directly owned by the Trust will be deposited;
- assignment of loans granted by the Trust to the Initial Portfolio Assets;
- pledge of securities of the Initial Portfolio Assets held by the Trust; and
- pledge over a portion of the Units held by the Sponsor.

There can be no assurance that the Trust would be able to comply with the terms applicable to the InvIT Loan. In the event the Trust is unable to comply with such terms, our business, financial condition, results of operation, cash flows and ability to make distributions to Unitholders may be adversely affected.

7. The terms of the Project Implementation and Management Agreements, O&M Agreements and the Subscription Agreements may change subject to comments provided by Concessioning Authorities

Pursuant to the terms of the respective concession agreements, the Project SPVs are required to submit to their respective concessioning authorities, drafts of all project agreements or any amendments or replacements, pursuant to which the relevant concessioning authorities have the right to review and provide comments within specified time periods. Accordingly, the Project SPVs will submit drafts of the Project Implementation and Management Agreements, the O&M Agreements and the Subscription Agreements to the relevant concessioning authorities for their review and comments prior to filing the Placement Memorandum with SEBI. The drafts of the Project Implementation and Management Agreements, the O&M Agreements and Subscription Agreements may be required to be amended subject to any comments or observations received from the concessioning authorities.

8. The Valuation Report by S. Sundararaman (the "Valuer") is not an opinion on the commercial merits and structure of the Issue nor is it an opinion, express or implied, as to the future trading price of Units or the financial condition of Trust upon the Listing, and the valuation of the Project SPVs contained in such Valuation Report may not be indicative of the true value of the Project SPVs.

S. Sundararaman was appointed as the independent valuer (the "**Valuer**") to undertake independent appraisals of the Project SPVs. The Valuer issued a letter and a report appended to it (together, the "**Valuation Report**"), which sets out its opinion as to the fair market value of the Project SPVs as of January 31, 2021. The Valuation Report is based on various assumptions with respect to the Project SPVs, including their revenue cash flows, O&M expenses, major maintenance and repairs costs, defect liability payments, capital expenditure and working capital. Such assumptions are based on the information provided by, and discussions with, the Investment Manager. Further, the Valuation Report is based on estimates of future financial performance or opinions, which represent reasonable expectations at a particular point of time, but such information, estimates or opinions are not offered as predictions or as assurances that a particular level of income or profit will be achieved, a particular event will occur or that a particular price will be offered or accepted.

The Valuation Report is neither an opinion on the commercial merits and structure of the Issue, nor is it an opinion, express or implied, as to the future trading price of Units or the financial condition of the Trust upon Listing. The Valuation Report does not purport to contain all the information that may be necessary or desirable to fully evaluate the commercial or investment merits of the Issue or the Trust. The Valuation Report does not confer rights or remedies upon investors or any other person, and does not constitute and should not be construed as any form of assurance as to the financial condition or future performance of the Trust or the Project SPVs. Further, the Valuation Report is necessarily based on financial, economic, monetary, market and other conditions as of the date of the Valuation Report. The Valuation Report has not been updated since the date of its issue and does not take into account any developments subsequent to the date of its issue.

Further, the outbreak of the COVID-19 pandemic has created significant uncertainty in valuation and accordingly, the Valuer has recommended a degree of caution to the values arrived under current circumstances, as the same may change rapidly depending on the changing market scenario. Due to the outbreak of the COVID-19 pandemic, the valuation exercise undertaken by the Valuer is based on significant assumptions within the valuation approach and methodology, which are based on factors whose outcome are uncertain and hence, results in lower certainty of the value determined in the Valuation Report, than would otherwise be in this case.

There can be no assurance that the Valuation Report reflects the true value of the Project SPVs or that other independent valuers would arrive at the same valuation. Accordingly, investors should not rely unduly on the Valuation Report in making an investment decision to purchase Units in the Issue. For details, please see the Valuation Report in Annexure

A.

9. The accuracy of statistical and other information with respect to the road infrastructure sector and the traffic assessment report commissioned by the Investment Manager for the Toll Projects contained in this Draft Placement Memorandum cannot be guaranteed.

Statistical and other information in this Draft Placement Memorandum relating to India, the Indian economy or the road infrastructure sector have been derived from various government publications, research reports from reputable institutions and communications with various Indian government agencies that are believed to be reliable. However, there can be no guarantee as to the quality or reliability of such information.

Two of the Projects (being the JDTL Project and the Suryavanshi Infra Project) are exclusively toll based whilst the remaining 22 Projects are predominantly annuity based. In relation to the JDTL Project and the Suryavanshi Infra Project (together, the "**Toll Projects**"), the information reflected in the Traffic Report and the Suryavanshi Infra Technical Report is subject to various limitations and is based upon certain estimates and assumptions that are subjective in nature. The Traffic Report and the Suryavanshi Infra Technical Report reflect current expectations and views regarding future events, and contain forecasts, projections and other forward-looking statements that relate to future events. The future events referred to in the Traffic Report and Suryavanshi Infra Technical Report are subject to risks, uncertainties and factors such as gross domestic product growth, current and future traffic mix, per capita income changes and alignment of the Delhi-Mumbai expressway (in case of the Traffic Report), which may cause the actual traffic volumes to be materially different from any future traffic volumes expressed or implied by the Traffic Report and the Suryavanshi Infra Technical Report.

While reasonable care has been taken in the reproduction of the information, no assurance can be made as to the accuracy of such facts and statistics, which may not be consistent with other information compiled within or outside India. Due to possibly inconsistent or ineffective collection methods or discrepancies between published information and market practice, the statistics contained in the Traffic Report and the Technical Reports may be inaccurate or may not be comparable to statistics produced for other economies and should not be unduly relied upon. Further, there is no assurance that the statistics are stated or compiled on the same basis or with the same degree of accuracy as may be the case with information from elsewhere.

Further, the Technical Consultant has prepared the Technical Reports concerning the Initial Portfolio Assets which are contained in this Draft Placement Memorandum. We commissioned the Technical Reports for the purposes of conducting a technical assessment of the Project SPVs. Neither we, nor the Trustee, the Sponsor, the Lead Manager, the Investment Manager nor any other person connected with the Issue has verified the information in the Technical Reports. Further, the Technical Reports have been prepared based on information as of specific dates and may no longer be current or reflect current trends. Opinions in the Technical Reports based on estimates, projections, forecasts and assumptions may prove to be incorrect. The Technical Reports are subject to various limitations and are based upon certain bases, estimates and assumptions that are subjective in nature and that are based, in part, on information provided by and discussions with or on behalf of us and the Investment Manager. There can be no assurance that the bases, estimates and assumptions adopted by the Technical Consultant for the purposes of preparing the Technical Reports will prove to be accurate. Future reports for the Project SPVs could be materially different from those that are set forth in the Technical Reports and this Draft Placement Memorandum. The Technical Reports are not a recommendation to invest or disinvest in the Project SPVs. Prospective investors are advised not to unduly rely on the Technical Reports when making their investment decision.

10. The acquisition by the Trust of the Project SPVs from the Sponsor may be subject to certain risks, which may result in damages and losses, and conditions that may prevent the Trust from acquiring the Project SPVs or providing debt financing to them.

While the Investment Manager believes that reasonable due diligence will have been carried out on the Project SPVs prior to their acquisition by the Trust, there can be no assurance that the Projects will not have defects or deficiencies that are unknown or unquantified and that may require additional capital expenditure or obligations to third parties, including to the relevant concessioning and statutory authorities, which may have an adverse effect on the Trust's earnings and cash flows and the distributions to the Unitholders.

The sellers of the Holding Companies and Project SPVs, including the Sponsor, under each Securities Purchase Agreement, has agreed to indemnify the respective Holding Company and Project SPVs, the Investment Manager and their respective directors, and the Trust for any losses resulting from breach, inaccuracy or misrepresentation of the representations and warranties. Under the terms of the Securities Purchase Agreements, the period for claiming under the indemnity shall be unlimited in respect of fundamental warranties of the sellers and five years from the Closing Date for all other warranties of the sellers. For further details, see the section entitled "*Related Party Transactions*" on page 405.

Further, the Project Manager has agreed to indemnify the Trust under the Project Implementation and Management

Agreements. The Project Manager will indemnify each Project SPV for claims made in a particular financial year, provided that the claims do not exceed the fee paid or payable to the Project Manager, in that financial year. Claims exceeding the amount limits, not indemnified by the Project Manager, would have an adverse effect on the Project SPVs' financial performance.

The Project SPVs may, from time to time, receive letters and notices from their respective concessioning authorities imposing penalties and seeking claims for any deficiencies or non-compliance with the terms of the respective concession agreement or other project agreements or a claim or compensation under the terms of the respective concession agreement. The Project SPVs may contest such claims or invoke any indemnification provided by the O&M Contractor. However, there would be an adverse effect on the relevant Project SPV's operations and financial condition if a claim is decided against such Project SPV. Ongoing claims by certain Project SPVs against their respective concessioning authorities have been disclosed in the section entitled "*Legal and other information*" on page 420. Further, the Project SPVs have applied to the concessioning authorities for their consent in relation to, amongst others, the transfer of the Project SPVs to the Trust. There can be no assurance that while granting such consent, the concessioning authorities will not impose any conditions in relation to such transfer.

In addition, the Project SPVs may be subject to unknown or contingent liabilities for which the Trust may have limited or no recourse against the Sponsor. Such unknown or contingent liabilities may also include tax liabilities and other liabilities whether incurred in the ordinary course of business or otherwise.

11. We may not be able to recover losses arising from the acquisition of the Project SPVs by the Holdcos from Dilip Buildcon Limited.

Pursuant to the terms of the share acquisition cum shareholders agreements entered into between the Holdcos and Dilip Buildcon Limited ("**DBL**"), the Holdcos acquired shareholding in the Project SPVs. Under the SASHAs, DBL has agreed to indemnify and hold harmless the Holdcos and their Affiliates, directors, officers, employees and advisors against all losses and damages which arise out of, or result from or may be payable by virtue of, amongst others, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties granted under the SASHAs or a matter or event which renders any such warranties false, incomplete or inaccurate. There is no assurance that in the event any of the purchase warranties granted by DBL to a Holdco is found to be inaccurate, false, incomplete or inaccurate, the relevant Holdco will be able recover any losses arising therefrom pursuant to the indemnification provisions of the SASHAs, in a timely manner, or at all.

12. The Audited Special Purpose Combined Financial Statements and Projections of Revenue from Operations and Cash Flow from Operating Activities presented in this Draft Placement Memorandum may not be indicative of the future financial condition and results of operations of the Trust.

The Audited Special Purpose Combined Financial Statements of the Project SPVs for the nine months ended December 31, 2020 and for Fiscals 2020, 2019 and 2018 constitute a different presentation of information and may not necessarily reflect the consolidated financial position, results of operations or cash flows of the Trust, and nor will they necessarily give an indication of the financial position, results of operations or cash flows of the Trust or the Project SPVs in the future.

After the Listing, there may be certain changes to the Trust's cost structure, levels of indebtedness and operations, and these could differ materially from the historical combined cost structure and levels of indebtedness presented in the Audited Special Purpose Combined Financial Statements. For example, there are certain costs, such as the Investment Manager's fee, the Project Manager's fee and other costs relating to the Trust, that will be incurred by the Trust going forward, some of which were not incurred by the Project SPVs historically. For details of recurring expenses, please see the section entitled *"Overview of the Trust"* on page 17. In addition, the Project SPVs will be valued at fair value at the time of the actual acquisition of such assets by the Trust, which will occur prior to the Closing Date, for the purpose of a purchase price allocation exercise required under Ind AS for financial reporting purposes. Furthermore, the future consolidated financial statements of the Trust will be prepared on the basis of Ind AS 103 "Business Combinations", which is different from the accounting treatment used for the preparation of the Audited Special Purpose Combined Financial Statements.

The financial projections contained in this Draft Placement Memorandum are based on historical financial information and certain estimates and assumptions. There can be no assurance that the Project SPVs will be able to generate sufficient cash from the operations of the Projects for the Trust to make distributions to Unitholders or that such distributions will be in line with those set out in the section entitled *"Projections of Revenue from Operations and Cash Flow from Operating Activities"* on page 524. The future financial performance of the Trust could vary materially from the financial projections and some of such projections' underlying assumptions might change or not materialise as expected. Unfavourable events or circumstances not anticipated may also arise. There can be no assurance that the assumptions will be realised or actual distributions will be as anticipated.

13. The flexibility of the Trust and the Project SPVs to utilise available funds may be restricted by the escrow arrangements they are required to maintain under the concession agreements.

Under the terms of the concession agreements, the Project SPVs are required to establish escrow accounts. The Project SPVs are required to deposit all their cash inflows and receipts into the escrow accounts, including, among other things, tolls collected from the Projects and any payments (including termination payments) by the concessioning authorities. The funds in such escrow accounts are to be utilised only in the manner prescribed in the escrow agreements and the concession agreements. The escrow arrangements typically prioritise the payment of all taxes due and payable by the Project SPV, followed by the payment of expenses in connection with (i) the construction of the Projects, (ii) O&M expenses and other costs and expenses incurred by the relevant concessioning authority, (iii) any payments and damages payable to the relevant concessioning authority, (v) debt servicing of the project lenders, and (v) the balance if any in accordance with the instructions of the Project SPVs.

Any withdrawals from the escrow accounts by the Project SPVs during the concession periods must be made strictly in accordance with the terms of the concession agreements, debt documentation and escrow agreements, thereby limiting the flexibility of the Project SPVs in utilising available funds to plan for, or react to, changes in their business needs, which could have an adverse effect on their business, financial condition and results of operations.

With respect to withdrawals on termination of the concession agreements, the escrow arrangements typically prioritize the payment of all taxes due, followed by the payment of prescribed percentage of debt due to project lenders (excluding subordinated debt), the payment of any outstanding concession fee, the payment of damages in relation to the concession, retentions and payments arising out of liability for any defects, the remainder of debt due, subordinated debt, operation and maintenance expenses and any other payments under the concession agreement, after which the balance may be withdrawn by the Project SPVs for their own purposes. The loans/advances by the shareholders will be classified as subordinated debt and equity under the concession agreements, unless the same is otherwise approved by the concessioning authorities.

Accordingly, the ability of the Trust to access such termination payments in relation to the loans/advances by the shareholders will be subordinated to the discharge of all obligations towards the project lenders and the payment of, among other things, any outstanding concession fees and damages. Any shortfall in the termination payments received from the concessioning authorities may prevent us from recovering our investments or returns in the relevant Project SPVs adequately or at all. Also, on termination of the Concession Agreement and/or default under the financing documents executed with the project lenders, the payments/withdrawals from the escrow accounts of the respective Project SPVs may be entirely controlled by the discretion of the concessioning authorities and/or the project lenders.

14. The Project SPVs have entered into concession agreements which contain certain onerous provisions and any failure to comply with such concession agreements could result in adverse consequences including penalties and the substitution of the concessionaire.

The Project SPVs have entered into concession agreements with their respective concessioning authorities with which the Project SPVs have a limited ability to negotiate the terms of the concession agreements. As a result, the concession agreements contain terms that may be onerous to the Project SPVs in relation to, among other things, compliance with and monitoring of O&M requirements. The O&M requirements include, among other things, permitting the safe, smooth and uninterrupted flow of traffic, undertaking routine maintenance, including repairs of potholes, cracks, joints, drains, embankments, structures, markings, lighting, signage and other control devices, undertaking major maintenance in accordance with the relevant concession agreement, including but not limited to resurfacing, repairs to structures, and repairs and refurbishment of system and equipment and preventing, with the assistance of the concerned law enforcement agencies, any encroachments on, or unauthorized entry to the relevant Project. Failure to comply with these requirements could result in adverse consequences, including the Project SPVs being liable for compensating the relevant concessioning authorities for such breach or termination.

There are terms in the concession agreements which require the relevant concessioning authority's prior written approval before a Project SPV can create encumbrance or security interest over, or transfer its rights and benefits under, the respective concession agreement. There is no assurance that a concessioning authority will approve the actions of any Project SPV in time or at all. Even if approval from a concessioning authority is obtained, there is no assurance that the transfer of the rights and benefits under the respective concession agreement would have no adverse effect on the Unitholders. The restrictions and uncertainties impose constraints on the flexibility of the Trust to conduct its business and its financial conditions and results of operations may be adversely affected.

In addition, the concession agreements also contain clauses which will allow a concessioning authority to step in, in place of a Project SPV, in the event of a suspension or termination of the concession agreement. Further, in case of Project SPVs that have been granted concessions by the NHAI, according to the circular dated January 29, 2014 issued by the NHAI, the NHAI or the lenders of such Projects may substitute a Project SPV in the event that the Project SPV is in "financial default"; that is, for example, if the NHAI or the lenders of such Project have a reason to believe that a Project SPV is likely to face financial distress and is likely to default in its obligations under the terms of the relevant

concession agreement. The NHAI may also impose a penalty on the defaulting Project SPV.

The concession agreements also require the Project SPVs to indemnify the concessioning authorities, including for losses arising out of, or with respect to, the failure of the concessionaire to comply with applicable laws and permits, payment of taxes payable by the concessionaire or the non-payment of amounts arising out of materials or services provided to the relevant concessioning authority, among others.

Further, the GoI may, on the occurrence of certain events, suspend toll collection at any of the Projects. For example, as part of the GoI's demonetisation exercise, the GoI announced a toll exemption for all vehicles across all toll plazas from November 9, 2016 to December 2, 2016. Further, during the national lockdown imposed from March 24, 2020 in India on account of the COVID-19 pandemic, the Concessioning Authorities suspended toll collection for a certain period. The national lockdown and these instances resulted in huge revenue loss and other work constraints (such as availability of labour and spare parts) for entities operating in the road sector, including the Project SPVs. There is no assurance that if such situations occur in the future, to the extent the Trust faces any loss of revenue, it would be able to claim for such loss of revenue and any such claim would be successful.

In the event that any change in law under a Project's concession agreement imposes a financial burden on the affected Project SPV, the Project SPV may be entitled to approach the relevant concessioning authority to amend its concession agreement or seek compensation such that the Project SPV is placed in its former financial condition. If compensation is sought under such provisions in the concession agreements, there is no assurance that the affected Project SPV will receive such compensation from the relevant concessioning authority in the amounts claimed, in a timely manner, or at all. This could have an adverse effect on the Trust's financial performance.

The form of the concession agreement has evolved in the previous decade and there is limited guidance available on the interpretation of the terms and conditions contained in such concession agreements. In addition, certain terms of the concession agreements are ambiguous and untested and accordingly, their interpretation by the relevant concessioning authorities may differ from that of the Project SPVs. In the event that the interpretation of the concession agreements is unfavourable to the Project SPVs, their business, financial condition and results of operations may be adversely affected.

15. Lower than expected returns on our investment in our Projects may adversely affect our financial results.

In our annuity BOT projects or BOT projects with an annuity component, our annuity revenue depends on the fixed amounts paid to us by our government clients. The amount of annuity is not necessarily linked to our actual costs of construction and may only be deducted pursuant to the relevant concession agreements. In our toll-based projects or projects with a toll component, our toll revenue depends on the tolling rates set by the relevant concessioning authority in accordance with the relevant concession agreements and the actual traffic volume using our roads. Our decision to undertake BOT road projects is largely based on our estimate of our expected toll revenue, which in turn partly based on our estimate of the traffic volume using our roads.

Traffic volume may be affected by a number of factors beyond our control, including general economic conditions, alternate routes, alternate means of transportation, location of toll plazas, weather conditions, demographic changes, fuel prices, reduction in commercial or industrial activities in the regions served by the roads and natural disasters. Thus the actual traffic volume may be lower than our estimate. Decreases in traffic volume, could result in a significant loss of our toll revenue In addition, our concession agreements typically limit and regulate increases in tolling rates, Usually, the NHAI sets the applicable tolling rates and we may not be able to increase tolling rates to cover increases in our operational costs.

In some of our concession agreements, adjustments of annuities are linked to the movements of inflation indices in a relevant year. However, there are no provisions in our concession agreements protecting us against increases in interest rates or cost of raw materials. Our lenders may have the right to periodically adjust our interest rates and our applicable interest rates may increase based on their review of our credit profile and perceived risks in our operations. Our operational costs may also increase substantially during the operation of our BOT projects due to shortage of raw materials or substantial increases in prices of raw materials required for operation and maintenance beyond the permitted scope of adjustment due to occurrence of certain events under the relevant provisions of the concession agreements. Many factors causing such adverse changes are beyond our control and we are usually not able to demand matching increases in our tolling rates over and above fixed increase of 3% and 40% of variation in WPI or annuities. Even if we invoke the inflation adjustment clauses in some of our concession agreements, the increase may not be adequate to offset the negative impact of increases in interest rates or cost of raw materials.

Under the relevant concession agreements, our Project SPVs have rights to construct and operate the road projects exclusively for fixed periods of time and we receive annuities and/or tolls, as the case may be, for the use of our roads. However, we may be faced with competition from new roads developed by State Governments, which are not within our control. For example, MPRDC has the right to construct competing roads after a prescribed period of time, pursuant to the terms of the concession agreements. State Governments may not always charge for the use of these roads. There can be no assurance that our road projects will compete effectively against such roads that connect the same locations.

Any material decrease in the actual traffic volume as compared to our forecasted traffic volume could have a material adverse effect on our cash flows from our tolling projects, which in turn can adversely affect our business, prospects, financial condition and results of operation.

As our BOT projects often require significant capital investment with potential returns spread over a long period of time, inadequate toll revenues and annuities collected from our projects may result in a low return or even loss on our investment, which may adversely affect our liquidity, business, financial condition and results of operation.

16. We may be subject to inflation and interest rate risks.

In some of our concession agreements, our income from operation and maintenance is linked with the movements of inflation indices in a relevant period and income from interest on the balance completion cost is linked with RBI Bank Rate. However, there are no specific provisions in our concession agreements protecting us against increases in interest rates or cost of raw materials except to the limited extent of rates linked to inflation and the RBI Bank Rate. Our lenders may have the right to periodically adjust our interest rates and our applicable interest rates may increase based on their review of our credit profile and perceived risks in our operations. Our operational costs may also increase substantially if the O&M Contractor fails to perform its duties as per the O&M Agreements. Many factors causing such adverse changes are beyond our control and we are usually not able to demand matching increases in our tolling rates or annuities. Even if we invoke the inflation adjustment clauses in some of our concession agreements, the increase may not be adequate to offset the negative impact of increases in interest rates or O&M costs.

17. The Projects' revenues from tolls are subject to significant fluctuations due to changes in traffic volumes and the mix of traffic and a decline in traffic volumes could adversely affect their business prospects, financial condition, results of operations and their ability to make distributions.

Two of the Projects are exclusively toll based and 10 Projects are a mixture of annuity and toll payments. Toll revenues depend on toll receipts and are affected by changes in traffic volumes and the mix of traffic. Traffic volumes are directly or indirectly affected by a number of factors, many of which are outside the relevant Project SPVs' control, including toll rates, fuel prices, the affordability of automobiles, the quality, convenience and travel time on alternate routes and the availability of alternate means of transportation, including rail networks and air transport. Moreover, such Project SPVs' cash flows are affected by seasonal factors, which may adversely affect traffic volumes. India experiences monsoon rains during the period from June or July until September or October each year, which can affect the volume of traffic on such Projects. During such periods of curtailed activity, such Project SPVs may continue to incur operating expenses but receive reduced toll revenues. Such fluctuations may adversely affect the Project SPVs' business, financial condition or results of operations.

Traffic volumes are also influenced by the convenience and extent of a toll road's connections with other parts of the state and national highway and toll road network, as well as the cost, convenience and availability of other means of transportation and alternative routes. There can be no assurance that future changes affecting the road network in India, through road additions and closures or through other traffic diversions or redirections, or the development of other means of transportation, such as air or rail transport, will not adversely affect traffic volume on toll roads.

The toll-linked Projects may experience high traffic levels and congestion at certain times of the day or on certain days of the week. Although such Project SPVs may consider possible solutions and take appropriate steps in order to ease traffic flow and reduce congestion, there can be no assurance that the saturation problems will be resolved under conditions that are economically satisfactory to such Project SPVs. This could also lead to user dissatisfaction and could potentially reduce traffic volume.

18. Leakage of the tolls collected on the toll-linked Projects may adversely affect the relevant Project SPVs' revenues and earnings.

Two of the Projects are exclusively toll based and 10 Projects are a mixture of annuity and toll payments. Toll receipts are primarily dependent on the integrity of toll collection systems. The Project SPVs that have a toll component generate revenues from the Projects through the collection of tolls. On Indian toll roads, each motorist generally pays a one-time entry tariff to the toll operator at the point of entry to the toll road based on the average trip distance calculated for all users of the toll road. Such Project SPVs employ toll management software to monitor their operations.

Further, there have been occasions where political parties and local communities protest against the collection of tolls on roads and some of these occasions have turned violent and resulted in the destruction of toll collection booths. During such an event, a Project SPV could have a limited ability to collect tolls. Under the terms of the Project SPVs' concession agreements, in the event that the concession agreement is terminated by either party as a result of an occurrence of a political event, the relevant concessioning authority is required to make payments to the affected Project SPV as a result of such an event; however there is no assurance that concessioning authorities will do so in a timely manner or at all.

The level of revenues derived from the collection of tolls may be affected by reduction in toll rates as determined by the

concessioning authorities. Toll revenues may also be affected by leakage through toll evasion, theft, fraud or technical faults in the toll systems or forced violations by users of toll roads. At times, there may be a need to allow users of tolls roads to pass through without paying applicable tolls due to heavy traffic build up, or there may be an inability to collect tolls due to political protests or agitations relating to tolling. In addition, in certain circumstances, the governmental authorities or Indian courts could seek to suspend toll collection for or during certain periods, in full or in part, which suspension would result in a reduction in revenues. Further, while there are provisions under the concession agreements to compensate the Project SPVs, there may be a considerable delay in the receipt of such compensation. Although the Project SPVs have systems in place to minimise leakage through fraud and pilfering, any significant failure to control leakage in toll collection systems could have an adverse effect on the business, prospects, financial condition and results of operations of the Project SPVs.

19. The Project SPVs have a limited period to operate the Projects as the concession periods granted to the Project SPVs are fixed.

Each of the concession agreements entered into by the Project SPVs provides for a fixed term concession, at the end of which the operation of the relevant Project will be transferred to the relevant concessioning authority. For details of the concession periods of the Project SPVs, please see the section entitled "*Business*" on page 144. We have in the past sought extensions for the concession period of the Suryavanshi Infra Project and DTNTL Projects, and such extensions were granted by MPRDC. However, there is no assurance that concessioning authorities will grant any similar extensions in the future. In addition, there can be no assurance that the Trust will be able to successfully acquire new assets to replenish its portfolio once the existing concession agreements expire. Further, if the operating periods of the Projects are shortened or disrupted or the Project SPVs' rights to operate the Projects are terminated before the expiration of the concessions, the business, financial condition and results of operations of the Trust may be adversely affected.

20. The concession agreements may be terminated prematurely under certain circumstances.

Under the terms of our concession agreements, we have obligations to maintain our BOT road projects in good working order and maintain the roads periodically. Our BOT road projects require repair or maintenance due to natural disasters, accidents and other factors beyond our control. The concessioning authorities will periodically carry out tests through one or more engineering firms to assess the quality of roads and their maintenance. If we fail to maintain the roads to the standards set forth in the relevant concession agreements, the concessioning authorities may impose penalties, withhold annuity payments and demand remedies within cure periods. If we fail to cure our defaults in a timely manner within such time as may be prescribed under the concession agreement, our concession agreements may be terminated.

The contracts for our BOT road projects typically specify certain operation and maintenance standards and specifications to be met by us while undertaking our operation and maintenance activities and develop a maintenance manual. These specifications and standards require us to incur operation and maintenance costs on a regular basis. The operation and maintenance costs of our projects may increase due to factors beyond our control, including but not limited to:

- standards of maintenance or road safety applicable to our projects prescribed by the relevant regulatory authorities;
- we may be required to restore our projects in the event of any landslides, floods, road subsidence, other natural disasters accidents or other events causing structural damage or compromising safety;
- unanticipated increases in material and labour costs, higher axle loading, traffic volume or environmental stress leading to more extensive or more frequent heavy repairs or maintenance costs. The cost of major repairs may be substantial and repairs may adversely affect traffic flows;
- increase in electricity or fuel costs resulting in an increase in the cost of energy; or
- other unforeseen operational and maintenance costs.

Any failure by a Project SPV to maintain the relevant Project according to the terms of the concession agreement will entitle the concessioning authorities to terminate the concession agreement or take remedial actions at the risk and cost of the Project SPV and recover such cost and damages from the Project SPV from the escrow account as if such costs and damages were O&M expenses.

If a concession agreement is terminated by the concessioning authority due to a default by a Project SPV, the Project SPV may be exposed to additional liability as it is obliged to repair or rectify, at its own cost, any defects or deficiencies identified by the independent engineer of the Project for a period specified in the concession agreement upon such termination. In addition, the termination payment by the concessioning authority due to a default by a Project SPV, will be calculated according to the terms of the concession agreement, which may be less than the actual cost incurred by a Project SPV on its Project. Consequently, not only would the Project SPV recover less than the costs incurred, but such an occurrence would also have an adverse effect on the Trust's financial performance. Unless otherwise approved by the concessioning authorities, the termination payments to the Trust, pursuant to a default by a Project SPV, may be contested by the concessioning authorities on the ground of the same being in nature of loans/advances by the shareholders of the Project SPV.

In addition, our operations may be adversely affected by interruptions or failures in the technology and infrastructure systems that we use to support our operations, including toll road collection and traffic measurement systems. Furthermore, accidents and natural disasters may also disrupt the construction, operation or maintenance of our projects and concessions. Any significant increase in operations and maintenance costs beyond our budget and any failure by us to meet quality standards may reduce our profits and could expose us to regulatory penalties and could adversely affect our business, financial condition and results of operations.

If a concession agreement is terminated by the concessioning authorities due to a default by a Project SPV, or by the Project SPV due to a default by the concessioning authorities, such Project SPV is entitled to termination payments or otherwise from the concessioning authorities in accordance with the terms of the relevant concession agreement. The loans/advances from the shareholders (including the Trust) may be for a maturity term that exceeds the maturity term of the original facilities obtained from the project lenders. There can be no assurance that the concessioning authorities will recognize such amounts as outstanding after the term of the original facilities obtained by the Project SPVs from their respective senior lenders. There can also be no assurance that the concessioning authorities will pay the termination payments promptly or at all or that any termination payments will be adequate to enable us to recover our investments or returns in the relevant Project SPVs.

If any concession agreement is terminated prematurely, the business, financial condition and results of operations of the relevant Project SPV could be adversely affected. Please see the section entitled "*Summary of Key Agreements*" on page 216.

21. The Project SPVs, which are responsible for the operation and maintenance of the Projects under the respective concession agreements, may be directed by the relevant concessioning authority to undertake, and the Project SPVs will be obliged to perform, additional construction work.

Under the terms of the concession agreements, the Project SPVs are responsible for the operation and maintenance of the Projects during the applicable concession periods. A concessioning authority may require a Project SPV to provide additional work and services not included in the original scope of the concession agreement. For example, if a Project SPV is required to construct fast tag lanes, in addition to the construction, it needs to facilitate electronic toll lanes and build weigh-in motion equipment to check for the overloading of vehicles, among other things. There is no assurance that the money spent on complying with a change of scope order will be reimbursed in a timely or complete manner.

22. Newly constructed roads or existing alternative routes may compete with the Projects and result in the diversion of the vehicular traffic and a reduction of tolls that the Project SPVs can collect.

Two of the Projects are exclusively toll based and 10 Projects are a mixture of annuity and toll payments. Under the terms of the concession agreements entered into by the Project SPVs with a toll component, the relevant concessioning authority is entitled to construct an additional tollway for use by traffic which may serve as alternate routes to the Projects after the expiry of determined time periods, depending on the terms of the concession agreements. Notwithstanding that the concession period will accordingly increase, the development of such an additional tollway during the subsistence of the concession agreement could compete with the relevant Project and attract users (who would have otherwise used the Project) to use the additional tollway and divert vehicular traffic from the Projects, thereby reducing toll collections by the Project SPVs which could have an adverse effect on their business, financial condition or results of operations. Please see the section entitled "*Summary of Key Agreements*" on page 216.

Further, in case of the JDTL Project, as per the Traffic Report, the Delhi – Mumbai Expressway route is about 90 kilometres shorter than the route via the JDTL Project. There is no assurance that once completed, some of the freight vehicles currently using the JDTL Project for travelling between Delhi and beyond to Mumbai and surroundings, will not find the Delhi – Mumbai Expressway attractive and the Delhi – Mumbai Expressway will not divert the traffic on the JDTL Project.

There is no assurance that any alternative roads built or improved will not compete with the Projects and have an adverse effect on the Trust's business, financial condition, revenues and operations.

23. An inability to obtain, renew or maintain the required statutory and regulatory permits and approvals or to comply with the applicable laws may have an adverse effect on the business of the Project SPVs.

The Project SPVs require certain approvals, licenses, registrations and permissions under regulations, guidelines, circulars and statutes regulated by the Indian regulatory and government authorities to be obtained at various stages and by a number of parties. There can be no assurance that the relevant authorities will issue these approvals or licenses, or renewals thereof, in a timely matter, or at all. In addition, the Project SPVs are required to comply with a wide variety of Indian laws and regulations. There can be no assurance that the Project SPVs are in compliance with such laws and regulations, have obtained all necessary approvals or that they will continue to obtain the necessary approvals or have

been and will continue to be in compliance with all applicable laws and regulations. In the event of any failure to obtain or renew the approvals or if there is a delay in the obtaining of such approvals, the business and financial condition of the Project SPVs could be adversely affected. Further, these permits, licenses and approvals could be subject to several conditions, and the Trust cannot assure investors that the Project SPVs have complied with all such conditions and will be able to continuously meet such conditions or be able to prove compliance with such conditions to the authorities. Any non-compliance may lead to cancellation, revocation or suspension of relevant permits, licenses or approvals, which may result in the interruption of the operations of the Project SPVs and may adversely affect the business, financial condition and results of operations of the Project SPVs.

Further, certain terms and conditions in the Project SPVs' concession agreements, financing agreements, and our other approvals require the concessioning authorities' prior written approval to be obtained for one or more of the following actions, among others:

- amendment, modification, or replacement by the Project SPV of any project agreements (including financing agreements) relating to the operation of the road asset to which the Project SPV is a party if the amendment, modification, or replacement of such agreement increases or imposes any financial liability or obligation on the concessioning authorities;

- the creation of any encumbrance or security interest over, or transfer of rights and benefits of the Project SPVs under, the concession agreements or any project agreements; and

- the selection or replacement of any engineering, procurement and construction contract, operation and maintenance contractor and execution of the engineering, procurement and construction agreements and the operation and maintenance agreements.

The concession agreements of the Project SPVs also require the submission to the concessioning authorities, for its review and comments, all project agreements to which a Project SPV is a party prior to entry, amendment, or replacement of such agreements, even if such agreements do not affect the financial liability or obligations of the concessioning authorities.

The restrictions described above may impose constraints on our flexibility to conduct our business. Further, if as a result of these restrictions, we are unable to pursue a favourable course of action or to respond to an unfavourable event, condition, or circumstance, then our business, financial condition and results of operations may be materially and adversely affected.

24. The Investment Manager is in the process of divesting a subsidiary, Shrem Airport Hotels Private Limited.

The Investment Manager is in the process of divesting of its subsidiary, Shrem Airport Hotels Private Limited, to Shrem Ajanta Infrastructure Private Limited. In this regard, a sale agreement has been executed between the Investment Manager and Shrem Ajanta Infrastructure Private Limited. The completion of the divestment is pending execution of certain documentation. There can be no assurance that the divestment will be completed in a timely manner, or at all.

25. Failure to comply with and changes in, safety, health and environmental laws and regulations in India may adversely affect the business, prospects, financial condition and results of operations of the Project SPVs.

The Project SPVs are required to adhere to various environmental, health and safety laws and regulations and various labour, workplace and related laws and regulations in India as per the requirements of the concession agreements they have entered into. Please see the section entitled "*Regulations and Policies*" on page 409. If any of the Project SPVs fail to meet environmental, health or safety requirements, they may also be subject to administrative, civil and criminal proceedings by government authorities, as well as civil proceedings by environmental groups and other individuals, which could result in substantial fines and penalties against the Project SPVs as well as orders that could limit or halt the operations of the Project SPVs. The Trust cannot assure investors that the Project SPVs have been and will continue to be in compliance with all environmental, health and safety and labour laws and regulations.

Further, any changes in, or amendments to, these standards or laws and regulations could further regulate the operations of the Projects and could require the Project SPVs to incur additional, unanticipated expenses in order to comply with these changed standards. The scope and extent of any new environmental, health and safety regulations, including their effect on the operations of the Projects and the cash flows of the Project SPVs, cannot be predicted with certainty. The costs and management time required to comply with these requirements could be significant. The measures taken in order to comply with these new laws and regulations may not be deemed sufficient by government authorities and compliance costs may significantly exceed estimates.

There can be no assurance that the Project SPVs will not become involved in future litigation or other proceedings or be held responsible in any such future litigation or proceedings relating to safety, health and environmental matters in the future. Clean-up and remediation costs, as well as damages, payment of fines or other penalties, other liabilities and

related litigation, could adversely affect the business, prospects, financial condition and results of operations of the Project SPVs.

26. The current insurance coverage for the Projects may not protect the Project SPVs from all forms of losses and liabilities associated with their businesses.

Road infrastructure development project contracts are subject to various risks including:

- political, regulatory and legal actions that may adversely affect a project's viability;
- changes in government and regulatory policies;
- design and engineering defects;
- breakdown, failure or substandard performance of equipment;
- improper installation or operation of equipment;
- labour disturbances;
- terrorism and acts of war;
- inclement weather and natural disasters, including earthquakes, flooding, tsunamis and landslides; and
- adverse developments in the overall economic and capital financing environment in India.

The Project SPVs have in place various project-specific insurance policies covering the Project SPVs against material damage, terrorism and debris removal and all-risk policies against risk of fire and natural calamities. For further details, please see the section entitled "*Business*" on page 144. However, there can be no assurance that all risks are adequately insured against or that the Project SPVs will be able to procure adequate insurance coverage at commercially reasonable rates in the future. Natural disasters in the future may disrupt traffic, thereby adversely affecting toll collections and causing significant disruption to the operations of the Projects, and causing damage to the Projects and the environment that could have an adverse impact on the business and operations of the Project SPVs. In addition, not all of the above risks may be insurable on commercially reasonable terms, or at all. For example, the Project SPVs are required, under the concession agreements, to maintain the quality of the roads and to repair the roads in the event of damage to the roads on account of accidents or other reasons. Accordingly, there may be significant expenditure incurred by a Project SPVs to repair damaged roads and maintain the Projects in good condition, particularly if the damage is major, unanticipated or uninsured. The insurance obtained in relation to the Project SPVs may not provide adequate coverage in certain circumstances and is subject to certain deductibles, exclusions and limits on coverage. In addition, these insurance policies are subject to annual review by insurers, and there can be no assurance that they will be renewed on similar or otherwise acceptable terms, if at all. To the extent that the Project SPVs suffer any damage or loss which is not covered by insurance, or exceeds the insurance coverage, the loss would have to be borne by the Project SPVs. Further, the Project SPVs have, from time to time, insurance claims pending, with respect to its insurance policies. The proceeds of any insurance claim may also be insufficient to cover rebuilding costs as a result of inflation, changes in regulations regarding infrastructure projects, environmental and other factors. The resulting costs could have an adverse effect on the Trust's business, prospects, financial condition or results of operations and no assurance can be given that losses in excess of insurance proceeds will not occur in the future.

27. The cost of repairing and refurbishing existing equipment for operating, maintaining and monitoring the Projects could be significant and could adversely affect the results of operations, cash flows and financial condition of the Project SPVs.

Some of the equipment used by the Project SPVs at the Projects have pre-determined useful lives and the Project SPVs are required to repair or refurbish such equipment at periodical intervals, pursuant to the terms of the concession agreements. These obligations have been undertaken by the O&M Contractor pursuant to the O&M Agreements. There can be no assurance that such replacement or refurbishment will be undertaken in a timely or efficient manner by the O&M Contractor, and any increased costs to the Project SPVs as a result of such replacement or refurbishment by the O&M Contractor will not affect the profit margins of the Project SPVs and adversely affect their cash flows.

28. The business and financial performance of the Trust, the operations of the Projects and any future projects that the Trust may acquire, are significantly dependent on the policies of, and relationships with, various government entities in India and could be affected if there are adverse changes in such policies or relationships.

The operations of the Projects and any future projects that the Trust may acquire, are and will be significantly dependent on various central and state government entities, in terms of policies, incentives, budgetary allocations and other resources provided by these entities for the surface transportation industry, as well as the terms of the contractual arrangements, concessions and other incentives available from these government entities for the projects. Sustained increases in budgetary allocations by the GoI and various state governments for investments in the infrastructure sector, the development of structured and comprehensive infrastructure policies that encourage greater private sector participation and increased funding by international and multilateral development financial institutions in infrastructure projects in India have resulted in, and are expected to continue to result in, an increase in the amount of transportation infrastructure projects undertaken in India. Any adverse change in the focus or policy framework regarding infrastructure development or the surface transportation industry, of or change in the Trust's relationships with the GoI or various

government entities in India, could adversely affect the Projects, the opportunities for the Trust to secure new projects and the business, financial condition and results of operations of the Trust.

In addition, the projects in which government entities participate may be subject to delays, extensive internal processes, policy changes, changes due to local, national and internal political pressures and changes in governmental or external budgetary allocation and insufficiency of funds. Since government entities are responsible for awarding concessions and are parties to the development and operations of projects, projects are directly and significantly dependent on their support. Any withdrawal of support or adverse changes in their policies may lead to the agreements being renegotiated and could also adversely affect the financing, capital expenditure, revenues, development or operations relating to the Projects.

29. The Projects awarded to the Project SPVs may be subject to legal or regulatory action and the Project SPVs may be required to incur substantial expenses in defending any such actions and there is no assurance that the Project SPVs will be successful in defending such actions.

Certain Project SPVs are involved in legal proceedings which are pending at different levels of adjudication before various courts, tribunals and regulatory authorities. In addition, arbitration and litigation proceedings in India can be time consuming and the Project SPVs may have to incur costs and devote considerable resources towards defending the outstanding legal proceedings. There is no assurance that the legal proceedings will be decided in favour of the relevant Project SPVs. The legal proceedings may be decided against the relevant Project SPV or changes in the relevant laws and regulations may adversely affect the outcome of such legal proceedings.

Under the Project Implementation and Management Agreements, the Project Manager has indemnified the Trust against certain identified matters. Further, under the O&M Agreements, the O&M Contractor has provided also provided indemnities to the Project SPVs. There can be no assurance that the Trust will be able to successfully bring a claim and invoke the indemnity obligations against the Project Manager or the O&M Contractor. Any substantial costs incurred by the relevant Project SPV towards defending the outstanding legal proceedings or any unfavourable outcome in relation to such proceedings could have an adverse effect on the Trust's business, financial condition, results of operations and prospects. For more details, please see the section entitled "*Legal and other information*" on page 420.

30. The Project SPVs, parties to the Trust and their respective associates are involved in legal proceedings, which if determined against such parties, may have an adverse effect on the reputation, business and results of operations of the Trust.

Certain of the Project SPVs and associates of the Sponsor (also being associates of the Investment Manager and Project Manager) are involved in certain legal proceedings, including in relation to criminal matters, tax matters, civil and arbitration proceedings, which are pending at different levels of adjudication before various courts, tribunals and appellate authorities. There is no assurance that these legal proceedings and regulatory matters will be decided in favour of the respective entities. Decisions in any of the aforesaid proceedings adverse to the Project SPVs' interests may have an adverse effect on the Project SPVs' business, future financial performance and results of operations.

31. The Project SPVs depend on the O&M Contractor to operate and maintain the Projects. Any delay, default or unsatisfactory performance by the O&M Contractor could adversely affect the Project SPVs' ability to effectively operate or maintain the Projects.

The Project SPVs are obligated to maintain the Projects according to standards specified in the concession agreements. In this regard, the Project SPVs have entered into the O&M Agreements with the O&M Contractor. Under such O&M Agreements, the O&M Contractor is required to discharge the obligations of the Project SPVs under the concession agreements relating to operation and maintenance. The Project SPVs may have limited control over the timing or quality of services, equipment or supplies provided by the O&M Contractor. Inefficiencies or operational failures on the part of the Project SPVs or the O&M Contractor, as a result of defects in design, quality of construction or maintenance, could result in the Project SPVs incurring increased costs, loss of revenue and penalties, thereby causing adverse impact on the financial position of the Project SPVs.

The Project SPVs may also be exposed to risks relating to inability of the O&M Contractor or other sub-contractors to obtain requisite approvals for operation and maintenance activities, as well as risks relating to the quality of their services, equipment and supplies. In particular, failure to ensure the reliability and sustainability of toll collectors who are required to staff the toll booths continuously may adversely affect the overall net revenue.

In addition, under certain of the concession agreements, the consent of the concessioning authority is required for any selection or replacement of an operation and maintenance contractor. Any delay, default or unsatisfactory performance by the O&M Contractor or other sub-contractors could adversely affect the ability of the Project SPVs to effectively operate or maintain the Projects. This may result in increased costs as well as losses of revenue for the Project SPVs and thereby have an adverse effect on the financial condition and results of operations of the Trust.

32. The Project SPVs may be held liable for the payment of wages to the contract labourers engaged indirectly in the operations of the Trust.

The Project SPVs or the O&M Contractor may appoint independent contractors who, in turn, engage on-site contract labour to perform certain operations. Some of the Project SPVs have obtained the relevant registrations under the Contract Labour (Regulation and Abolition) Act, 1970 (the "**Contract Labour Act**") for certain locations where workmen are employed through contractors or agencies licensed under the Contract Labour Act. Although the Project SPVs do not engage the labourers directly, in the event of default by any independent contractor, the relevant Project SPV may be held responsible for any wage payments due to the labourers of such contractor. Any violation of the provisions of the Contract Labour Act by a Project SPV may result in penalties pursuant to the provisions of the Contract Labour Act. If any of the Project SPVs are required to pay the wages of contracted workmen and subjected to other penalties under the Contract Labour Act, the reputation, results of operations, cash flows and financial condition of the Trust could be adversely affected.

33. The results of operations of the Project SPVs could be adversely affected by strikes, work stoppages or increased wage demands by the employees of the O&M Contractor or other sub-contractors.

Under the O&M Agreements, the Project SPVs have engaged the O&M Contractor to conduct all O&M activities required under the respective concession agreements. In the event of any strikes or work stoppages by employees of the O&M Contractor or other sub-contractors due to increased wage demands or the inability of the O&M Contractor or other sub-contractors to either retain or recruit employees and sub-contractors with suitable credentials, the ability of the Project SPVs to collect tolls and maintain and operate the Projects will be adversely affected. In addition, any disruption to the services provided by the employees of the O&M Contractor or other sub-contractors will have an adverse effect on the operations of the Project SPVs. There can be no assurance that future disruptions will not be experienced due to disputes or other problems with the work force, which may adversely affect the business and results of operations of the Project SPVs.

34. The Project SPVs have experienced losses in previous years and any losses in the future could adversely affect the Trust's business, financial condition and the results of its operations, its ability to make distributions and the trading price of the Units.

The Project SPVs have experienced losses for one or more Fiscals in the last three Fiscals. Under the Companies Act, 2013, companies that do not generate "distributable profits" are not permitted to pay dividends. Accordingly, any Project SPV that fails to generate such distributable profits will not be permitted to pay dividends to the Trust which will adversely affect the Trust's ability to make distributions to Unitholders.

35. The Project SPVs may be required to pay additional stamp duty if any concession agreement is subject to payment of stamp duty as a deed creating leasehold rights, or as a development agreement.

Currently, concession agreements are treated as agreements which are not lease deeds and stamp duty ranging between ₹ 100 - ₹ 500 is typically paid for such concession agreements. Stamp duty authorities of certain states in India have issued notices to some concessionaires alleging inadequate stamp duty on the concession agreements executed between the concessionaires and the concessioning authorities. The stamp authorities allege that since the concession agreements relate to the letting of tolls to the concessionaires in the form of leases, or as development agreements, such agreements were required to be stamped as lease agreements or development agreements, as applicable. Accordingly, concession agreements that have not been stamped as such could be considered to be inadequately stamped. The High Courts of Allahabad and Madhya Pradesh have also held that a concession agreement ought to be stamped as a lease agreement and have upheld the imposition of a higher stamp duty on such agreements.

The stamp duty for a lease agreement or a development agreement ranges between 1.0% and 11.0% of the annual rent or premium payable or the market value of the property. Furthermore, stamp duty authorities may impose penalties for payment of inadequate stamp duty, which could extend up to 10 times the amount of the stamp duty payable.

If any of the concession agreements were determined to be inadequately stamped, then such agreements would be inadmissible as evidence in any legal action, until the deficient amount of stamp duty together with penalties, if any, was paid. Any deficiently stamped documents can also be impounded by any person having authority, by law or consent, to receive evidence or every person who is in-charge of a public office. Such persons impounding the deficiently stamped documents can either levy the appropriate stamp duty and penalty or send them to revenue authorities for that purpose. In addition, a person who signs an instrument chargeable with stamp duty will be subject to a fine if such instrument is not duly stamped.

Concession agreements contain change in law provisions which extend to a change in the interpretation or application of any Indian law by a court of record after the date of the concession agreement or the submission of the bid documents, as the case may be. Under the terms of the concession agreements, if any financial burden exceeding a certain prescribed threshold is imposed on a concessionaire as a result of such change in law, then it may be entitled to approach the

concessioning authority to amend the concession agreement or seek compensation to place the concessionaire in its former financial condition. However, relief under the concession agreements may be limited in nature. There can be no assurance that the relevant concessioning authority will consider additional stamp duty on the concession agreements as a change in law for which they will amend the concession agreement or agree to provide compensation to the concessionaire. Any disagreement between the relevant concessionaire and the concessioning authority may result in arbitration proceedings between the parties which could lead to increased costs.

Any imposition of a demand for payment of a higher stamp duty or imposition of penalty would increase the costs of the Projects, to the extent such additional costs are not recoverable from the concessioning authorities, and could adversely affect the business, results of operations and prospects of the Project SPVs.

36. We have entered into material related party transactions and may continue to do so in the future, which may potentially involve conflict of interests with the Unitholders.

The transactions resulting from the Project Implementation and Management Agreements, the Investment Management Agreement, the Trademark License Agreement and the Securities Purchase Agreements are related party transactions and their terms may not be deemed as favourable to us as if they had been negotiated solely amongst unaffiliated third parties. Furthermore, it is likely that we will enter into additional related party transactions in the ordinary course of our business. Such transactions, individually or in the aggregate, could have a material adverse effect on our business, prospects, financial condition, results of operations and cash flows. For additional details, please see the sections entitled "*Related Party Transactions*", "*Formation Transactions in Relation to the Trust*" and "*Parties to the Trust*" on pages 405, 19 and 94, respectively.

37. We do not own the "Shrem" trademark and logo. Our license to use the "Shrem" trademark and logo may be terminated under certain circumstances and our ability to use the trademark and logo may be impaired.

We do not own the "Shrem" trademark and "Shrem" logo. However, pursuant to the Trademark Licensing Agreement, Chhatwal Group Trust has granted to the Trust and the Investment Manager a license to use the aforementioned trademark and logo in relation to our business. For details of the terms of the Trademark License Agreement, please see the section entitled "*Related Party Transactions – Related Party Transactions – Present and On-going Related Party Transactions – Trademark License Agreement*" on page 407. The license granted to the Trust and the Investment Manager by Chhatwal Group Trust may be terminated under certain circumstances, including, failure to pay any due amounts within the specified period, any assignment for the benefit of creditors, admission in writing of the inability to pay debts as they come due, any action toward the dissolution or winding up of its affairs or the cessation or suspension of its activities, and material breaches of the Trademark License Agreement which remain uncured for a period of 30 days. Upon the termination of the trademark license, the Trust will be required to cease and desist from all further use of the aforementioned trademark and logo and shall not thereafter readopt or use any trademark, service mark, trade or corporate name or business title, or other indicium of origin, which consists of, or includes therein, the "Shrem" trademark and "Shrem" logo, or any portion thereof.

38. There may not be any eligible acquisition opportunities from third parties in the future, which may adversely affect the Trust's business, financial condition, results of operations and prospects.

The Trust aims to achieve portfolio growth through its acquisition growth strategy supported by future third party acquisitions. Accordingly, in respect of future acquisitions, the Trust will depend on third parties as a source of attractive acquisition opportunities. There can be no assurance that any such acquisition opportunities will materialise and the Trust will be able to avail of the same.

Eligible acquisition opportunities from third parties may also not materialise or the Trust may face increased competition from other InvITs and third parties, which may cause the price at which the Trust is able to acquire a given asset to not be financially desirable. An inability to grow through prudent acquisitions may adversely affect the Trust's business, financial condition and results of operations.

39. The Trust may not be able to successfully fund future acquisitions of new projects due to the unavailability of debt or equity financing on acceptable terms, which could impede the implementation of its acquisition strategy and negatively affect its business.

The Trust's total outstanding consolidated net debt shall be approximately ₹ 32,000 million after the Issue Proceeds are fully utilised and drawdown of the InvIT Loan is made, which will constitute approximately 49% of the value of the InvIT Assets upon completion of the Issue (net of cash and cash equivalents). Under the terms of the InvIT Regulations, the consolidated borrowings and deferred payments of the Trust, net of cash and cash equivalents, cannot exceed 49% of the value of the assets of Trust until certain conditions are met, and cannot exceed 70% of the value of the assets of Trust until, amongst others, the Trust has made six consecutive distributions to Unitholders. Further, if the consolidated borrowings of the Trust exceed 25% of the value of the assets of the Trust, further borrowings, up to 49% of the value of the assets of the Trust, would be subject to: (i) obtaining a credit rating from a credit rating agency registered with

SEBI; and (ii) approval of the Unitholders, in accordance with the InvIT Regulations and Trust Deed. There is no assurance that the relevant approvals can be obtained in a timely manner, or at all. The Trust will rely on debt and equity financing to expand its portfolio of projects through acquisitions, which may not be available on favourable terms or at all.

Debt financing to fund the acquisition of a project may not be available on short notice or may not be available on acceptable terms. Since the timing and size of acquisitions cannot be readily predicted, the Trust may need to be able to obtain funding on short notice to benefit fully from opportunities. However, under applicable law, the aggregate consolidated borrowings and deferred payments net of cash and cash equivalents of the Trust cannot exceed 49% of the value of its assets until, amongst others, the Trust has made six consecutive distributions to Unitholders. In addition, the level of indebtedness of the Project SPVs may affect the Trust's ability to borrow without prior Unitholders' approval.

Restrictions imposed by the Reserve Bank of India may limit the Trust's ability to borrow overseas for projects under development and hence could constrain its ability to obtain financing on competitive terms and refinance existing indebtedness. In addition, there can be no assurance that any required regulatory approvals or borrowing in foreign currencies will be granted to the Trust without onerous conditions, or at all.

The Trust may also fund the consideration (in whole or in part) for future acquisitions through the issuance of additional Units. Such issuances may result in the dilution of the interests in the Trust held by existing Unitholders. The Trust may not be able to complete the issuance of the required number of Units on short notice or at all due to a lack of investor demand for the Units at prices that it considers to be in the interests of then-existing Unitholders. As a result of a lack of funding, the Trust may not be able to pursue its acquisition strategy successfully. Potential vendors may also view the prolonged time frame and lack of certainty generally associated with the raising of equity capital to fund any such purchase negatively and may prefer other potential purchasers.

Debt financing may increase the Trust's vulnerability to general adverse economic and industry conditions by limiting its flexibility in planning for or reacting to changes in its business and its industry. The Trust will also be subject to the risk that certain covenants in connection with any future borrowings may limit or otherwise adversely affect its operations and its ability to make distributions to its Unitholders. Such covenants may also restrict the Trust's ability to acquire additional projects or undertake other capital expenditure by requiring it to dedicate a substantial portion of its cash flows from operations to interest and principal payments on its debt.

40. The use of additional leverage by the Investment Manager and the Trust are subject to risks.

Although the Investment Manager will seek to use leverage in relation to the Trust in a manner it believes is prudent and manage the Trust according to the Investment Objectives, the use of leverage will generally magnify both the opportunities for gain and risk of loss from any given asset. The cost and availability of leverage is variable and it is not always possible to obtain or maintain the desired degree of leverage. The use of leverage will also result in interest expense and other costs that will limit distributions made by the Trust or appreciation of its investments. An increase in interest rates may decrease the profitability of the Trust or any of the Project SPVs. A leveraged capital structure will increase a Project SPV's exposure to any deterioration in market conditions, competitive pressures, an adverse economic environment or rising interest rates, which could accelerate and magnify declines in the value of the Trust's investments. If a Project SPV is not able to generate adequate cash flow to meet debt service, the Trust may suffer a partial or total loss of capital invested in such Project SPV.

41. The actual performance of the Trust is subject to significant business, regulatory, and tax risks, uncertainties and contingencies that could cause actual results to differ materially from the forward-looking statements in this Draft Placement Memorandum.

This Draft Placement Memorandum contains forward-looking statements including the Projections of Revenue from Operations and Cash Flow from Operating Activities. These forward-looking statements are based on a number of assumptions, many of which are outside the control of the Trust. The assumptions underlying the Projections of Revenue from Operations and Cash Flow from Operating Activities are inherently uncertain and are subject to significant business, regulatory, and tax risks, uncertainties and contingencies that could cause actual results to differ materially from the forecast results. In addition, the revenue of the Trust is dependent on a number of factors, including the toll receipts from the Projects, which may decrease for a number of reasons. This may adversely affect the ability of the Trust to achieve the landmarks set out in the Projections of Revenue from Operations and Cash Flow from Operating Activities as some or all of the events and circumstances assumed may not occur as expected, or events and circumstances, which are not currently anticipated, may arise. While the Trust currently expects to meet the Projections of Revenue from Operations and Cash Flow from Operating Activities based on the assumptions set out in *'"Projections of Revenue from Operations and Cash Flow from Operating Activities"*, no assurance can be given that the assumptions will remain true or relevant and that the actual profit and cash flow will be achieved as forecasted or projected.

The Projections of Revenue from Operations and Cash Flow from Operating Activities should be reviewed in conjunction with the description of the business of the Project SPVs, *""Discussion and analysis by the Directors of the*

Investment Manager of the financial condition, results of operations and cash flows of the Portfolio Assets of the Trust" and other information contained in this Draft Placement Memorandum, including the information set forth in this *"Risk Factors""* section.

The Investment Manager does not intend to provide any updated or otherwise revised profit and cash flow forecast or profit and cash flow projection in the event that any assumptions differ from actual results.

42. The ability of the Trust to make or maintain consistency in distributions to Unitholders depends on the financial performance of the Project SPVs and their profitability.

The amount of future distributions, if any, will depend upon various factors including future earnings, financial condition, cash flows, working capital requirements and capital expenditures of the Project SPVs and the dividends, interest payments and repayments of indebtedness that are distributed to the Trust. The income earned from the Projects depends on, among other things, the amount of income generated from toll receipts and the level of operating and other expenses incurred. If the Projects do not generate sufficient operating profit, the income of the Trust, cash flows and ability to make distributions to Unitholders will be adversely affected.

The ability of the Project SPVs to make dividend payments is subject to, among other things, applicable laws and regulations in India and other contractual restrictions that they may be bound by and the ability of Trust to make distributions to the Unitholders will be subject to the terms and conditions of the InvIT Loan. Please see the section entitled " – *The Trust proposes to incur indebtedness, the terms of which impose restrictions and conditions which may adversely affect the Trust's ability to conduct its business*" on page 60. Under the terms of the InvIT Regulations, in the event any assets are sold by the Trust, the Holding Companies or any Project SPV or if the equity shareholding or interest in any Holding Company or Project SPV is disposed of by the Trust and the proceeds of such sale are proposed to be reinvested in another infrastructure asset, then the Trust is not obligated to make any distributions from such proceeds to the Unitholders.

In addition, the InvIT Regulations provide that the Trust must distribute not less than 90% of net distributable cash flows of each Project SPV in proportion of its holding in each of the Project SPV subject to the applicable provisions of the Companies Act, 2013. Further, a Holding Company must distribute 100% of the net distributable cash flows received from the underlying Project SPVs and must distribute 90% of the net distributable cash flows generated by the Holding Company. The distributions to the Unitholders must be declared and made not less than once every quarter in a financial year in each Fiscal and must not be made later than 15 days from the date of such declaration. There is no assurance that the Trust will be able to make distributions to the Unitholders or that such distributions will be consistent across various periods.

Further, the method of calculating the net distributable cash flows of a Project SPV is subject to change and any change in the applicable laws in India or elsewhere may limit the Trust's ability to pay or maintain consistency in distributions to Unitholders. There is also no assurance that the expansion of the Trust's portfolio of infrastructure assets will increase the Trust's cash flows and thereby result in an increase in the level of distributions to Unitholders over time.

43. It may be difficult for the Trust to dispose of its non-performing assets.

The Projects may be illiquid as a result of the current market condition or the limited residual life of the Projects, among other things. In the event that the Projects are performing poorly, the Trust may experience difficulty in realising, selling or disposing its shareholding in a Project at the appropriate time or at all or at an attractive price, and this may have an adverse effect on the business, prospects, financial condition and results of operations of the Trust.

44. The principal place of business of the Trust, being the registered office of the Investment Manager, is not owned by the Investment Manager. There can be no assurance that the present arrangements of the Investment Manager will not be terminated and the Trust will be able obtain other premises on lease on similar terms.

The principal place of business of the Trust, being the registered office of the Investment Manager, is not owned by the Investment Manager. The Investment Manager uses such premises, which is owned by Ms. Krishani Nitan Chhatwal (daughter of Mr. Nitan Chhatwal, the promoter of the Investment Manager). Any of these lease agreements can be terminated, and any such termination could result in any of these premises being shifted or shut down. Accordingly, there can be no assurance that the Trust will, in the future, be able to retain the present principal place of business or will be able to find alternate locations on similar terms.

RISKS RELATING TO OUR ORGANISATION AND STRUCTURE

1. The Trust is a newly settled trust with no established operating history and no historical financial information and, as a result, investors may not be able to assess its prospects on the basis of past records.

The Trust was set up on December 31, 2020 under the provisions of the Indian Trust Act, 1882 and it is registered as an

infrastructure investment trust in accordance with the InvIT Regulations. The Trust will acquire the Project SPVs immediately prior to the Closing Date. Accordingly, the Trust does not have any operating history or historical financial information by which its past performance may be judged. This could make it difficult for investors to assess the likely performance of the Trust. There can be no assurance that the Project SPVs will be able to generate sufficient cash flows from the operations of the InvIT Assets to make distributions to Unitholders or that such distributions will be as anticipated with those set out in the section entitled *"Projections of Revenue from Operations and Cash Flow from Operating Activities"* on page 524.

2. The Trust must maintain certain investment ratios which may pose additional risks.

Pursuant to the InvIT Regulations, we are required to invest not less than 80% of the value of our assets in eligible infrastructure projects as defined under the InvIT Regulations, such as the Project SPV. In addition, we must not invest more than 20% of the value of our assets in certain financial instruments prescribed under the InvIT Regulations.

Additionally, if the aggregate consolidated borrowings of the Trust, the Holding Companies and the Project SPVs, net of cash and cash equivalents exceed 25% of the value of the assets of the Trust, for any further borrowings up to 49% of the value of the assets of the Trust, we are required to adhere to specific conditions, such as obtaining a credit rating and seeking Unitholder approval. For any further borrowings beyond 49% of the value of the assets of the Trust, we are required to comply with specific conditions prescribed under the InvIT Regulations, which include amongst others, obtaining a credit rating of "AAA" or equivalent from a credit rating agency registered with SEBI, prior approval from at least 75% of the Unitholders, and demonstrating a track record of at least six distributions on a continuous basis post listing of the Units, in the years preceding the financial year in which the enhanced borrowings are proposed to be made. The aggregate consolidated borrowings and deferred payments, net of cash and cash equivalents of the Trust, the Holding Companies and the Project SPVs cannot exceed 70% of the value of the assets of the Trust.

If these conditions are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager must inform the Trustee and ensure that these conditions are satisfied within six months of such breach (or within one year with Unitholder approval). Failure to comply with these conditions may present additional risks to us, including divestment of certain assets, delisting and other penalties, which could have a material, adverse effect on our business, financial condition and results of operations.

3. Changes in government regulation could adversely affect our profitability, prospects, results of operations and ability to make distributions to our Unitholders.

Regulatory changes in India, particularly in respect of the InvIT Regulations and other taxation legislations such as the Finance Act, 2020, could expose us to greater tax liability than what our financial projections assume. The application of various Indian sales, value-added and other tax laws, rules and regulations to our services, currently or in the future, may be subject to differing or stricter interpretation by applicable authorities, which could result in an increase in our tax payments (prospectively or retrospectively) and/or subject us to penalties, which could affect our business operations and affect our ability to make distributions to our Unitholders. The InvIT Regulations also require us to maintain certain investment ratios, including the requirement that not less than 80% of the value of our assets should be eligible infrastructure projects, in accordance with Regulation 18(4) of the InvIT Regulations, which may prevent us from acquiring additional assets to achieve our growth strategy.

4. We depend on the Investment Manager, the Project Manager and the Trustee to manage our business and assets, and our financial condition, results of operations and cash flows and our ability to make distributions may be harmed if the Investment Manager, Project Manager or the Trustee fail to perform satisfactorily. The rights of the Trust and the rights of the Unitholders to recover claims against the Project Manager, the Investment Manager or the Trustee may be limited.

The success of our business and growth strategy and the operational success of our assets will depend significantly upon the managers' satisfactory performance of these services. Our recourse against the Project Manager, the Trustee and Investment Manager is limited. The aggregate maximum liability of the Project Manager under the Project Implementation and Management Agreements in each financial year is limited to the fees payable to the Project Manager in such financial year in accordance with the terms of the Project Implementation and Management Agreements except in the event that such liability arises out of any gross negligence, wilful default, wilful misconduct or fraud on the part of the Project Manager, as determined by a court of competent jurisdiction. If the Trustee is required by the InvIT Regulations or any applicable law to provide information regarding the Trust or the Sponsor or the Unitholders, the investments made by the Trust and income therefrom and provisions of such presents, and complies with such request in good faith, whether or not it was in fact enforceable, the Trustee shall not be liable to the Unitholders or to any other party as a result of such compliance or in connection with such compliance. The Trustee is also not liable on account of anything done or omitted to be done or suffered by the Trustee in good faith in accordance with, or in pursuance of any request or advice of the Investment Manager. Further, the Trustee is not liable for any act or omission or (as the case may be) failing to do any act or thing which may result in a loss to a Unitholder (by reason of any depletion in the value

of the Project SPVs or otherwise), except in the event that such loss is a direct result of fraud, gross negligence or wilful default on the part of the Trustee or results from a breach by the Trustee of the Trust Deed, as determined by a court of competent jurisdiction. The liability of the Trustee shall be limited to the extent of the fees received by it, in all circumstances whatsoever except (a) in case of any negligence or misconduct or fraud on the part of the Trustee as may be determined by a court of competent jurisdiction, or (b) any failure on the part of the Trustee to protect the interests of the Unitholders. The Investment Manager's liability to Trustee, its directors, employees and officers for breach of its obligations under the Investment Management Agreement in each financial year is limited to the aggregate fees paid to the Investment Manager for the immediately preceding financial year under the agreement, except in the event that such liability arises out of any gross negligence, wilful default or misconduct or fraud of the Investment Manager, as determined by the competent court of jurisdiction. Further, the Investment Manager is not liable for any act or omission which may result in a loss to a Unitholder (by reason of any depletion in the value of the Project SPVs or otherwise), except in the event that such loss is a result of the Investment Manager's fraud or gross negligence or wilful default. Accordingly, the Unitholders may not be able to recover claims against the Project Manager, the Trustee or the Investment Manager.

If the management agreements were to be terminated or if their terms were to be altered, our business could be adversely affected, as the Trustee may not be able to immediately replace such services, and even if replacement services were immediately available, the terms offered or obtained with the new managers could be less favourable than the ones currently offered by the Investment Manager and the Project Manager.

5. Our success depends in large part upon the Investment Manager and Project Manager, the management and personnel that they employ, and their ability to attract and retain such persons.

Our ability to make consistent distributions to our Unitholders depends on the continued service of management teams and personnel of the Investment Manager and Project Manager. Each of the Investment Manager and Project Manager may face challenges in recruiting and retaining a sufficient number of suitably skilled personnel. Generally, there is significant competition for management and other skilled personnel in our industry in India, and it may be difficult to attract and retain the skilled personnel that the Investment Manager and Project Manager need for our operations. Furthermore, the Investment Manager and Project Manager may not be able to adequately re-deploy and re-train their employees to keep pace with evolving industry standards and changing customer preferences. The loss of key personnel of either of the Investment Manager or the Project Manager, may have a material adverse effect on our business, prospects, financial condition, results of operations and cash flows of the Trust.

6. The Investment Manager has limited experience and may not be able to successfully implement its investment strategy for and Investment Objectives of the Trust or to manage the Trust's growth effectively.

The combined experience of the directors and employees of the Investment Manager is nearly 90 years. However, none of the Investment Manager and its directors and employees has experience in investment management activities for an InvIT.

Further, there can be no assurance that the Investment Manager will be able to implement its investment strategy or Investment Objectives successfully or that it will be able to expand the portfolio of the Trust at all, or at any specified rate or to any specified size or make distributions as projected. The results of the operations of the Trust will depend on many factors, including but not limited to, its ability to operate and manage the Projects efficiently, changes in the regulatory framework, competition for assets or macro-economic condition. These factors will, in turn, affect the availability of further opportunities for the acquisition of road assets and the availability of finance to achieve leverage. The Trust will be relying on external sources of funding to expand its asset portfolio, which may not be available on favourable terms, or at all. Even if the Trust is able to successfully acquire additional road assets, portfolio growth and expansion could place significant demands on the management and administrative resources of the Investment Manager and the capital resources of the Trust and there can be no assurance that the Trust will be able to efficiently manage such assets and achieve its intended return on such acquisitions.

The Investment Manager can also stop acting as the Investment Manager by providing notice under the Investment Management Agreement or the Trust may replace the Investment Manager in accordance with the terms of the Trust Deed. There is no assurance that the financial performance of the Trust would not be affected upon the appointment of a new investment manager.

7. Upon completion of the Issue, the Sponsor may be able to exercise significant influence over activities of the Trust on which Unitholders are entitled to vote. The Sponsor's interests may be different from Unitholders.

Under the InvIT Regulations, upon completion of the Issue, the Sponsor must continue to own all of its Units for one year and must own 15% of the outstanding Units for three years from the date of listing of the Units, subject to the conditions specified in the InvIT Regulations. As a result, the Sponsor, may be able to control the outcome of matters

on which Unitholders are entitled to vote and for which the Sponsor is not prohibited from voting due to a conflict of interest. The interests of the Sponsor may be different from those of the Unitholders.

8. The Trust may be dissolved, and the proceeds from the dissolution thereof may be less than the amount invested by the Unitholders.

The Trust is an irrevocable trust registered under the Indian Registration Act, 1908 and it may only be extinguished: (i) if it is impossible to continue with the Trust or if the Trustee, on the advice of the Investment Manager, deems it impracticable to continue with us; (ii) on the written recommendation of the Investment Manager and upon obtaining the prior written consent of such number of the Unitholders as is required under the InvIT Regulations; (iii) if our Units are delisted from the Stock Exchange; (iv) if the SEBI passes a direction to wind up the Trust or the delisting of the Units; or (v) in the event our activities are rendered illegal. Should the Trust be dissolved, depending on the circumstances and the terms upon which our assets are disposed of, there is no assurance that our Unitholder will recover all or any part of its investment.

If a default is triggered under the financing documents the Trust is a party to, the Trustee will take steps to cure such default and/or to repay the affected lender by appropriate means, including divesting or liquidating the assets of the Trust or raising additional financing, in accordance with such financing documents and applicable laws. If such default is not cured, and the affected lender initiates proceedings against the Trust, the Trust will be terminated immediately in accordance with applicable laws. In the event of a termination of the Trust, the net assets which will be paid to the Unitholders will take into account the debt, liabilities and obligations of the Trust. There is no assurance that Unitholders will recover all or any part of their investments.

9. Information and the other rights of Unitholders under Indian law may differ from such rights available to equity shareholders of an Indian company or under the laws of other jurisdictions.

The Trust Deed and various provisions of Indian law govern the Trust's affairs. Legal principles relating to these matters and the validity of procedures, fiduciary duties and liabilities, and Unitholders' rights may differ from those that would apply to a company in India or a trust in another jurisdiction. Unitholders' rights and disclosure standards under Indian law may also differ from the laws of other countries or jurisdictions. For details, please see the section entitled "*Rights of Unitholders*" on page 430.

10. The Trust has a limited number of listed peers undertaking similar lines of business for comparison of performance and therefore investors must rely on their own examination of the Trust for the purposes of investment in the Issue.

As of the date of this Draft Placement Memorandum, there are a limited number of other infrastructure investment trusts listed on the Indian stock exchanges and, accordingly, the Trust is not in a position to provide a comparative analysis of its performance with many listed InvITs. Investors must rely on their own examination of the Trust for the purposes of investing in the Units.

11. Parties to the Trust are required to satisfy the eligibility conditions specified under Regulation 4 of the InvIT Regulations on an ongoing basis. We may not be able to ensure such ongoing compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee, which could result in the cancellation of the registration of the Trust.

Each of the Parties to the Trust is required to satisfy the eligibility conditions specified in the InvIT Regulations on an ongoing basis. These eligibility conditions include, among other things, that: (a) the Sponsor, Investment Manager and Trustee are separate entities; (b) the Sponsor has a net worth of not less than ₹ 1,000 million and has a sound track record in the development of infrastructure or fund management in the infrastructure sector; (c) the Investment Manager has a net worth of not less than ₹ 100 million and has not less than five years' experience in fund management or advisory services or development in the infrastructure sector or development in the infrastructure sector or the combined experience of the directors, partners and employees of the Investment Manager in fund management or advisory services or development in the infrastructure sector is not less than 30 years; (d) the Trustee is registered with the SEBI under Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993 and is not an Associate of the Sponsor or Investment Manager; and (e) each of the Sponsor, Investment Manager, Project Manager and Trustee are "fit and proper persons" as defined under Schedule II of the Securities and Exchange Board of India (Intermediaries) Regulations, 2008 on an ongoing basis. We may not be able to ensure such ongoing compliance by the Sponsor, the Investment Manager, the Project Manager and the Trustee, which could result in the cancellation of the registration of the Trust.

12. ***The regulatory framework governing infrastructure investment trusts in India is relatively new and the interpretation and enforcement thereof involve uncertainties, which may have a material adverse effect on the ability of certain categories of investors to invest in the Units, our business, financial condition and results of operations and our ability to make distributions to the Unitholders.***

Since their enforcement in 2014, the InvIT Regulations have been amended and supplemented with additional guidelines and circulars.

As the regulatory framework governing infrastructure investment trusts in India comprises a separate set of regulations, interpretation and enforcement by regulators and courts involves uncertainties. Furthermore, regulations and processes with respect to certain aspects of infrastructure investment trusts, including, but not limited to, follow-on public offers and bonus issues, the liabilities of the Unitholders, and the procedure for dissolution and delisting of infrastructure investment trusts have not yet been issued. For example, trust units may not be classified as "securities" under the Securities Contract Regulation Act, 1956, as amended, and infrastructure investment trusts are not "companies" or "bodies corporate" within the meaning of the Companies Act, 2013 and various SEBI regulations, including the Securities and Exchange Board of India (Buy-back of Securities) Regulations, 2018 and the Securities and Exchange Board of India (Substantial Acquisition of Shares and Takeovers) Regulations, 2011. Accordingly, the applicability of several regulations (including regulations relating to intermediaries, underwriters, merchant bankers, takeovers, insider trading and fraudulent and unfair trade practices) to the Trust is unclear. Further, it is unclear whether certain categories of investors that are currently permitted to invest in equity shares offered by Indian companies, may also invest in the Units in the Issue. Further, while the recently notified Securities and Exchange Board of India (Foreign Portfolio Investors) Regulations, 2019 ("**FPI Regulations**") which are effective from September 23, 2019 specify that foreign portfolio investors ("**FPIs**" as defined in the FPI Regulations) may invest in units of infrastructure investment trusts and an offshore derivative instrument may be issued overseas by a FPI that is categorised as a 'Category I foreign portfolio investor' under the FPI Regulations against "securities" held by it in India, as its underlying. Accordingly, the issuance of offshore derivative instruments overseas by FPIs against Units may not be permitted as Units may not be classified as "securities".

Infrastructure investment trusts operate in a relatively nascent regulatory environment. In addition, new costs may arise from audit, certification or self-assessment standards required to maintain compliance with new and existing InvIT Regulations. Such changes in regulation, interpretation and enforcement may have a material adverse effect on our business, financial condition and results of operations.

As we operate in a nascent and relatively unclear regulatory environment as an infrastructure investment trust, it is difficult to forecast how any new laws, regulations or standards or future amendments to the InvIT Regulations will affect infrastructure investment trusts and the road sector in India, and no assurance can be given that the regulatory system will not change in a way that will impair our ability to comply with the regulations, conduct our business, compete effectively or make distributions. Failure to comply with changes in laws, regulations and standards may have a material adverse effect on our business prospects, financial condition, cash flows and results of operations.

13. ***The reporting requirements and other obligations of infrastructure investment trusts post-listing are still evolving. Accordingly, the level of ongoing disclosures made to and the protection granted to our Unitholders may be more limited than those made to or available to shareholders of a company that has listed its equity shares upon a recognised stock exchange in India.***

The InvIT Regulations, along with the guidelines and circulars issued by the SEBI from time to time, govern the infrastructure investment trusts in India. However, as compared with the statutory and regulatory framework governing companies that have listed their equity shares or debt securities on recognised stock exchanges in India, the regulatory framework applicable to infrastructure investment trusts is relatively nascent and thus, still evolving.

Accordingly, the ongoing disclosures made to our Unitholders under the InvIT Regulations may differ from those made to shareholders of a company that has listed its equity shares on a recognised stock exchange in India in accordance with the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015. Further, the rights of our Unitholders may not be as extensive as the rights of shareholders of a company that has listed its equity shares on a recognised stock exchange in India, and accordingly, the protection available to our Unitholders may be more limited than those available to such shareholders.

14. ***The InvIT Regulations allow for sponsors of listed infrastructure investment trusts ("InvITs") to be declassified from the status of sponsors subject to certain conditions. There can be no assurance that our Sponsor will not exercise its ability to be classified as the Sponsor of the Trust.***

The InvIT Regulations, pursuant to amendments made in June 2020, permit sponsors of listed infrastructure investment trusts to be declassified from the status of sponsors subject to compliance with the following conditions:

(i). The units of the relevant InvIT should have been listed on the stock exchanges for a period of three years;
(ii). The unitholding of such sponsor and its associates taken together should not exceed 10.00% of the outstanding units of the relevant InvIT;
(iii). The investment manager of the relevant InvIT is not an entity controlled by such sponsor or its associates; and
(iv). approval of unitholders has been obtained in accordance with the InvIT Regulations.

There can be no assurance that in the future, our Sponsor, upon fulfilment of the aforementioned conditions or any other conditions that SEBI prescribes for declassifications of sponsors, will not exercise its ability to declassify itself from the status of our Sponsor.

15. It may be difficult for the Unitholders to remove the Trustee or the Investment Manager.

Under the InvIT Regulations, the Trustee or the Investment Manager cannot be removed without the prior approval of Unitholders where the votes cast in favour of the resolution shall not be less than one and a half times the votes cast against such resolution. Accordingly, the Unitholders may face difficulties in removing and replacing the Trustee or the Investment Manager. Further, under the InvIT Regulations, prior approval of SEBI is required for change in the Investment Manager of the Trust.

16. Unitholders will have no vote in the election or removal of Directors in the Investment Manager and will be able to remove the Investment Manager and Trustee only pursuant to a majority resolution.

The Investment Manager has the responsibility of managing the Trust.

Unitholders have no vote in the election or removal of Directors in the Investment Manager. Unitholders' recourse is the removal of the Investment Manager by way of a resolution where Unitholders holding at least 60% of the Units must vote in favour of the resolution. In comparison, the Companies Act, 2013 requires the removal of a director of a public company to be by way of an ordinary resolution approved by a simple majority.

Similarly, Unitholders may remove the Trustee only if they believe that the acts of the Trustee are detrimental to the interests of the Unitholders and by way of a resolution where the votes cast in favour of the resolution must meet the required percentage as set out in the InvIT Regulations. Further, the Investment Manager and the Trustee cannot be discharged until a suitable replacement is appointed in their place, and there can be no guarantees that a suitable replacement will be appointed, or that appointment will take place in a timely manner, or at all.

Accordingly, as opposed to shareholders removing a director of a public company, it may not be possible for Unitholders to remove the Investment Manager or the Trustee.

RISKS RELATING TO THE UNITS

1. The sale or possible sale of a substantial number of Units by the Sponsor in the public market following the lapse of its lock-in requirement as prescribed under the InvIT Regulations could adversely affect the price of the Units.

Under the InvIT Regulations, the Sponsor is required to hold a minimum of 15% of our Units for a minimum period of three years from the date of listing pursuant to this Issue and the balance of its unitholding in the Trust is required to be locked in for a period of one year from the date of listing of the Units.

The Units are proposed to be listed on NSE. If the Sponsor, following the lapse of either of the aforesaid lock-in periods directly or indirectly sells or is perceived as intending to sell a substantial number of its Units, or if a secondary offering of the Units is undertaken, the market price for the Units could be adversely affected.

2. No investors are permitted to withdraw or lower their Bids (in terms of quantity of Units or the Bid Amount) at any stage after submitting a Bid.

Pursuant to the InvIT Regulations and SEBI guidelines, investors are required to pay the Bid Amount on submission of the Bid, and are not permitted to withdraw or lower their Bids (in terms of quantity of Units or the Bid Amount) at any stage after submitting a Bid, notwithstanding adverse developments in international or national monetary policy, financial, political or economic conditions, our business, results of operations, or otherwise, at any stage after the submission of their Bids.

3. Under Indian law, foreign investors are subject to restrictions that limit their ability to transfer or redeem Units, which may adversely impact the trading price of the Units.

Under foreign exchange regulations currently in force in India, transfers of units between non-residents and residents are permitted, subject to certain exceptions, if they comply with the pricing and reporting requirements specified by RBI.

If a transfer of units is not compliant with such pricing or reporting requirements and does not fall under any of the exceptions specified by RBI, then RBI's prior approval is required.

Additionally, unitholders who seek to convert Indian rupee proceeds from a sale of units in India into foreign currency and repatriate that foreign currency from India require a no-objection or a tax clearance certificate from the Indian income tax authorities.

We cannot assure you that any required approval from RBI or any other Governmental agency can be obtained on any particular terms or in a timely manner, or at all.

Our Unitholders will not have the right to redeem or request the redemption of our Units while our Units are listed on the Stock Exchange. In terms of the InvIT Regulations, an infrastructure investment trust may redeem units only by way of a buyback or at the time of delisting of units and may be subject to additional conditions and restrictions under Indian regulations.

4. The Units have never been traded and the listing of the Units on the Stock Exchange may not result in an active or liquid market for the Units.

There is no market for the Units prior to the Issue and an active market for the Units may not develop or be sustained after the Issue. Moreover, the listing and quotation do not guarantee that a trading market for the Units will develop or, if a market does develop, the liquidity of that market for the Units. As the Units will be sold through a private placement in a Minimum Bid Size (₹ 260 million), there may be a lack of liquidity and a limited market for the Units. The price of the Units may be volatile, and investors may be unable to resell the Units at or above the Issue Price, or at all. Although it is currently intended that the Units will remain listed on the Stock Exchange, there is no guarantee of the continued listing of the Units. There is no assurance that the Trust will continue to satisfy the listing requirements for InvITs. Further, it may be difficult to assess the Trust's performance against domestic benchmarks.

5. Market and economic conditions may affect the market price and demand for the Units.

Movements in domestic and international securities markets, economic conditions, foreign exchange rates and interest rates may affect the market price of and demand for the Units. In particular, an increase in market interest rates may have an adverse impact on the market price of the Units if the annual yield on the price paid for the Units gives investors a lower return as compared to other investments.

6. There is no assurance that our Units will remain listed on the stock exchange.

Although it is currently intended that the Units will remain listed on NSE, there is no guarantee of the continued listing of the Units. Among other factors, we may not continue to satisfy the listing requirements of the Stock Exchange. Accordingly, Unitholders will not be able to sell their Units through trading on the Stock Exchange if the Units are no longer listed on the Stock Exchange. While the InvIT Regulations state that we must provide Unitholders with an exit prior to delisting, the specific mechanism of such delisting and related exit offer has not yet been finalised by the SEBI. Further, under the InvIT Regulations, we are required to maintain a minimum of five Unitholders (other than the Sponsor, its related parties and its associates) at all times after the listing of the Units pursuant to the Issue and certain minimum public holding requirements. Failure to maintain such minimum number of Unitholders or public holding may result in action being taken against us by the SEBI and the Stock Exchange, including the compulsory delisting of our Units.

7. The Issue Price of the Units may not be indicative of the market price of the Units after the Issue.

The Units may trade at prices significantly below the Issue Price after the Issue. The trading price of the Units will depend on many factors, including:

- the perceived prospects of our business and the road sector;
- differences between our actual financial and operating results and those expected by investors and analysts;
- changes in analysts' recommendations or projections;
- changes in general economic or market conditions;
- the market value of our assets;
- the perceived attractiveness of the Units against those of other equity or debt securities, including those not in the infrastructure industry;
- the balance of buyers and sellers of the Units;
- the future size and liquidity of the Indian infrastructure investment trust market;
- any future changes to the regulatory system, including the tax system, both generally and specifically in relation to Indian infrastructure investment trusts;
- the ability on our part to implement successfully its investment and growth strategies;

- foreign exchange rates; and
- broad market fluctuations, including weakness of the equity markets and increases in interest rates.

For these reasons, among others, the price of Units may fluctuate. To the extent that we retain operating cash flow for investment purposes, working capital reserves or other purposes, these retained funds, while increasing the value of its underlying assets, may not correspondingly increase the market price of the Units. Any failure on our part to meet market expectations with regard to future earnings and cash distributions may adversely affect the market price for the Units.

In addition, the Units are not capital-protected products and there is no guarantee that Unitholders can regain the amount invested. If the Trust is terminated or liquidated, it is possible that investors may lose all or a part of their investment in the Units.

8. Any future issuance of Units by us may dilute investors' Unitholding. The sale or possible sale of a substantial number of Units by the Sponsor or another significant Unitholder could adversely affect the price of the Units.

Where new Units are issued at less than the market price of the Units, the value of an investment in the Units may be affected. In addition, Unitholders who do not, or are not able to, participate in the new issuance of Units may experience a dilution of their interest in the Trust.

Further, under the InvIT Regulations, the Sponsor is required to hold a minimum of 15% of our Units for a minimum period of three years from the date of listing pursuant to the Issue and the balance of its unitholding in the Trust is required to be locked in for a period of one year from the date of listing of the Units. The Units are proposed to be listed on NSE. If the Sponsor, following the lapse of either of the aforesaid lock-in period directly or indirectly sells or is perceived as intending to sell a substantial number of its Units, or if a significant Unitholder other than the Sponsor directly or indirectly sells or is perceived as intending to sell a substantial number of its Units, the market price for the Units could be adversely affected.

9. Rights of Unitholders under Indian law may be more limited than under the laws of other jurisdictions.

Indian legal principles related to corporate procedures, directors' fiduciary duties and liabilities, and unitholders' rights may differ from those that would apply to a company in another jurisdiction. Unitholders' rights under Indian law may not be as extensive as Unitholders' rights under the laws of other countries or jurisdictions. Investors may have more difficulty in asserting their rights as unitholder in an Indian entity than as unitholder of a corporation in another jurisdiction.

RISKS RELATING TO INDIA

1. Our results may be adversely affected by the outbreak of the Novel Coronavirus ("COVID-19") and can be adversely affected by other future unforeseen events, such as adverse weather conditions, natural disasters, terrorist attacks or threats, future epidemics or pandemics or other catastrophic events.

Unforeseen events, such as adverse epidemics, pandemics, weather conditions, natural disasters, threatened or actual armed conflicts, terrorist attacks, efforts to combat terrorism or other catastrophic events can adversely impact our business. We cannot predict the affect any such events will have on our business, prospects, financial condition, results of operations, cash flows, future operations and performance; however, they could be material.

The World Health Organization declared COVID-19 outbreak a Public Health Emergency of International Concern on January 30, 2020, and a pandemic on March 11, 2020. The rapid and diffused spread of COVID-19 and global health concerns relating to this pandemic have had a severe negative impact on, among other things, financial markets, liquidity, economic conditions and trade and could continue to do so or could worsen for an unknown period of time. The extent to which the COVID-19 outbreak impacts our business, cash flows, results of operations and financial condition will depend on future developments, including the timeliness and effectiveness of actions taken or not taken to contain and mitigate the effects of COVID-19 both in India and internationally, which are highly uncertain and cannot be predicted. A rapid increase in severe cases and deaths where measures taken by governments fail or are lifted prematurely, may cause unprecedented economic disruption in India and in the rest of the world. The scope, duration and frequency of such measures and the adverse effects of COVID-19 remain uncertain and are likely to be severe.

If the outbreak of this virus, or any other similar outbreak, continues for an extended period, occurs again and/or increases in severity, it could have an adverse effect on economic activity in India, and could materially and adversely affect our business, financial condition and results of operations. Similarly, any other future epidemics/ pandemics in India or elsewhere could materially and adversely affect our business, prospects, financial condition, results of operations, cash flows, future operations and performance.

2. We are exposed to risks associated with the road sector in India.

We derive and expect to continue to derive in the foreseeable future, most of our revenues and operating profits from India. Changes in macroeconomic conditions generally impact the road industry and could negatively impact our business. Accordingly, our business is highly dependent on the state of development of the Indian economy and the macroeconomic environment prevailing in India. Since the use of our Projects, our expansion plans and future projects depend or will depend on macroeconomic factors that may negatively impact demand the development of road infrastructure projects in India, or the timely commencement of their operations could in turn have a material adverse effect on our growth prospects, business and cash flows. In addition, access to financing may be more expensive or not available on commercially acceptable terms during economic downturns. Any of these factors and other factors beyond our control could have a material adverse effect on our business, prospects, financial condition, results of operations and cash flows.

3. Our performance and growth are dependent on the factors affecting the Indian economy.

Our performance and the growth are dependent on the performance of the Indian economy, which, in turn, depends on various factors. The Indian economy has been affected by the recent global economic uncertainties, volatility in interest rates, currency exchange rates, commodity and electricity prices, adverse conditions affecting agriculture and various other macroeconomic factors.

Conditions outside India, such as a slowdown or recession in the economic growth of other major countries and regions, especially in U.S., Europe and China, have an impact on the growth of the Indian economy, and GoI policy may change in response to such conditions. While recent Indian governments have been focused on encouraging private participation in the industrial sector, any adverse change in policy could result in a further slowdown of the Indian economy. The rate of economic liberalisation could decrease, and specific laws and policies affecting foreign investment, currency exchange rates and other matters affecting investment in India could change as well. In the road sector, there can be no assurance that the GoI's engagement with and outreach to private sector operators, including the Trust, will continue in the future. A significant change in India's economic liberalisation and deregulation policies, in particular, those relating to the road sector, could disrupt business and economic conditions in India generally and our business in particular. In addition, adverse developments in the Indian economy could also impact companies and banks that provide services to us. For example, on March 5, 2020 and November 17, 2020, respectively, the GoI, in consultation with RBI placed Yes Bank Limited and Lakshmi Vilas Bank under moratorium, imposed limitations on their operations as well as on withdrawals by depositors and payments to creditors over certain specified amounts for a limited period of time from the date of such moratorium coming into effect. The limitations on operations and the moratorium were subsequently lifted in both cases. The occurrence of any such development in the future may impact our banking channels, and we may or may not be able to recover our deposits, in part or in full. This could result in potential write-offs on our books of accounts, and materially and adversely affect the business, prospects, financial condition, results of operations and cash flows.

Additionally, an increase in trade deficit or a decline in India's foreign exchange reserves could negatively impact interest rates and liquidity, which could adversely impact the Indian economy and our business. Any downturn in the macroeconomic environment in India could materially and adversely affect the business, prospects, financial condition, results of operations and cash flows.

4. We may be exposed to variations in foreign exchange rates.

Our revenues are in Indian rupees, and currently there are no interest payments and loan repayments in foreign currency in relation to debt availed for utilisation at the Project SPVs. The Indian rupee has depreciated in recent years, and in the future may continue to depreciate, against the U.S. dollar, leading to increases in the Indian rupee cost for us to service and repay foreign currency borrowings. In addition, in the event of disputes under any of our foreign currency borrowings, if we raise foreign currency debt in future, we may be required by the terms of those borrowings to defend ourselves in foreign courts or arbitration proceedings, which could result in additional costs. A depreciation of the Indian rupee would also increase the costs of imports and may have a material adverse effect on our business, prospects, financial condition, results of operations and cash flows.

5. A decline in India's foreign exchange reserves may reduce liquidity and increase interest rates in India, which could have an adverse impact on us.

Flows to foreign exchange reserves can be volatile, and past declines have adversely affected the valuation of the Indian rupee. During the first half of 2014, emerging markets including India, witnessed significant capital outflows due to concerns regarding the withdrawal of quantitative easing in the U.S. and other structural factors in India such as high current account deficits and lower growth outlook. As a result, the Indian rupee depreciated significantly. To manage the volatility in the exchange rate, the RBI took several measures including increasing the marginal standing facility rate by 200 basis points and reducing domestic liquidity. The RBI also subsequently announced measures to attract capital

flows, particularly targeting the non-resident Indian community. The RBI intervened again in February 2016 as a result of increased volatility of the exchange rate. Depreciation of the Indian rupee in 2018 led to RBI further intervening and increasing the interest rates. Any increased intervention in the foreign exchange market or other measures by the RBI to control the volatility of the exchange rate may result in a decline in India's foreign exchange reserves, reduced liquidity and higher interest rates in the Indian economy, which could adversely affect our ability to obtain financing on adequate terms or at all, which in turn could affect our business and future financial performance.

6. Social, economic and political conditions and natural disasters could have a negative effect on our business.

Each of the Project SPVs is incorporated in India and they derive all of their revenue from India. In addition, all of our assets are located in India. Consequently, our business and the trading price of our Units may be adversely affected by the social, economic and political conditions in India and its neighbouring countries. Specific risks, such as the following could adversely influence the Indian economy, thereby having a material adverse effect on our business, financial condition, results of operations and cash flows:

- political instability, riots or other forms of civil disturbance or violence;
- war, terrorism, invasion, rebellion or revolution;
- Government interventions, including expropriation or nationalisation of assets, increased protectionism and the introduction of tariffs or subsidies;
- changing regulatory regimes;
- underdeveloped industrial and economic infrastructure;
- changes in exchange rates and controls, interest rates, government policies, taxation and economic and political developments;
- changes in policies such as, the fiscal and economic policy, industrial policy, direct and indirect taxes and the export-import policy; and
- changes in state specific regulation and conditions.

Pandemics, such as the outbreak of the COVID-19, and natural disasters such as floods, earthquakes or famines, events and conditions linked to climate change have in the past had a negative impact on the Indian economy. Potential effects may include damage to infrastructure and the loss of business continuity and business information. If our facilities are affected by any of these events, our operations may be significantly interrupted, which could materially and adversely affect our business, prospects, financial condition, results of operations and cash flows.

7. Any downgrading of India's debt rating by rating agencies could have a negative impact on our business.

India's sovereign rating decreased from Baa2 with a "negative" outlook to Baa3 with a "negative" outlook by Moody's and from BBB with a "stable" outlook to BBB with a "negative" outlook (Fitch) in June 2020; and from BBB "stable" to BBB "negative" by DBRS in May 2020. India's sovereign rating could be downgraded due to various factors, including changes in tax or fiscal policy or a decline in India's foreign exchange reserves, which are outside our control. Any adverse revisions to India's credit ratings by rating agencies may adversely affect our ability to raise additional financing, and the interest rates and other terms at which such additional financing is available. This could materially and adversely affect our ability to obtain financing for capital expenditure, which could in turn materially and adversely affect our business, prospects, financial condition, results of operations and cash flows. India's sovereign debt rating could be downgraded due to various factors, including changes in tax or fiscal policy or a decline in India's foreign exchange resources, which are outside our control.

8. Financial instability in other countries may cause increased volatility in Indian financial markets.

The Indian market and the Indian economy are influenced by economic and market conditions in other countries, including conditions in the United States, Europe and certain emerging economies in Asia. Financial turmoil in Asia, Russia and elsewhere in the world in recent years has adversely affected the Indian economy. Any such financial instability may cause increased volatility in the Indian financial markets and, directly or indirectly, adversely affect the Indian economy and financial sector and us.

Although economic conditions vary across markets, loss of investor confidence in one economy may cause increased volatility across other economies, including India. Financial instability in other parts of the world could have a global influence and thereby negatively impact the Indian economy. Financial disruptions could materially and adversely affect our business, prospects, financial condition, results of operations and cash flows.

The global credit and equity markets have experienced substantial dislocations, liquidity disruptions and market corrections. The dislocation of the sub-prime mortgage loan market in the United States since September 2008, and the more recent European sovereign debt crisis, has led to increased liquidity and credit concerns and volatility in the global credit and financial markets. These and other related events have had a significant adverse impact on the global credit

and financial markets as a whole, including reduced liquidity, greater volatility, widening of credit spreads and a lack of price transparency in the global credit and financial markets. Further, economic developments globally can have a significant impact on our principal markets. Following the United Kingdom's exit from the European Union ("**Brexit**"), there remains significant uncertainty around the terms of their future relationship with the European Union and, more generally, as to the impact of Brexit on the general economic conditions in the United Kingdom and the European Union and any consequential impact on global financial markets. For example, Brexit could give rise to increased volatility in foreign exchange rate movements and the value of equity and debt investments.

In addition, China is one of India's major trading partners and there are rising concerns of a possible slowdown in the Chinese economy as well as a strained relationship with India, which could have an adverse impact on the trade relations between the two countries. In response to such developments, legislators and financial regulators in the United States and other jurisdictions, including India, implemented a number of policy measures designed to add stability to the financial markets. However, the overall long-term effect of these and other legislative and regulatory efforts on the global financial markets is uncertain, and they may not have the intended stabilizing effects. Any significant financial disruption could have a material adverse effect on our business, financial condition, results of operation, and cash flows. These developments, or the perception that any of them could occur, have had and may continue to have a material adverse effect on global economic conditions and the stability of global financial markets, and may significantly reduce global market liquidity, restrict the ability of key market participants to operate in certain financial markets or restrict our access to capital. This could have a material adverse effect on our business, financial condition, results of operations, and cash flows, and reduce the price of the Units.

9. If inflation rises in India, increased costs may result in a decline in profits.

Inflation rates in India have been volatile in recent years, and such volatility may continue. Increasing inflation in India could cause a rise in the price of transportation, wages, raw materials and other expenses. There can be no assurance that increased toll charges will sufficiently offset our increased costs due to inflation which could have a material adverse effect on our business, prospects, financial condition, results of operations and cash flows. Inflation may also have an impact on interest rates, which can affect our profitability.

10. Significant differences exist between Ind AS and other accounting principles, such as IFRS, Indian GAAP and U.S. GAAP, which may be material to investors' assessments of our financial condition, result of operations and cash flows.

The Combined Financial Statements included in this Draft Placement Memorandum are prepared and presented in conformity with Ind AS, consistently applied during the periods stated in those reports, except as otherwise provided therein, and no attempt has been made to reconcile any of the information given in this Draft Placement Memorandum to any other principles or to base the information on any other standards. Ind AS differs from accounting principles with which prospective investors may be familiar in other countries, such as IFRS, Indian GAAP and U.S. GAAP. Accordingly, the degree to which the Combined Financial Statements included in this Draft Placement Memorandum will provide meaningful information is entirely dependent on the reader's level of familiarity with Indian accounting practices. Persons not familiar with Indian accounting practices should limit their reliance on the financial disclosures presented in this Draft Placement Memorandum.

Ind AS has certain differences with IFRS and Indian GAAP. In addition, as the mandated transition to Ind AS is very recent, there is no significant body of established practice from which we can draw on in forming judgments regarding the implementation and application of Ind AS, as compared to established IFRS or Indian GAAP generally, or in respect of specific industries.

11. Fluctuations in the exchange rate of the Indian Rupee with respect to the U.S. Dollar or other currencies could affect the foreign currency equivalent of the value of the Units and any distributions.

Fluctuations in the exchange rates between the Indian Rupee and other currencies could affect the foreign currency equivalent of the Indian Rupee price of the Units. The fluctuations could also affect the amount that Unitholders will receive in foreign currency upon conversion of any cash distributions or other distributions paid in Indian Rupees by the Trust on the Units, and any proceeds paid in Indian Rupees from any sale of the Units in the secondary trading market.

12. Unitholders may not be able to enforce a judgment of a foreign court against the Trust or the Investment Manager.

The enforcement of civil liabilities by overseas investors in the Units, including the ability to effect service of process and to enforce judgments obtained in courts outside of India, may be adversely affected by the fact that (i) the Trust is constituted under the laws of the Republic of India, (ii) the Investment Manager is a limited liability company incorporated under the laws of the Republic of India, (iii) the directors and key personnel of the Investment Manager reside in India and (iv) all of the assets of the Trust and the Investment Manager are located in India. All of the assets of the Trust and the assets of the Directors are also located in India. As a result, it may be difficult to serve process upon the Trust, the Investment Manager or any of these persons outside of India or to enforce in India judgments obtained against such persons in courts outside of India.

India is not a party to any international treaty in relation to the recognition or enforcement of foreign judgments. Recognition and enforcement of foreign judgments are provided for under Section 13, Section 14 and Section 44A of the Civil Procedure Code. The GoI has, under Section 44A of the Civil Procedure Code, notified certain countries as reciprocating countries. Section 13 of the Civil Procedure Code provides that a foreign judgment will be conclusive regarding any matter directly adjudicated upon, between the same parties or between the parties whom they or any of them claim are litigating under the same title, except: (i) where the judgment has not been pronounced by a court of competent jurisdiction; (ii) where the judgment has not been given on the merits of the case; (iii) where it appears on the face of the proceedings that the judgment is founded on an incorrect view of international law or a refusal to recognise the law of India in cases in which such law is applicable; (iv) where the proceedings in which the judgment was obtained were opposed to natural justice; (v) where the judgment has been obtained by fraud; or (vi) where the judgment sustains a claim founded on a breach of any law in force then in India. Section 44A of the Civil Procedure Code provides that where a foreign judgment has been rendered by a superior court in any country or territory outside India, which the GoI has, by notification, declared to be a reciprocating territory, it may be enforced in India by proceedings in execution as if the judgment had been rendered by the relevant court in India. However, Section 44A of the Civil Procedure Code is applicable only to monetary decrees not being in the nature of any amounts payable in respect of taxes or other charges of a similar nature or in respect of a fine or other penalties and does not include arbitration awards. The United Kingdom and some other countries have been declared by the GoI to be a reciprocating territory for the purposes of Section 44A. However, the United States has not been declared by the GoI to be reciprocating territories for the purposes of Section 44A. A judgment of a court in the United States may be enforced in India only by a suit upon the judgment, subject to Section 13 of the Civil Procedure Code and not by proceedings in execution.

There may be considerable delays in the disposal of suits by Indian courts. It may be unlikely that a court in India would award damages on the same basis as a foreign court if an action is brought in India. Furthermore, it may be unlikely that an Indian court would enforce foreign judgments if it viewed the amount of damages awarded as excessive or inconsistent with the public policy in India. A party seeking to enforce a foreign judgment in India is required to obtain prior approval from the RBI to repatriate any amount recovered pursuant to execution and any such amount may be subject to income tax in accordance with applicable laws. Any judgment or award in a foreign currency would be converted into Indian Rupees on the date of the judgment or award and not on the date of the payment which could be subject to foreign exchange risk. Generally, there are considerable delays in the processing of legal actions to enforce a civil liability in India, and therefore it is uncertain whether a suit brought in an Indian court will be disposed of in a timely manner or subject to considerable delays.

13. We may be affected by competition law in India and any adverse application or interpretation of the Competition Act, 2002 ("Competition Act") could adversely affect our business.

The Competition Act regulates practices having an appreciable adverse effect on competition in the relevant market in India. Under the Competition Act, any formal or informal arrangement, understanding or action in concert, which causes or is likely to cause an appreciable adverse effect on competition, is considered void and results in the imposition of substantial monetary penalties. Further, any agreement among competitors which, directly or indirectly, involves the determination of purchase or sale prices, limits or controls production, supply, markets, technical development, investment or provision of services, shares the market or source of production or provision of services by way of allocation of geographical area, type of goods or services or number of customers in the relevant market or, directly or indirectly, results in bid-rigging or collusive bidding, is presumed to have an appreciable adverse effect on competition. The Competition Act also prohibits abuse of a dominant position by any enterprise. The Competition Commission of India ("**CCI**") has extra-territorial powers and can investigate any agreements, abusive conduct or combination occurring outside India if such agreement, conduct or combination has an appreciable adverse effect on competition in India. However, there can be no assurance as to the impact of the provisions of the Competition Act on the agreements that the Project SPVs have entered into. We are not currently party to any outstanding proceedings, nor have we received notice in relation to non-compliance with the Competition Act or the agreements they have entered into. However, if we are affected, directly or indirectly, by the application or interpretation of any provision of the Competition Act, or any enforcement proceedings initiated by the CCI, or any adverse publicity that may be generated due to scrutiny or prosecution by the CCI, or if any prohibition or substantial penalties are levied under the Competition Act, it could materially and adversely affect our business, prospects, financial condition, results of operations and cash flows.

RISKS RELATING TO TAXATION

1. Changes in legislation or the rules relating to tax regimes could materially and adversely affect our business, prospects and results of operations.

The GoI has announced the union budget for the Fiscal 2021 and the Finance Act, 2020 has been granted assent by the President of India on March 27, 2020. The Finance Act has amended the definition of 'business trusts', and also abolished the dividend distribution tax regime as applicable to companies and has shifted the incidence of taxation of dividend on the shareholder or unitholders. For further details, please see the risk factor entitled "– *Investors may be subject to Indian taxes arising out of capital gains on the sale of Units and on any dividend or interest component of any returns from the Units*" on page 87 below.

There have been two recent major reforms in Indian tax laws, namely the introduction of the Goods and Services Tax ("**GST**") and provisions relating to general anti-avoidance rules ("**GAAR**"). The GST regime came into effect on July 1, 2017, combining taxes and levies by the Government and State Governments into a unified rate structure.

Additionally, there is limited clarity on the availability of input tax credit, and any unfavourable orders in this regard may have a material adverse impact on our financial position and cash flows. Further, any application of existing law or future amendments may affect our overall tax efficiency, and may result in significant additional taxes becoming payable.

Tax laws and regulations are subject to differing interpretations by tax authorities. Differing interpretations of tax and other fiscal laws and regulations may exist within governmental ministries, including tax administrations and appellate authorities, thus creating uncertainty and potential unexpected results. The degree of uncertainty in tax laws and regulations, combined with significant penalties for default and a risk of aggressive action by the governmental or tax authorities, may result in tax risks being significantly higher than expected.

The GAAR regime came into effect on April 1, 2017. The tax consequences of the GAAR provisions being applied to an arrangement could result in denial of tax benefit, among other consequences. In the absence of any precedents on the subject, the application of these provisions is uncertain. If the GAAR provisions are made applicable to the Trust or any member of the Trust, it may have a material adverse tax impact on the Trust.

Such transactions are declared as impermissible avoidance arrangements and the consequence in relation to tax arising from such arrangements, including denial of a tax benefit or a benefit under a tax treaty, shall be determined according to the circumstances of the case. The rules notified with respect to GAAR prescribe that these shall not be applicable to FIIs in accordance with the SEBI (Foreign Institutional Investors) Regulations, 1995 subject to the fulfilment of certain conditions. GAAR may have a material adverse tax impact on the Trust, the Sponsor and the Unitholders.

The Investment Manager has not determined the impact of such existing or proposed legislations on our business. Uncertainty in the applicability, interpretation or implementation of any amendment to, or change in, governing law, regulation or policy, including by reason of an absence, or a limited body, of administrative or judicial precedent may be time consuming as well as costly for us to resolve, and may impact the viability of our current business or restrict our ability to grow our business in the future.

2. Investors may be subject to Indian taxes arising out of capital gains on the sale of Units and on any dividend or interest component of any returns from the Units

Under current Indian tax laws, units of a business trust held for more than 36 months are considered as long term capital assets. In case of sale of such units through a recognised stock exchange in India and subject to payment of securities transaction tax ("**STT**"), any gain arising in excess of ₹ 0.10 million is subject to long term capital gains tax at a concessional rate of 10% (plus applicable surcharge and cess). However, if the said units are sold in any other manner, the same shall be subject to long term capital gains tax at the rate of 20% with indexation benefit (plus applicable surcharge and cess).

In case the units are held for less than or up to 36 months, the same shall be regarded as short term capital asset. Any gain arising in case of sale of such units through a recognised stock exchange in India and subject to payment of STT, is subject to short term capital gains tax at concessional rate of 15% (plus applicable surcharge and cess). However, if the said units are sold in any other manner, the same shall be subject to short term capital gains tax at applicable tax rates of the holder (plus applicable surcharge and cess).

The aforesaid taxability in India is subject to tax treaty benefits in the case of a non-resident holder.

The Finance Act, 2020 amended the Income-tax Act, 1961 (the "**IT Act**") to abolish the dividend distribution tax regime and shift the incidence of taxation of dividend (declared or distributed on or after April 1, 2020) to shareholder. Under the Finance Act, 2020, a distribution made by a business trust, being in nature dividend income received from a special purpose vehicle, will not be subject to tax in the hands of a unitholder, so long as the special purpose vehicle has not opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act. Similarly, a business trust (which includes an infrastructure investment trust) will not be required to withhold tax on any distributions which are in the nature of dividend income received from a special purpose vehicle, so long as such special purpose vehicle has not opted to pay corporate tax under the beneficial regime introduced under Section 115BAA of the IT Act. However, where the special purpose vehicle opts to pay tax under Section 115BAA of the IT Act, dividend income distributed by the business trust would be taxed in the hands of a non-resident unitholder at 20% (plus applicable surcharge and cess) or the applicable treaty rate and at the ordinary rate for a resident unitholder. Further, the business trust would be required to withhold tax on such distributions made from dividend received from the special purpose vehicle. Thus, the taxability of dividends distributed by the Trust will depend on the taxation regime opted by the Project SPVs.

Further, the Finance Bill, 2021 (the "**Finance Bill**") proposes to include a definition of pooled investment vehicle which shall comprise business trusts as defined under the IT Act. The IT Act defines business trusts as trusts registered with SEBI as an InvIT. Such amendment is proposed to be in effect from April 1, 2021. The Finance Bill proposes to recognise units, debentures and other instruments issued by infrastructure investment trusts as "securities" under the Securities Contracts (Regulation) Act, 1956. This may have further implications under various regulations issued by SEBI governing securities, including under the Securities and Exchange Board of India (Listing Obligations and Disclosure Requirements) Regulations, 2015 and the Securities and Exchange Board of India (Prohibition of Insider Trading) Regulations, 2015. Such amendment is proposed to be in effect from April 1, 2021. As announced in the previous budget, the dividend distribution tax applicable on InvITs was abolished and replaced with dividend withholding tax. The Finance Bill proposes to exempt payment of tax deducted at source on dividend paid to InvITs. Such amendment is proposed to be in effect from April 1, 2022. There can be no assurance that the proposals under the Finance Bill will eventually be enacted and enforced as law.

Furthermore, the Trust might not be able to pay or maintain the levels of distributions or ensure that the level of distributions will increase over time, or that future acquisitions will increase the Trust's distributable free cash flow to the Unitholders. Any reduction in, or elimination or taxation of, payments of distributions could materially and adversely affect the market price of the Units.

3. The Trust and the Project SPVs may be subject to certain tax related risks under the provisions of the IT Act.

Shortfall in the determination of fair market value of the equity shares at the time of transfer of the Project SPVs to the Trust may be subject to taxation in the hands of the acquirer. The equity shares of the Project SPVs are proposed to be transferred to the Trust. Under the provisions of section 56(2)(x) of the IT Act, where a purchase of shares is undertaken at a value which is lower than the fair market value of the shares, such shortfall in value is subject to be taxed as income from other sources in the hands of the acquirer. The manner of determination of fair market value as provided under the Income Tax Rules, 1962, includes the value determined by net asset method, subject to the prescribed adjustments.

The Trust is under an obligation to distribute to the Unitholders, the surplus of the income earned from receipt of cash flows from the interest and dividend received from the Project SPVs, after the deduction of the various expenses incurred in connection with earning such income and general-purpose expenses. The provisions of the IT Act provide that the Trust should disclose the nature of the amount distributed to the Unitholders, i.e., whether from dividends received from the Project SPVs, interest income earned, etc. However, there is lack of clarity on the method to be adopted by the Trust for the allocation of various expenses incurred towards earning each specific stream of income by the Trust.

4. The Project SPVs enjoy certain benefits under Section 80-IA of the IT Act in relation to the Project SPVs and any change in these tax benefits applicable to the Trust may adversely affect its results of operations.

Under the provisions of section 80-IA of the IT Act, the Project SPVs are eligible for tax holiday for any 10 consecutive assessment years out of 20 years beginning from the year in which the undertaking or enterprise develops and begins to operate any infrastructure facility. As a result of the tax holiday available to the Project SPVs, the taxable profits derived by the Project SPVs from developing, operating and maintaining any infrastructure facility (including toll roads) will not be taxable under the normal provisions of the IT Act during the tax holiday period. Any other taxable income (for example, interest income, profit on sale of mutual funds) from deployment of temporary funds or otherwise would also be taxable under the terms of the IT Act. The Project SPVs will only be subject to MAT if the Project SPVs have a book profit as required to be computed under section 115JB of the IT Act. Any change in the tax benefits under section 80-IA and/or the provisions of MAT may have an impact on the income tax liability of the Project SPVs and may consequently affect the amount available for distribution by the Project SPVs to the Trust. Furthermore, if the relevant conditions under section 80-IA of the IT Act are not met and the manner of computation of profits and gains are not as permitted, the Project SPVs will not be able to enjoy the benefits of such tax holiday.

5. ***The income of the Trust in relation to which pass through status is not granted under the IT Act may be chargeable to Indian taxes.***

Under the provisions of the IT Act, the total income of the Trust other than capital gain, interest and dividend income from the Project SPVs would be tax chargeable at the maximum marginal rate ("**MMR**"). MMR is defined under the provisions of the IT Act to mean the rate of income-tax (including surcharge on income-tax, if any) applicable in relation to the highest slab of income.

In accordance with section 115UA of the IT Act, the MMR applicable to the Trust, a separately assessable resident entity, is 30.0% (plus applicable surcharge and cess). However, the relevant authorities may view the Trust as a "pass through" entity and the applicable tax rate will be the MMR applicable to its beneficiaries. If any beneficiary is chargeable to MMR at a rate higher than the rate applicable to other beneficiaries, the income of the Trust attributable to the share of such beneficiary will be taxed at a higher applicable rate. For example, if any Unitholder is a non-resident, the MMR of 40.0% (plus applicable surcharge and cess) would apply.

As there are two divergent views, there is a possibility that the matter may be litigated if the latter view is taken up by the tax authorities of India.

6. ***Depreciation may not be claimed on the capitalised cost of a road constructed on a BOT basis.***

The Project SPVs have regarded the Projects constructed on a BOT basis as capital assets and claimed depreciation on the capitalised cost of the Projects. Under the provisions of the IT Act, the following conditions must be satisfied if depreciation is claimed on any asset:

- the asset is a capital asset;
- the party seeking to claim depreciation on an asset is the owner of the asset; and
- the asset has been used for the purpose of the business.

In respect of BOT projects, the possession of land is handed over to the developer by the GoI without actual transfer of ownership, and such a developer takes the land on lease for construction and operation of the road for a concession period.

Based on various judicial decisions, it may be inferred that depreciation is allowed if a party has dominant control over the asset during the concession period and is entitled to use it in its own right. Accordingly, a Project SPV may be considered as the owner of a road constructed on a BOT basis. Further, there are previous high court or tribunal decisions which held that road constructed by a taxpayer on a BOT basis is eligible for depreciation even though the taxpayer is not the legal owner of the road.

However, while the provisions of the IT Act specifically provide that a building constructed on leasehold land is regarded as being owned by the lessee and depreciation may be claimed, there is no similar specific provision in respect of the Projects constructed on a BOT basis. An Apex Court decision has held that ownership is necessary for a party to claim depreciation.

The Central Board of Direct Taxes issued Circular No. 9 of 2014 in response to litigation on claims of tax depreciation in respect of BOT projects (the "**Circular**"). The Circular stated that the total project cost incurred on an infrastructure project would be amortised equally across the remaining period of time in which toll collections are received. Consequently, the cost of constructed roads is considered "amortisation" and not "depreciation" for income tax purposes. This has an effect on the financial projections of the Project SPVs and in turn, the financial position of the Trust.

The Project SPVs are eligible to claim tax deduction under section 80-IA(4)(i) of the IT Act. Therefore, adjustment on account of depreciation may not have any income tax impact during the tax holiday period. However, if a higher depreciation is allowed during the tax holiday period as compared to the depreciation claimed in the return of income, tax liability in the post-tax holiday period will be higher as against the tax liability.

7. ***The Ministry of Finance, GoI, has constituted a task force to draft new direct tax legislation, the provisions of which may have an unfavourable implication for us.***

The Ministry of Finance, GoI, has set up a panel to review the IT Act and to draft a new direct tax legislation ("**Panel**"). The Panel has been tasked with drafting appropriate direct tax legislation aimed at (i) aligning India's domestic direct tax regime in line with international best practices; and (ii) ensuring and encouraging compliance. The impact of the report by the Panel, including findings and recommendations in their report and the provisions of the proposed direct tax legislation could have an unfavourable implication on us. Since the Panel and its report, including their recommendations and the draft of the new direct tax legislation has not been released yet, the possible impact on us is not clear.

GENERAL INFORMATION

The Trust

The Trust was set up as a contributory irrevocable trust under the provisions of the Indian Trusts Act, 1882. The Trust was registered as an infrastructure investment trust under the InvIT Regulations on February 4, 2021 having registration number IN/InvIT/20-21/0017. For information on the background of the Trust and the description of the Initial Portfolio Assets, please see the sections entitled "*Overview of the Trust*" and "*Business*" on pages 17 and 144, respectively.

Compliance Officer of the Trust

The compliance officer of the Trust is Mr. Shantilal Kothari. His contact details are as follows:

Mr. Shantilal Kothari
1501, F-Tower, Oberoi Splendor
JVLR, Andheri East
Mumbai 400 060
Tel: +91 22 4228 5562
Fax: +91 22 4228 5577
E-mail: finance@shrem.in

Bidders can contact the Compliance Officer or the Lead Manager in case of any pre-Issue or post-Issue related problems, non-credit of Allotted Units in the respective beneficiary account of Bidders after Allocation or non-receipt of refund orders.

The Sponsor – Shrem Infra Structure Private Limited

Registered office and address for correspondence:

1101, Viraj Towers,
Junction off Andheri Kurla Road,
Western Express Highway near Land Mark Building,
Andheri (East),
Mumbai 400 069
Tel: +91 22 4228 5600
Fax: +91 22 4228 5577
E-mail: infrateam@shrem.in
Website: https://www.shrem.in/

Contact Person of the Sponsor:

Nitan Chhatwal is a director and is the contact person of the Sponsor. His contact details are as follows:

Nitan Chhatwal

1101, Viraj Towers,
Junction off Andheri Kurla Road,
Western Express Highway near Land Mark Building,
Andheri (East),
Mumbai 400 069
Tel: +91 22 4228 5559
Fax: +91 22 4228 5577
E-mail: infrateam@shrem.in

The Investment Manager – Shrem Financial Private Limited

Registered office and address for correspondence:

1101, Viraj Towers,
Junction off Andheri Kurla Road,
Western Express Highway near Land Mark Building,
Andheri (East),
Mumbai 400 069
Tel: +91 22 4228 5600
Fax: +91 22 4228 5577
E-mail: finance@shrem.in

The Project Manager – Shrem Road Projects Private Limited

Registered office and address for correspondence:

1101, Viraj Towers,
Junction off Andheri Kurla Road,
Western Express Highway near Land Mark Building,
Andheri (East),
Mumbai 400 069
Tel: +91 22 4228 5559
Fax: +91 22 4228 5577
E-mail: infrateam@shrem.in
Contact person: Piyush Jain

The Trustee – Axis Trustee Services Limited

Registered Office:

Axis House
Bombay Dyeing Mills Compound
Pandurang Budhkar Marg
Worli
Mumbai 400 025
Tel: +91 22 6226 0054
Fax: +91 22 6230 0700
E-mail: debenturetrustee@axistrustee.com, anil.grover@axistrustee.com
Contact Person: Anil Grover, Head - Operations
Website: www.axistrustee.com

Corporate Office/Correspondence Address:

The Ruby, 2nd Floor, SW29,
Senapati Bapat Marg, Dadar West
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Tel: +91 22 6230 0451
Fax: +91 22 6230 0700

Other Parties involved in the Trust

Auditors

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Tel: +91 22 2663 3500
Firm Registration No.: 106655W
E-mail: info@mmchitale.com
Name of contact person: Saurabh Chitale
Peer review certificate no.: 010900

Valuer

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E-mail: chennaissr@gmail.com
Firm Registration No: IBBI/RV/06/2018/10238

Technical Consultant

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Telangana, India
Tel: +91 77025 99777
E-mail: contact@rukyprojects.com
Engineers Registration No: F-1273457
Contact Person: Mr. Ch. Ramanaiah
Website: www.rukyprojects.com

Traffic Study Consultant

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DLF Cyber Terrace Phase-III
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India
Tel: +91 124 4611 999
Fax: +91 124 4611 998
E-mail: srch@ramboll.com
Firm Registration No: U72200DL2006PTC276587
Contact Person: Srinivas Chekuri

Lead Manager to the Issue

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ICICI Centre
H.T. Parekh Marg
Churchgate
Mumbai 400 020
Tel: +91 22 2288 2460
Fax: +91 22 2282 6580
E-mail: shrem.invit@icicisecurities.com
Investor grievance E-mail: customercare@icicisecurities.com
Website: www.icicisecurities.com
Contact Person: Mr. Rupesh Khant
SEBI Registration No.: INM000011179

Escrow Collection Bank

[●]
[●]
Tel: [●]
Fax: [●]
E-mail: [●]
Contact Person: [●]
Website: [●]
SEBI Registration Number: [●]

Legal counsels to the Trust and the Sponsor as to Indian law

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Indian Legal Counsel to the Lead Manager

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Special Purpose International Legal Counsel to the Lead Manager

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Dubai International Financial Centre (DIFC)
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P.O. Box 111 713
Dubai, United Arab Emirates
Tel: +971 4447 8700
Fax: +971 4456 1271

Registrar and Unit Transfer Agent

Link Intime India Private Limited
C-101, 247 Park
1st Floor, L.B.S. Marg
Vikhroli West
Mumbai 400 083
Maharashtra, India
Tel: +91 22 4918 6000
Fax: +91 22 4918 6060
E-mail: bonds.helpdesk@linkintime.co.in
Investor Grievance E-mail: bonds.helpdesk@linkintime.co.in
Contact Person: Ajit Patankar
Website: www.linkintime.co.in
SEBI Registration Number: INR000004058

Credit Rating Agency

India Ratings and Research Private Limited
Wockhardt Tower
West Wing, Level 4
Bandra Kurla Complex
Mumbai 400 051
Tel: +91 22 4000 1791
Fax: + 91 22 4000 1701
E-mail: arunima.basu@indiaratings.co.in
Contact Person: Ms. Arunima Basu, Compliance Officer
Website: www.indiaratings.co.in
SEBI Registration Number: IN/CRA/002/1999

PARTIES TO THE TRUST

A. The Sponsor - Shrem Infra Structure Private Limited

History and Certain Corporate Matters

Shrem Infra Structure Private Limited is the Sponsor of the Trust. The Sponsor was incorporated in India under the Companies Act, 1956 with corporate identity number U45100MH2014PTC254839.

The Sponsor's registered office is situated at 1101, Viraj Towers, Junction off Andheri Kurla Road, W.E. Highway near Land Mark Building, Andheri (East), Mumbai 400 069. For further details, please see the section entitled "*General Information*" on page 90.

Background of the Sponsor

For details of the acquisition of the Initial Portfolio Assets by the Sponsor, please see the section entitled "*Formation Transactions in relation to the Trust – Acquisition of the Initial Portfolio Assets by the Trust and Acquisition of Units by the Sponsor*" on page 29.

The Sponsor has experience in the roads and bridges sector through the Holdcos and the Project SPVs from March 2017 onwards. For further details, please see the section entitled "*Business*" on page 144. Further, between the periods of March 2015 to December 2017, the Sponsor held 49.0% of the equity share capital of Radiant Life Care Mumbai Private Limited ("**RLCMPL**"). During this period, RLCMPL was responsible for, amongst others, expanding, equipping, operating, upgrading, managing and administering Dr. Balabhai Nanavati Hospital. Additionally, Shrem Resort Private Limited ("**SRPL**") (now Zon Hotels Private Limited), an erstwhile associate of the Sponsor, developed the Novotel Goa Shrem Hotel, a five-star hotel, located in Anna Waddo, Candolim – Bardez, Goa, from January 2011 to January 2017. First phase of Novotel Goa Shrem Hotel became operational in October 2013 and second phase became operational in January 2017. SRPL later developed Grand Mercure Goa Shrem Resort, a five-star hotel, located in Pinto Waddo, Candolim – Bardez, Goa, December 2011 to November 2014. Grand Mercure Goa Shrem Resort became operational in November 2014. Further, Nitan Chhatwal, an associate of the Sponsor, was involved in the infrastructure sector through the Shrem group, with interests in the tourism, hospital, telecommunications and roads and bridges sectors.

In accordance with the eligibility criteria specified under the InvIT Regulations, the Sponsor had a consolidated net worth of not less than ₹ 1,000 million as on September 30, 2020. The standalone net worth (i.e. the total of share capital and reserves and surplus) of the Sponsor as on September 30, 2020 was ₹ 1,718.73 million.

Further, neither the Sponsor nor any of the promoters or directors of the Sponsor: (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been promoters, directors or persons in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been in the list of wilful defaulters published by the RBI.

Board of Directors of the Sponsor

The board of directors of the Sponsor is entrusted with the overall management of the Sponsor. Please see below the details in relation to the board of directors of the Sponsor:

Sr. No.	Name	DIN
1.	Nitan Chhatwal	00115575
2.	Smita Chhatwal	00116943
3.	Krishani Chhatwal	02919669
4.	Shyam Sunder Malani	03182609

B. The Trustee – Axis Trustee Services Limited

Axis Trustee Services Limited is the Trustee in respect of the Trust. The Trustee is a debenture trustee registered with SEBI under the Securities and Exchange Board of India (Debenture Trustees) Regulations, 1993, having registration number IND000000494. The certificate of registration is dated January 31, 2014, which is valid until suspended or cancelled by SEBI. The Trustee's registered office is situated at Axis House, Bombay Dyeing Mills Compound, Pandurang Budhkar Marg, Worli, Mumbai 400 025. The Trustee's address for correspondence and principal place of business is situated at The Ruby, 2nd Floor, SW, 29, Senapati Bapat Marg, Dadar West, Mumbai 400 028. The Trustee is promoted by Axis Bank Limited for providing corporate and other trusteeship services.

Background of the Trustee

The Trustee's services are aimed at catering to the individual needs of the client and enhancing client satisfaction. As Trustee, it ensures compliance with all statutory requirements and believes in the highest ethical standards and best practices in corporate governance. It aims to provide the best services in the industry with its well trained and professionally qualified staff with a sound legal acumen. The Trustee is involved in varied facets of debenture and bond trusteeships, including, advisory functions and management functions. The Trustee also acts as a security trustee and is involved in providing services in relation to security creation, compliance and holding security on behalf of lenders.

The Trustee is also involved in providing services such as: (i) a facility agent for complex structured transactions; (ii) an escrow agent; (iii) a trustee to alternative investment funds; (iv) custodian of documents as a safekeeper; and (v) a trustee to real estate investment funds.

The Trustee has been engaged in the activity of providing trusteeship services since 2008 and has a customer base of over 500 corporate clients. The Trustee is currently the trustee to one of the first publicly offered infrastructure investment trusts in India, India Grid Trust.

The Trustee confirms that it has and undertakes to ensure that it will at all times, maintain adequate infrastructure personnel and resources to perform its functions, duties and responsibilities with respect to the Trust, in accordance with the InvIT Regulations, the Trust Deed and other applicable law.

The Trustee is not an Associate of the Sponsor or the Investment Manager or the Project Manager to the Trust. Further, neither the Trustee nor the settlors of the Trustee (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been promoters, directors or persons in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been declared a wilful defaulter by any bank or a financial institution or consortium thereof in accordance with the guidelines on 'wilful defaulters' published by the RBI.

Board of Directors of the Trustee

The Board of Directors of the Trustee is entrusted with the responsibility for the overall management of the Trustee. Please see below the details in relation of the board of directors of the Trustee:

Sr. No.	Name	DIN
1.	Sanjay Sinha	08253225
2.	Rajesh Kumar Dahiya	07508488
3.	Ganesh Sankaran	07580955

Brief profiles of the Directors of the Trustee

1. **Sanjay Sinha** is the Managing Director and Chief Executive Officer of Axis Trustee Services Limited.

2. **Rajesh Dahiya** is an executive director on the board of Axis Trustee Services Limited.

3. **Ganesh Sankaran** is a director on the board of Axis Trustee Services Limited.

Key Terms of the Trust Deed

The Trustee has entered into the Trust Deed, in terms of the InvIT Regulations, the key terms of which, are provided below:

1. *Powers of the Trustee*

The Trustee has been provided with various powers under the Trust Deed in accordance with the Indian Trusts Act, 1882 and the InvIT Regulations, including but not limited to:

(i). The Trustee shall, in relation to the Trust, have every and all powers that a person competent to contract and acting as a legal and beneficial owner of such property has.

(ii). The Trustee shall have the power to determine, in accordance with the Investment Management Agreement and the investment objectives of the Trust, distributions to Unitholders and other rights attached to the Units

in compliance with the InvIT Regulations and applicable law.

(iii). The Trustee shall oversee voting of the Unitholders in accordance with the InvIT Regulations.

(iv). The Trustee shall have the power to do the following, which power may be delegated to the Investment Manager in terms of the Investment Management Agreement:

(a). cause offering of the Units through any offer document;

(b). cause any offer document to be provided to the investors;

(c). issue and allot Units;

(d). summon and conduct meetings of the Unitholders in accordance with the relevant InvIT Documents and the InvIT Regulations; and

(e). subject to, and only in accordance with, the terms of the InvIT Documents and the InvIT Regulations, approve transfer of the Units.

(v). The Trustee shall invest and hold the InvIT Assets in the name of the Trust for the benefit of the Unitholders in accordance with the provisions of the InvIT Regulations, the InvIT Documents, the Trust Deed and the investment objectives. The Trustee shall be empowered to make investment decisions with respect to the underlying assets or projects of the Trust including any further investments or divestment, subject to InvIT Regulations, provided such power is delegated to, and exclusively exercised by, the Investment Manager pursuant to the Investment Management Agreement, and in this regard is also empowered to:

(a). acquire, hold, manage, trade, transfer and dispose of shares, stocks, convertibles, debentures, bonds and other equity or equity-related securities and other debt or mezzanine securities of all kinds issued by any SPVs, infrastructure projects in India, whether in physical or dematerialised form, including power to hypothecate, pledge or create encumbrances, as defined in the Trust Deed, of any kind on such securities held by the Trust in such Holding Companies, and / or SPVs, or infrastructure projects to be used as collateral security for any borrowings by the Trust;

(b). avail commercial loans, including the power to hypothecate, pledge or create encumbrances of any kind on the InvIT Assets as collateral security for any such loans availed by the Trust, in accordance with the InvIT Regulations and applicable law;

(c). keep the capital and monies of the Trust on deposit with banks or other institutions whatsoever;

(d). accept contributions;

(e). collect and receive the profit, interest, repayment of principal of debt or debt like, or equity or equity like, mezzanine securities, dividend, return of capital of any type by the Holding Companies, or SPVs, or infrastructure projects and income of the Trust as and when the same may become due and receivable;

(f). invest in securities or in units of mutual funds in accordance with the InvIT Regulations and applicable law;

(g). invest in money market instruments including government securities, treasury bills, certificates of deposit and commercial paper in accordance with applicable law;

(h). to give, provide and agree to provide to any SPV financial assistance in the form of investment in the Trust's debt securities or share capital of any class including ordinary, preference, participating, non-participating, voting, non-voting or other class, and in the form of investment in securities convertible into share capital; and

(i). to invest, acquire, purchase, hold, divest, sale, hypothecate, pledge or otherwise transfer land and building and immovable property of any kind including any rights and interest therein.

(vi). Subject to the provisions of the InvIT Regulations, the Trustee, in consultation with the Investment Manager, shall have the power to make such reserves out of the income or capital as the Trustee may deem proper and any decisions of the Trustee whether made in writing or implied from its acts, so far as the applicable law may permit, shall be conclusive and binding on the Unitholders and all persons actually or prospectively

interested in the Trust Deed. Any distribution made by the Trust from such reserves shall be in terms of the Trust Deed;

(vii). The Trustee shall have the power to employ and pay at the expense of the Trust, any agent in any jurisdiction whether attorneys, solicitors, brokers, banks, trust companies or other agents whether associated or connected in any way with the Trustee or not, without being responsible for the default of any agent if employed in good faith to transact any business, including without limitation, the power to appoint agents to raise funds, or do any act required to be transacted or done in the execution of the trusts hereof including the receipt and payment of moneys and the execution of documents.

(viii). The Trustee shall, on behalf of the Trust, appoint an Investment Manager to manage assets and investments of the Trust and undertake activities of the Trust in accordance with the terms and conditions set out in the Trust Deed, the Investment Management Agreement and applicable law.

(ix). The Trustee shall oversee the activities of the Investment Manager in the interest of the Unitholders, ensure that the Investment Manager complies with the InvIT Regulations and applicable law and shall obtain a compliance certificate from the Investment Manager on a quarterly basis or such other time period as prescribed by applicable law, in the form prescribed by SEBI, if any.

(x). The Trustee shall, on behalf of the Trust, appoint a Project Manager for the operation and management of the InvIT Assets, in accordance with the terms and conditions set out in the Trust Deed, the Project Implementation and Management Agreement and applicable law.

(xi). The Trustee shall oversee the activities of the Project Manager, in terms of the InvIT Regulations, applicable law and the Project Implementation and Management Agreement, and shall obtain a compliance certificate from the project manager on a quarterly basis or such other time period as prescribed by applicable law, in the form prescribed by SEBI, if any.

(xii). The Trustee may, in consultation with the Investment Manager, appoint any custodian in order to provide custodian services, any may permit any property comprised in the InvIT to be and remain deposited with a custodian or with any Person or Persons in India or in any other jurisdiction subject to such deposit being permissible under applicable law.

(xiii). The Trustee shall have the power and duty to pay all such duties, fee or taxes (and any interest or penalty chargeable thereon) as well as to create any reserves for future potential tax liability out of the Trust or the income thereof, or to the extent of the amount invested in the Units by the Unitholders, as may be permitted under applicable law, and the Trustee may pay such duties, fees or taxes (and any such interest or penalty) on behalf of the Trust. For the avoidance of doubt it is clarified that no Unitholder will be required to make a contribution as a capital commitment to the Trust (other than the value for Units already paid).

(xiv). The Trustee shall, subject to the advice of the Investment Manager, have the power to pay Trust expenses out of the funds held by the Trust, in accordance with the InvIT Documents and InvIT Regulations.

(xv). The Trustee shall, in discharge of its duties, have the power to take the opinion of legal or tax counsel in any jurisdiction concerning any disputes or differences arising under the Trust Deed or any matter relating to the Trust and the fee of such counsel shall be paid out of the funds held in the Trust.

(xvi). The Trustee may sell, rent or buy any property, or borrow property from or carry out any other transaction with the trustees of any other trust or the executors or administrators of any estate notwithstanding that the Trustee is the same person as those trustees, executors or administrators or any of them and where the Trustee is the same person as those trustees, executors or administrators, the transaction shall be binding on all persons then or thereafter interested hereunder though effected and evidenced only by an entry in the books of accounts of the Trustee, provided that such power is delegated to, and exclusively exercised by the Investment Manager pursuant to the Investment Management Agreement. The Trustee shall ensure that no conflict of interest shall arise while conducting such activities.

(xvii). Subject to applicable law, the Trustee shall have the power to accept any property before the time at which it is transferable or payable, pay or allow any claim on any evidence, accept any security payable or immovable in lieu of any amounts payable to it, alter the dates for payment of any amounts payable to it and compromise, compound, abandon or otherwise settle any claim or thing whatsoever relating to the Trust of the Trust Deed.

(xviii). The Trustee shall, subject to the advice of the Investment Manager, have the power to borrow funds including any subordinated equity, bonds or other fund from any person or authority (whether Government

or otherwise, whether Indian or overseas) for the purpose of the Trust on such terms and conditions and for such periods and subject to approval of the Unitholders in accordance with and as may be required in terms of the InvIT Regulations and applicable law in case of a listed Trust. In the event the Trust is unlisted, the aggregate consolidated borrowings of the Trust, Holdcos and SPVs shall not exceed 75% of the InvIT Assets and such limit on aggregate consolidated borrowings shall be approved by at least 75% of the Unitholders by value and shall be in accordance with the InvIT Regulations and applicable law. The Trustee shall, subject to the advice of the Investment Manager, also have the power to create encumbrances of any kind on the InvIT Assets as collateral security for any such borrowings.

(xix). Subject to the conditions laid down in offer document, and the InvIT Regulations and applicable laws, the Trustee may, subject to any advice of the Investment Manager, retain the proceeds received by the Trust from any InvIT Assets.

(xx). The Trustee may make rules to give effect to and carry out the investment objectives. In particular, and without prejudice to the generality of such power, the Trustee may provide, not inconsistent with the provisions of the Trust Deed and the InvIT Regulations, for all or any of the following matters:

(a). manner of maintaining of the records and particulars of the Unitholders;

(b). norms of investment by the Trust in accordance with the investment objectives of the Trust and in accordance with the powers and authorities of the Trustee, as set out under the Trust Deed;

(c). matters relating to entrustment / deposit or handing over of any securities or SPVs of the Trust to any one or more custodians and the procedure relating to the holding thereof by the custodian;

(d). such other administrative, procedural or other matters relating to the administration or management of the affairs of the Trust and which matters are not by the very nature required to be included or provided for in the Trust Deed or by the management thereof;

(e). procedure for seeking the vote of the Unitholders either by calling a meeting or through postal ballot or otherwise; and

(f). procedure for summoning and conducting meetings of Unitholders.

The aforementioned power to make rules may be delegated by the Trustee to the Investment Manager subject to the InvIT Regulations and in terms of the Investment Management Agreement.

(xxi). The Trustee shall cause the depository to maintain the depository register in accordance with the InvIT Documents and the InvIT Regulations.

(xxii). The Trustee shall advise the Investment Manager in relation to the appointment of valuer, auditors, registrar and transfer agent, merchant bankers, custodian, credit rating agency and any other intermediary or service provider or agent, as may be applicable, with respect to the activities pertaining to the Trust, in a timely manner in accordance with the InvIT Regulations and applicable law. The Investment Manager shall ensure that the activities of, and the services provided by, any of the intermediaries are as per the provisions of the InvIT Regulations and the applicable law.

(xxiii). The Trustee shall review the reports required in terms of the InvIT Regulations and applicable law, as submitted by the Investment Manager. In the event such reports are not submitted in a timely manner, the Trustee, after due follow-up with the Investment Manager shall intimate SEBI.

(xxiv). The Trustee shall have the power to open one or more bank accounts for the purposes of the Trust, to deposit and withdraw money and fully operate the same, in accordance with the InvIT Documents and InvIT Regulations.

(xxv). The Trustee shall have the power to take up with SEBI or with the stock exchange(s) as applicable, any matter which has been approved in any meeting of Unitholders, if the matter requires such action.

(xxvi). The Trustee shall also have the following powers and authorities:

(a). to institute, conduct, compromise, compound, or abandon any legal proceedings for or on behalf of or in the name of the Trust or the Trustee, and to defend, compound or otherwise deal with any such proceedings against the Trustee or Trustee or its officers or concerning the affairs of the Trust, and also to compound and allow time for payment or satisfaction of any equity due and of any

claims or demands by or against the Trust and observe and perform in relation to any decisions thereof;

(b). to make and give receipts, releases and other discharges for moneys payable to the Trust and for the claims and demands of the Trust;

(c). to enter into all such negotiations and contracts, and, execute and do all such acts, deeds and things for or on behalf of or in the name of the Trust as the Trustee may consider expedient;

(d). to sign, seal, execute, deliver and register according to law all deeds, documents, agreements, and assurances;

(e). to negotiate, sign, seal, execute and deliver the InvIT Documents, including but not limited to, any issue agreement, share purchase agreement, services agreement, deed of right of first offer, debenture subscription agreement, escrow agreement, underwriting agreement, loan documentation, offer document or any other deed, agreement or document in connection with the Trust or the Units, including any amendments, supplements or modifications thereto;

(f). take into their custody and/or control all the capital, assets, property of the Trust and hold the same in trust for the Unitholders in accordance with this Trust Deed, the InvIT Regulations and applicable law; and

(g). generally to exercise all such powers as it may be required to exercise under the InvIT Regulations and applicable law for the time being in force and do all such matters and things as may promote the Trust or as may be incidental to or consequential upon the discharge of its functions and the exercise and enforcement of all or any of the powers and rights under the Trust Deed.

(xxvii). The Trustee may at any time, buy-back the Units from the Unitholders, subject to applicable law.

(xxviii). For administrative and operational convenience, the Trustee may delegate to any committee or any other person, any powers set out above and the duties set out below or as available to It under the InvIT Regulations and applicable law, including *inter alia* management of the assets and investments of the Trust vested in it under this Trust Deed, taking investment decisions, issue, listing and allotment of Units and making distributions in accordance with the InvIT Regulations, provided, however, that the Trustee shall remain responsible and liable for any such persons' acts of commission or omission as determined by a court of competent jurisdiction whose decision is final, binding and non-appealable, except the roles and responsibilities delegated by the Trustee to the Investment Manager, Project Manager or any third party expert, or any sub-delegation by the Investment Manager or the Project Manager.

2. *Duties of the Trustee*

The Trustee shall perform its duties as required under the Trust Deed in accordance with the Indian Trusts Act, 1882 and the InvIT Regulations, including but not limited to:

(i). The Trustee shall use best endeavours to carry on and conduct its business in a proper and efficient manner in the best interest of the Unitholders.

(ii). The Trustee shall appoint an investment manager and project manager in accordance with the InvIT Regulations and applicable law.

(iii). The Trustee shall, on behalf of the Trust, enter into the Investment Management Agreement with the Investment Manager.

(iv). The Trustee shall ensure that the Investment Manager performs its obligations as specified below:

(a). The Trustee shall ensure that the Investment Manager complies with reporting and disclosure requirements in accordance with InvIT Regulations and in case of any delay or discrepancy, require the Investment Manager to rectify such delay or discrepancy on an urgent basis;

(b). The Trustee shall review the transactions carried out between the Investment Manager and its associates and where the Investment Manager has advised that there may be a conflict of interest, it shall obtain a certificate from a practising chartered accountant or valuer, as applicable, that such transaction is on arm's length basis;

(c). The Trustee shall review the valuation report submitted by the Investment Manager;

(d). The Trustee shall require the Investment Manager to set up such systems and procedures and submit such reports to the Trustee, as may be necessary for effective monitoring of the functioning of the Trust; and

(e). The Trustee shall ensure that the Investment Manager convenes meetings of the Unitholders in accordance with the InvIT Regulations and oversee the voting by Unitholders. The Trustee shall ensure that the Investment Manager convenes meetings of Unitholders not less than one every year and the period between such meetings shall not exceed 15 months.

(v). The Trustee shall provide SEBI and the stock exchange(s), where applicable, such information as may be sought by SEBI or by the stock exchange(s) pertaining to the activity of the Trust. The Trustee shall comply with intimation requirements under the InvIT Regulations and applicable law, including in relation to intimating SEBI in case of any discrepancy in the operation of the Trust with the InvIT Regulations and any offer document. The Trustee shall also immediately inform SEBI in case any act which is detrimental to the interest of the Unitholders is noted.

(vi). The Trustee shall at all times exercise due diligence in carrying out its duties and protecting the interests of the Unitholders.

(vii). The Trustee shall delegate all such powers to the Investment Manager and the Project Manager as may be required to carry out obligations under the Investment Management Agreement, Project Implementation and Management Agreement and applicable law.

(viii). The Trustee shall delegate all such powers to the Project Manager as may be required by the Project Manager to carry out its obligations under the Project Implementation and Management Agreement and under applicable law.

(ix). The Trustee shall obtain prior approval from the Unitholders in accordance with the InvIT Regulations before any change in, or change in control of, the Investment Manager due to removal or otherwise. In this regard, the Trustee shall also obtain prior approval from SEBI prior to any change in Investment Manager, in the event that such approval is required in terms of the InvIT Regulations. The Trustee shall, appoint a new investment manager in accordance with the InvIT Regulations and applicable law, in case of change in Investment Manager due to removal or otherwise, within the time period prescribed under the InvIT Regulations. The previous investment manager shall continue to act as such at the discretion of the Trustee until such time as the new investment manager is appointed. The Trustee shall ensure that the new investment manager shall stand substituted as a party in all the documents to which the earlier investment manager was a party. The Trustee shall also ensure that the earlier investment manager continues to be liable for all its acts of omissions and commissions for the period during which it served as investment manager, notwithstanding its termination.

(x). The Trustee shall appoint a new project manager in accordance with the InvIT Regulations and applicable law in case of change in Project Manager due to removal or otherwise. The Trustee shall appoint a new project manager within the time period prescribed under the InvIT Regulations. The Trustee may, either *suo moto* or based on the advice of the concessioning authority(ies) appoint an administrator in connection with an infrastructure project for such terms and on such conditions as it deems fit. The previous project manager shall continue to act as the project manager till such time as a new project manager is appointed. All costs and expenses in this regard will be borne by the new project manager. The Trustee shall ensure that the new project manager shall stand substituted as a party in all the documents to which the earlier project manager was a party. The Trustee shall also ensure that the earlier project manager continues to be liable for all its acts of omissions and commissions for the period during which it served as project manager, notwithstanding its termination.

(xi). The Trustee shall ensure that in case of change in control of the Project Manager, written consent is obtained from the concessioning authority(ies) in terms of the concession agreement(s), prior to such change, if applicable.

(xii). The Trustee shall ensure that subscription amount is kept in a separate bank account in name of the Trust and is only utilised for adjustment against allotment of Units or refund of money to the applicant till the time such Units are allotted in the case of an unlisted Trust or listed in the case of a listed Trust and the same will be utilised for objectives of the offering as will be mentioned in the relevant offer document.

(xiii). The Trustee shall cause the books of accounts of the Trust to be in accordance with the Trust Deed.

(xiv). The Trustee shall ensure that all acts, deeds and things are done for the attainment of the Investment Objectives of the Trust and in compliance with the InvIT Regulations and applicable law and to secure the best interests of the Unitholders.

(xv). The Trustee shall file such reports as may be required by SEBI or any other regulatory authority or as required under the InvIT Regulations and applicable law with regard to the activities carried on by the Trust.

(xvi). The Trustee shall periodically review the status of the Unitholders' complaints and their redressal undertaken by the Investment Manager, in accordance with the InvIT Regulations.

(xvii). The Trustee and its directors, officers, employees and agents shall at all times maintain the greatest amount of confidentiality as regards the activities and assets of the Trust and such other matters connected with them and the Trust generally and shall not disclose any confidential information to any other person, other than the Investment Manager, or the Project Manager, unless such information is required to be disclosed to some regulatory authority, court or any other person under any order of court or any law in force in India.

(xviii). The assets and liabilities of the Trust shall at all times be segregated from the assets and liabilities of the Trustee and the assets and liabilities of other trusts managed by the Trustee. The assets held under the Trust shall be held for the exclusive benefit of the Unitholders and such assets shall not be subject to the claims of any creditor or person claiming under any other fund administered by the Trustee or by the Investment Manager, respectively.

(xix). The Trustee shall ensure that the Investment Manager shall ensure that a detailed valuation is undertaken of the InvIT assets by a valuer at such intervals and in the manner as may be prescribed under the InvIT Regulations and applicable law. The Trustee shall ensure that the remuneration of the valuer is not linked to or based on the value of the asset being valued.

(xx). The Trustee of the Trust shall not invest in Units of the Trust.

(xxi). The Trustee shall fulfil its obligations in terms of the InvIT Regulations.

(xxii). The Trustee shall ensure that the activity of the Trust is being operated in accordance with the provisions of the Trust Deed, the InvIT Regulations, applicable law and the InvIT Documents and in case of any discrepancy, it shall inform SEBI immediately in writing.

(xxiii). The Trustee shall maintain records in accordance with the InvIT Regulations and applicable law.

(xxiv). The Trustee shall wind up the Trust in accordance with the InvIT Regulations and applicable law. Upon winding up of the Trust, the Trustee shall surrender the certificate of registration to SEBI.

3. *Rights of the Trustee*

The Trustee shall have the following rights:

(i). The Trustee may, in the discharge of its duties, act upon any advice obtained in writing from any bankers, accountants, brokers, lawyers, professionals, consultants, or other experts acting as advisers to the Trustee.

(ii). Subject to applicable law, no Unitholder shall be entitled to inspect or examine the Trust's premises or properties (including any Holding Company and SPVs) without the permission of the Trustee, who shall give such permission, if necessary, in consultation with the Investment Manager. Further, no Unitholder shall be entitled to require discovery of any information respecting any detail of the Trust's activities or any matter which may relate to the conduct of the business of the Trust and which information may, in the opinion of the Trustee and the Investment Manager adversely affect the interest of the Unitholder.

(iii). The Trustee shall be entitled to reimburse itself and shall be entitled to charge the Trust, and shall be entitled to be indemnified and be kept indemnified from the Trust and from any distributions made by the Trust to the Unitholders, with the expenses, outgoings, taxes, levies, and liabilities (including indemnity obligations of the Trust, if any).

(iv). The Trustee may accept as sufficient evidence for the value of any investment or for the cost price or sale price thereof or for any other fact within its competence, a certificate by a valuer or any other professional person appointed by the Investment Manager for the purpose.

4. *Liabilities of the Trustee*

The liabilities of the Trustee in terms of the Trust Deed are as follows:

(i). The Trustee shall only be chargeable for such monies, stocks, funds and securities as the Trustee shall have actually received and shall not be liable or responsible for any banker, broker, custodian or other person in whose hands the same may be deposited or placed, nor for the deficiency or insufficiency in the value of any investments of the Trust nor otherwise for any involuntary loss. Any receipt signed by the Trustee for any monies, stocks, funds, shares, securities, investment or property, paid, delivered or transferred to the Trustee under or by virtue of the Trust Deed or in exercise of the duties, functions and powers of the Trustee shall effectively discharge the Trustee or the person or persons paying, delivering or transferring the same therefrom or from being bound to see to the application thereof, or being answerable for the loss or misapplication thereof provided that the Trustee and such persons shall have acted in good faith, without negligence and shall have used their best efforts in connection with such dealings and matters.

(ii). The Trustee shall not be under any liability on account of anything done or omitted to be done or suffered by the Trustee in good faith in accordance with, or in pursuance of any request or advice of the Investment Manager.

(iii). The Trustee shall not be under any obligation to institute, acknowledge the service of, appear in, prosecute or defend any action, suit, proceedings or claim in respect of the provisions hereof or in respect of the InvIT Assets or any part thereof or any corporate action which in its opinion would or might involve it in expense or liability unless the Investment Manager shall so request in writing and the Trustee is satisfied that the value of the investment is sufficient to provide adequate indemnity against costs, claims, damages, expenses or demands to which it may be put as Trustee as a result thereof. The costs in relation to such action, suit, proceedings or claims (whether undertaken upon request of Investment Manager or otherwise) incurred by the Trustee in connection with or arising out of the Trust, shall be borne by the Trust.

(iv). The Trustee shall not be liable in respect of any action taken or damage suffered by it on reliance upon any notice, resolution, direction, consent, certificate, affidavit, statement, certificate of stock, plan of reorganization or (without being limited in any way by the foregoing) other paper or document believed to be genuine and to have been passed, sealed or signed by appropriate authorities or entities.

(v). The Trustee shall not be liable to the Unitholders for doing or failing to do any act or thing which by reason of any provision of any present or future law or regulation made pursuant thereto, or of any decree, order or judgment of any court, or by reason of any request announcement or similar action (whether of binding legal effect or not) which may be taken or made by any person or body acting with or purporting to exercise the authority of any government (which legally or otherwise) it shall be directed or requested to do or perform or to forbear from doing or performing. If for any reason it becomes impossible or impracticable to carry out any of the provisions of these presents the Trustee shall not be under any liability therefore or thereby.

(vi). The Trustee shall not be responsible to any Unitholder for the authenticity of any signature affixed to any document or be, in any way, liable for any forged or unauthorized signature on or for acting upon or giving effect to any such forged or unauthorized signature. The Trustee shall be entitled but not bound to require that the signature of any Unitholder to any document required to be signed by him under or in connection with these presents shall be verified to the Trustee's reasonable satisfaction.

(vii). If the Trustee is required by the InvIT Regulations or any other applicable law to provide information regarding the Trust or the Sponsor or the Unitholders, the investments made by the Trust and income therefrom and provisions of these presents and complies with such request in good faith, whether or not it was in fact enforceable, the Trustee shall not be liable to the Unitholders or to any other party as a result of such compliance or in connection with such compliance.

(viii). The Trustee shall not incur any liability for any act or omission or (as the case may be) failing to do any act or thing which may result in a loss to a Unitholder (by reason of any depletion in the value of the InvIT Assets or otherwise), except in the event that such loss is a direct result of fraud, gross negligence or wilful default on the part of the Trustee or results from a breach by the Trustee of this Trust Deed, as determined finally by a court of competent jurisdiction.

(ix). If the Trustee engages any external advisors or experts (in accordance with the Trust Deed), to discharge its obligations under the Trust Deed, or undertakes any work (in consultation with the Investment Manager, in the interest of the Unitholders) which is not covered within the scope of work of the Trustee and such additional work is beyond the obligations of the Trustee under applicable law, the Trustee shall be entitled to recover such costs, charges and expenses which the Trustee may incur in this regard, from the funds of

the Trust. The Trustee will not be required to utilize funds held by the Trustee for any other trust for which Axis Trustee Services Limited is appointed as a trustee, for discharging its obligations as the Trustee under this Trust Deed.

(x). The liability of the Trustee shall be limited to the extent of the fee received by it, in all circumstances whatsoever except (a) in case of any negligence or misconduct or fraud on the part of the Trustee; or (b) failure to show the degree of care and diligence required under the Indian Trusts Act, 1882 while carrying out the duties of the Trustee described herein, in each case as may be determined finally by a court of competent jurisdiction.

5. *Term, discharge and removal of the Trustee and appointment of new Trustee*

(i). The Trustee shall hold the office of the Trustee until the dissolution of the Trust or the discharge of the Trustee, whichever is earlier.

(ii). The Trustee shall stand discharged as the Trustee of the Trust on the happening of any of the following events:

(a). The board of directors of the Trustee passes a resolution for the Trustee to be voluntarily wound up or any order of winding up against the Trustee is passed by any court of competent jurisdiction, in which case the Sponsor shall, within 90 business days of the notice appoint a new trustee;

(b). In the event that the Trustee desires to resign, it may submit its resignation to the Investment Manager and all the Unitholders setting out reasons for the same and may nominate a new trustee, which has consented in writing to serve as the new trustee. The Unitholders with required majority (as set out in the InvIT Regulations) may approve the aforesaid resignation. A new trustee may be appointed in its place by execution of a deed of appointment between the Investment Manager (acting on behalf of the Unitholders) and the new trustee, to hold office in its place from the date of acceptance of the resignation. The date of acceptance of the Trustee's resignation shall be deemed to be the date of discharge of the Trustee. On such appointment, the InvIT shall vest with the new trustee;

(c). If SEBI or any other governmental or regulatory authority passes a direction to remove the Trustee; or

(d). Post listing of Units on a recognised stock exchange, the Unitholders may by passing a resolution with required majority as set out in the InvIT Regulations, remove the Trustee if the Unitholders have sufficient reason to believe that the acts of the Trustee are detrimental to the interests of the Unitholders. Upon such removal, a new trustee may be appointed as the trustee of the InvIT as prescribed in the InvIT Regulations.

Provided that the Trustee shall, upon it becoming aware, promptly intimate the Trust of any event or potential event which may result in any of the foregoing events set out above.

(iii). In any event, the Trustee shall not be discharged unless a new trustee is appointed in its place and on such appointment of a new trustee the Trustee shall be deemed to have vacated office as Trustee of the Trustee.

(iv). The Trustee shall continue to be responsible and liable for all its past acts and deeds, whether by way of commission or omission, subject to the indemnity of the Trustee as provided in the Trust Deed, during its tenure as Trustee. Every new trustee shall have the powers, authorities and discretion, and shall in all respects act and be liable as if originally appointed as a Trustee under the Trust Deed.

6. *Provisions relating to Unitholders*

(i). The aggregate liability of each Unitholder shall be limited to making the Capital Contribution payable by it in respect of the Units subscribed by it. The Unitholders shall not be responsible or liable, directly or indirectly, for acts, omissions or commissions of the Trustee, the Investment Manager, the Sponsor, or any other person, whether or not such act, omission or commission, has been approved by the Unitholders in accordance with the InvIT Regulations or not.

(ii). Each Unit allotted to the Unitholders shall have one vote for any decisions requiring a vote of Unitholders.

(iii). No Unitholder shall enjoy preferential voting or any other rights over another Unitholder subject to subordinate Units being issued to the Sponsor and its Associates, as defined in the Trust Deed, where such subordinate Units shall carry only inferior voting or any other rights compared to other Units, in accordance with the InvIT Regulations and Applicable Law.

(iv). In no event shall the Trustee or the Investment Manager be bound to make payment to any Unitholder, except out of the funds held by it for that purpose under the provisions of the Trust Deed.

(v). A Unitholder whose name and account details are entered in the depository register shall be the only person entitled to be recognised by the Trustee as having a right, title, interest in or to the Units registered in his name and the Trustee shall recognise such holder as an absolute owner and shall not be bound by any notice to the contrary and shall also not be bound to take notice of or to see to the execution of any trust, express or implied, save as expressly provided or as required by any court of competent jurisdiction to recognise any trust or equity or interest affecting the title of the Units.

(vi). The Unitholders shall not give any directions to the Trustee or the Investment Manager (whether in a meeting of Unitholders or otherwise) if it would require the Trustee or the Investment Manager to do or omit doing anything which may result in:

(a). the Trust or the Trustee, in its capacity as the trustee of the Trust, or the Investment Manager, in its capacity as the investment manager of the Trust, ceasing to comply with applicable law;

(b). interference with the exercise of any discretion expressly conferred on the Trustee by the Trust Deed or the Investment Manager by the Investment Management Agreement, or the determination of any matter which requires the agreement of the Trustee or the Investment Manager, provided that nothing shall limit the right of the Unitholder to require the due administration of the Trust in accordance with the Trust Deed.

(vii). The depository register shall (save in case of manifest error) be conclusive evidence of the number of Units held by each depositor and in the event of any discrepancy between the entries of the depository register and any statement issued by the depository, the entries in the depository register shall prevail unless the depositor proves to the satisfaction of the Trustee and the depository that the depository register is incorrect.

(viii). The Unitholders shall have the right to call for certain matters to be subject to their consent, in accordance with the InvIT Regulations and applicable law.

(ix). The Unitholders may, in accordance with the provisions of the InvIT Documents and applicable law, transfer any of the Units to an investor where such investor accepts all the rights and obligations of the transferor and the Trustee or the Investment Manager shall give effect to such transfer in accordance with applicable law.

(x). No Person, other than the Sponsor, its related parties and associates ("**Investor**") shall acquire Units, which when taken together with Units held by the Investor and by persons acting in concert with the Investor exceeds 25% (twenty five percent) of the value of the outstanding Units unless prior approval of the Unitholders is obtained in accordance with the InvIT Regulations. In the event such approval is not received, the Investor shall provide an exit option to the dissenting Unitholders in terms of the InvIT Regulations and in the manner specified by SEBI.

(xi). The Trustee shall and shall ensure that the Investment Manager obtains the consent of the Unitholders for the matters prescribed under the InvIT Regulations in accordance with the provisions of the InvIT Regulations.

7. *Indemnity*

In addition to the fees, distributions and expense reimbursements herein described, the InvIT Assets shall be utilized to indemnify and hold harmless the Trustee, the Sponsor and any of their respective officers, directors, shareholders, sponsors, partners, members, employees, advisors and agents ("**Indemnified Parties**") from and against any claims, losses, costs, damages, liabilities and expenses, including legal fee ("**Losses**") suffered or incurred by them by reason of their activities on behalf of the Trust, unless such Losses resulted from fraud, gross negligence, willful default or willful misconduct or breach of any obligations or duties under applicable law by the relevant Indemnified Party, as determined finally by a court of competent jurisdiction.

8. *Termination*

The Trust is subject to dissolution and termination in accordance with and subject to the InvIT Regulations and applicable law:

(i). if the Trust fails to make any offer of Units, whether by way of public issue or private placement, within the

time period stipulated in the InvIT Regulations or any other time period as specified by SEBI, the Trust shall surrender its certificate to SEBI and cease to operate as an investment infrastructure trust, unless the period is extended by SEBI;

(ii). upon the liquidation of InvIT Assets;

(iii). if there are no projects remaining under the Trust and the Trust does not invest in any project for six months thereafter;

(iv). delisting of the Units in accordance with the InvIT Regulations; or

(v). illegality of the Trust.

C. The Investment Manager – Shrem Financial Private Limited

History and Certain Corporate Matters

Shrem Financial Private Limited is the Investment Manager for the Trust. The Investment Manager was originally incorporated under the Companies Act, 1956 as Yogita Multitrade Private Limited on August 17, 2010 at Mumbai, with corporate identity number U51101MH2010PTC206680. Subsequently, the name of the Investment Manager was changed to Shrem Financial Private Limited. A fresh certificate of incorporation consequent to the change in name of the Investment Manager was issued by the RoC on August 14, 2013. The Investment Manager's registered office is situated at 1101, Viraj Towers, Junction off Andheri Kurla Road, W.E. Highway near Land Mark Building, Andheri (E), Mumbai 400 069.

Background of the Investment Manager

The Investment Manager is held by the Chhatwal Group Trust, with Nitan Chhatwal and Hitesh Chhatwal as the beneficial owners. The Chhatwal Group Trust holds 99.90% of the equity share capital of the Investment Manager.

The principal business of the Investment Manager in terms of its memorandum of association is to:

(a). carry on the business of a 'Core Investment Company' as defined by Reserve Bank of India Act, 1934 and subject to the provisions/ directives/ notifications of Reserve Bank of India for investment in equity shares, preference shares, bonds, debentures, debt or loans in group companies including trade through block sale for the purpose of dilution and disinvestment, investment in bank deposits, money market instruments including money market mutual funds, government securities, and bonds or debentures issued by group companies, granting of loans to group companies, issuing guarantees on behalf of group companies except not to carry on any other financial activity referred to in section 45-I(C) and 45-I(F) of the Reserve Bank of India Act, 1934 and not to trade in its investments in shares, bonds, debentures, debt or loans in group companies; and

(b). to carry on the business of acting as investment manager, investment adviser, trustee, settlor, sponsor, promoter, portfolio manager, manager, administrator, attorney, agent, consultant, representative or nominee of or for any investment funds, unit trusts, private equity funds, debt funds, mutual funds, venture capital funds, alternative investment funds, hedge funds, collective investment schemes, taxable or tax exempt funds, trusts, pooled investment vehicles, special purpose vehicles, infrastructure investment trusts, real estate investment trusts, or any other portfolio of securities, properties and/or assets of any kind, including any pension, provident fund or superannuation fund set up, formed or established in India or in any other country by the Company or by any other person including bodies corporate, limited liability partnerships, partnerships, trusts, societies, associations of persons, or by government, state, local authority, institute (whether incorporated or not) of any other agency or organization with respect to any class of assets, and to thereby settle, administer, manage and deploy funds, acquire, take up, manage, invest, hold, sell, deal or dispose of all or any property, investments, securities or other assets of any kind whatsoever.

The Investment Manager has been engaged in the infrastructure business since 2011. The Investment Manager, through its erstwhile subsidiary, Shrem Resort Private Limited (now Zon Hotels Private Limited), developed the Novotel Goa Shrem Hotel and the Grand Mercure Goa Shrem Resort between January 2011 – September 2017. It successfully operated the two hotels until September 2017 and subsequently sold the hotels and the Investment Manager subsequently divested its entire shareholding in Shrem Resort Private Limited (now Zon Hotels Private Limited).

Board of Directors of the Investment Manager

The board of directors of the Investment Manager is entrusted with the responsibility for the overall management of the Investment Manager. Please see below the details in relation of the board of directors of the Investment Manager:

Sr. No.	Name	DIN
1.	Nitan Chhatwal	00115575
2.	Smita Chhatwal	00116943
3.	Nikhil Pareek	07083015
4.	Pradeep Singh	00304825
5.	Suneet Maheshwari	00420952
6.	Anurag Kumar Sachan	08197908

Brief Biographies of the Directors of the Investment Manager

Please see below brief biographies of the directors of the Investment Manager:

1. **Mr. Nitan Chhatwal** was a director on the board of Shrem Resort Private Limited (now Zon Hotels Private Limited) from August 2010 to November 2017, and was involved in the development and operations of the Novotel Goa Shrem Hotel and Grand Mercure Goa Shrem Resort during January 2011 to September 2017. He has also been on the board of directors of the Sponsor since February 2015 to March 2017 and from June 2019 until date, and as a director of the Sponsor, he assisted and participated in the renovation and modernisation of Dr. Balabhai Nanavati Hospital during the period of March 2015 to March 2017. Further, as a director of the Sponsor, he continues to be involved in strategic activities relating to the road projects acquired and operated by Shrem Roadways Private Limited ("**SRPL**"), Shrem Tollway Private Limited ("**STPL**") and Shrem lnfraventure Private Limited ("**SIPL**", and together with STPL and SRPL, the "**Holdcos**"), subsidiaries of the Sponsor. Further, for a period of almost 2.75 years, i.e. from March 2015 to December 2017, Mr. Chhatwal, through the Sponsor, invested in a company named Radiant Life Care Mumbai Private which was engaged in a business of expanding, equipping, operating, upgrading, managing and administering work of Dr. Balabhai Nanavati Hospital. For a period of almost three years, i.e. from August 2017 to September 2020, Mr. Chhatwal, through a family trust, namely Krisharya Trust, invested in Route Mobile Limited ("**RML**"), a telecom services company, and divested its stake through a private sale just before the initial public offering of RML. Mr. Nitan Chhatwal had been the co-promoter of Viraj Group of Companies. Mr. Nitan Chhatwal exited from Viraj Group of Companies in 2010 and set up the family office as Shrem group. Accordingly, Mr. Nitan Chhatwal has over ten years of experience in the infrastructure sector. He is on the board of directors of several companies including Star Cultivation Private Limited, Shrem Offshore Wind Private Limited, Shrem Infraventure Private Limited, Shrem Tollway Private Limited, Shrem Infra Structure Private Limited, Shrem Construction Private Limited, Shrem Ajanta Infrastructure Private Limited, Luxurious Properties Private Limited, Sham Resort Hotels Private Limited, Shrem Township Development Private Limited, Flying Maya Guest House Private Limited, Shrem Hotels And Motels Private Limited, Shrem Investments Private Limited, Anekanta Realtors Private Limited, Shrem Datatower Private Limited, Shrem Tech India Private Limited, Shrem Impex Private Limited and Shrem Airport Hotels Private Limited.

2. **Mrs. Smita Chhatwal** is a director of the Investment Manager since February 1, 2019. She holds a diploma in textile designing from the South Delhi Polytechnic for Women. She is on the board of directors of several companies including Shrem Steel & Engineering Private Limited, Shrem Hallmark Alloys Private Limited, Shrem Offshore Wind Private Limited, Shrem Light Private Limited, Shrem Tollway Private Limited, Shrem Infra Structure Private Limited, Shrem Construction Private Limited, Shrem Roadways Private Limited, Rock And Arch Developers Private Limited, Shrem Airport Hotels Private Limited, Shrem Investments Private Limited, Anekanta Realtors Private Limited, Shrem Aviation Hub Private Limited and Jagdeesh Security and Services Private Limited.

3. **Mr. Nikhil Pareek** is a director of the Investment Manager since January 30, 2020. He holds a bachelor's degree in science from Jai Narain Vyas University and also holds a post graduate diploma in business administration from the Icfaian Business School. He has over 15 years of experience in the fields of banking, debt syndication, private equity, financial and management consulting in the infrastructure sector. He has worked with ICICI Bank, Yes Bank and SRB Consultancy Private Limited before starting his own consultancy practice in November 2010 under Mudra Capital Advisors Private Limited ("**Mudra Capital**"). Mudra Capital undertook consultancy, advisory and fund syndication activities in the infrastructure development space. Mudra Capital assisted in fund raising activities for various companies involved in the road sector. Thereafter, Nikhil Pareek started advising the Shrem group on its prospective investment in the infrastructure space. He is currently responsible for the management of nine of the Project SPVs acquired from DBL by virtue of serving as a director on the boards of such Project SPVs. Accordingly, Nikhil Pareek has approximately 14 years and three months of experience in the infrastructure sector. He is on the board of directors of several companies including DBL Sardarpur Badnavar Tollways Limited, DBL Silwani Sultanganj Tollways Limited, DBL Sitamau Suwasara Tollways Limited, DBL Ashoknagar Vidisha Tollways Limited, DBL Betul Sarni Tollways Limited, DBL Tikamgarh Nowgaon Tollways Limited,

Suryavanshi Infrastructure Private Limited, DBL Hata Dargawon Tollways Limited and DBL Patan Rehli Tollways Limited. Additionally, he is a designated partner of RS Infra Advisors and Consultants LLP and Romonika Food Services LLP.

4. **Mr. Pradeep Singh** is an additional director of the Investment Manager since December 29, 2020. He served as an independent director on the boards of Bharat Road Network Limited from September 2015 till September 2020. He currently serves on the board of directors of various companies, such as Nabha Power Limited, Climate Policy Initiative India Private Limited, Insaan Group Foundation and Climate Policy Foundation.

5. **Mr. Suneet Maheshwari** is an additional independent director of the Investment Manager since December 29, 2020. In the past, he was also a director on the boards of L&T Infra Debt Fund Limited from February 2013 till July 2015, and L&T Uttaranchal Hydropower Limited from November 2010 till March 2012. Currently, he serves on the board of directors of various companies, such as Mahindra Manulife Trustee Private Limited, Antony Lara Enviro Solutions Private Limited, Antony Waste Handling Cell Limited, AG Enviro Infra Projects Private Limited, and he is a designated partner in Udvik Infrastructure Advisors LLP.

6. **Mr. Anurag Kumar Sachan** is an additional independent director of the Investment Manager since December 29, 2020. In the past, he was a managing director at Dedicated Freight Corridor Corporation of India Limited, from August 2018 till August 2020. He is also a member of the Indian Council of Arbitration.

Brief profiles of the Key Personnel of the Investment Manager

Please see below brief biographies of the key personnel of the Investment Manager:

1. **Mr. Nikhil Pareek** is a director of the Investment Manager since January 30, 2020. He holds a bachelor's degree in science from Jai Narain Vyas University and also holds a post graduate diploma in business administration from the Icfaian Business School. He has over 15 years of experience in the fields of banking, debt syndication, private equity, financial and management consulting in the infrastructure sector. He has worked with ICICI Bank, Yes Bank and SRB Consultancy Private Limited before starting his own consultancy practice in November 2010 under Mudra Capital Advisors Private Limited ("**Mudra Capital**"). Mudra Capital undertook consultancy, advisory and fund syndication activities in the infrastructure development space. Mudra Capital assisted in fund raising activities for various companies involved in the road sector. Thereafter, Nikhil Pareek started advising the Shrem group on its prospective investment in the infrastructure space. He is currently responsible for the management of nine of the Project SPVs acquired from DBL by virtue of serving as a director on the boards of such Project SPVs. Accordingly, Nikhil Pareek has approximately 14 years and three months of experience in the infrastructure sector. He is on the board of directors of several companies including DBL Sardarpur Badnavar Tollways Limited, DBL Silwani Sultanganj Tollways Limited, DBL Sitamau Suwasara Tollways Limited, DBL Ashoknagar Vidisha Tollways Limited, DBL Betul Sarni Tollways Limited, DBL Tikamgarh Nowgaon Tollways Limited, Suryavanshi Infrastructure Private Limited, DBL Hata Dargawon Tollways Limited and DBL Patan Rehli Tollways Limited. Additionally, he is a designated partner of RS Infra Advisors and Consultants LLP and Romonika Food Services LLP.

2. **Mr. Shyam Sunder Malani** is the chief financial officer of the Investment Manager since February 2, 2016. He is a chartered accountant from the Institute of Chartered Accountants of India. He has over 18 years of experience in the fields of accounting, finance and taxation. He has been a director on the board of Shrem Infra Structure Private Limited (the "**Sponsor**") since March 2014, and as a director of the Sponsor, he was involved in the fund management activities of the Sponsor with respect to the investment of the Sponsor in Radiant Life Care Mumbai Private Limited from March 2015 to December 2017 and assisted and participated in the renovation and modernisation of Dr. Balabhai Nanavati Hospital during the period of March 2015 to December 2017. Further, as a director of the Sponsor, he has also been involved in the acquisition of 24 road projects with a total project cost of approximately ₹ 9,830 crores from DBL in 2017, and continues to be involved in strategic activities relating to the road projects acquired and operated by the Holdcos. Accordingly, Shyam Sunder Malani has approximately five years and six months of experience in the infrastructure sector. Prior to joining the Sponsor, he was associated with Viraj Profiles Limited as manager – finance. He is on the board of directors of several companies including DBL Hirekerur Ranibennur Tollways Limited, DBL Hassan Periyapatna Tollways Limited, DBL Mahagaon Yavatmal Highways Private Limited, DBL Yavatmal Wardha Highways Private Limited, DBL Wardha Butibori Highways Private Limited, DBL Lucknow Sultanpur Highways Limited, DBL Bankhlafata-Dogawa Tollways Limited, DBL Tikamgarh-Nowgaon Tollways Limited, DBL Ashoknagar-Vidisha Tollways Limited and DBL Mundargi Harapanahalli Tollways Limited. Additionally, he is also associated with Avyukta Investments and Advisors LLP in the capacity of a designated partner.

3. **Mr S.L. Kothari** joined the Investment Manager on November 1, 2020 as director – finance, risk and compliance. He holds a bachelor's degree in science from M.L.V. Government (Autonomous) College, Bhilwara, and is a company secretary, as well as a member of the Institute of Chartered Accountants of India. Prior to joining the Investment Manager, he served in the following organisations:
   - He served in Sanjana Cryogenic Storages Limited as chief financial officer ("**CFO**") for 9 years and four months from July 1999 till November 2008. During his tenure, he was involved in the following:
     - setting up of 1x10,000 metric tonnes of ammonia storage facilities for Indo Gulf Corporation Limited;
     - setting up of 1x10,000 metric tonnes of cryogenic storage facilities for Hind Lever Chemicals; and
     - setting up of 8.6 mega watt wind power projects.
   - He was appointed as the chief financial officer – finance & accounts of Kewal Kiran Clothing Limited in November 2008 and was serving with Kewal Kiran Clothing Limited up to October 2015;
   - Shalby Limited ("**Shalby**"), a leading chain of multi-specialty hospitals, as CFO for 2.5 years from April 2016 to August 2018; and
   - He served at MBL Infrastructures Limited as the "group CFO and executive director – finance and commercial", from August 2018 till July 2019.

   Accordingly, Mr. S.L. Kothari has approximately thirteen years of experience in the infrastructure sector.

4. **Mr. Naresh Lohiya** joined Shrem Roadways Private Limited in December 2017 in the capacity of deputy general manager (accounts) and was internally transferred to the Investment Manager in September 2020 as general manager (accounts and finance). He has been handling the accounts and taxation of the 24 Project SPVs and the three Holdcos. Previously, he has worked with Supreme Infrastructure India Limited ("**SIIL**") as senior manager (accounts) from July 2007 to November 2017. SIIL is engaged in construction and development of roads, highways, buildings and bridges. Accordingly, Naresh Lohiya has approximately thirteen years and three months of experience in the infrastructure sector.

5. **Mr. Abhimanyu Chauhan** joined Shrem Roadways Private Limited in August 2018 as toll – operations head and was internally transferred to the Investment Manager in November 2020. He has been handling the operation and maintenance of Jalpa Devi Tollways Limited having two toll plazas. He holds a bachelor's degree in arts from Maharshi Dayanand University, Rohtak. He also holds a certification from NSCE Computer Education, Narela. Previously, he worked with Intertoll ICS Cecons O&M Company Private Limited (a multi-national corporation) as a toll collector from August 2002 to 2008. From August 2010 to April 2012, he joined Pink City Expressway Private Limited, a joint venture of M/S Emirates Trading Agency LLC and M/S KMC Constructions Limited as a "lane supervisor", and was also promoted as a "toll supervisor". He joined Nagarjuna Construction Company Infra Limited, having a project named Western UP Tollways Limited in Meerut at national highway-58, as an assistant plaza manager, from April 2012 to October 2015. During his tenure, he was promoted as deputy plaza manager. He worked with Sadbhav Infrastructure Projects Limited from October 2015 to August 2018 as "plaza manager" in a special purpose vehicle named Rohtak Panipat Tollway Private Limited with two toll plazas. Accordingly, Mr. Abhimanyu Chauhan has approximately sixteen years and five months of experience in the infrastructure sector.

6. **Mr. Vaibhav Joshi** joined the Investment Manager in November 2020 in the capacity of senior technical manager. He has been overseeing maintenance and other technical activities of the 24 Project SPVs. He holds a bachelor's degree in technology (civil engineering), from Rajasthan Technical University, Kota. He has also worked with L&T Infrastructure Development Projects Limited from September 2017 to May 2018, as a maintenance engineer. He has also worked as assistant manager (technical) at Patil Rail Infrastructure Private Limited from July 2014 to August 2017. Accordingly, Mr. Vaibhav Joshi has approximately six years and six months of experience in the infrastructure sector.

7. **Mr. Tapan Kumar Raut** joined Shrem Roadways Private Limited in the capacity of manager – accounts, and was internally transferred to the Investment Manager in November 2020 as manager – accounts. He has been handling the accounts of the 24 road projects and the three Holdcos. Previously, he had worked with Meka Dredging Company Private Limited ("**Meka Dredging**") as an assistant manager – accounts, from December 2011 to April 2019. Meka Dredging is engaged in both capital dredging and maintenance dredging. Accordingly, Mr. Tapan Kumar has approximately eight years and five months of experience in the infrastructure sector.

Key Terms of the Investment Management Agreement

The Investment Manager has entered into the Investment Management Agreement, in terms of the InvIT Regulations, the key terms of which, are provided below.

1. *Powers of the Investment Manager*

The Investment Manager has been provided with various powers under the Investment Management Agreement in accordance with the InvIT Regulations, including but not limited to:

(i). The Investment Manager shall take all decisions in relation to the management and administration of InvIT Assets and the investments of the Trust as may be incidental or necessary for the advancement or fulfilment of the Investment Objectives of the Trust in accordance with the InvIT Regulations and other applicable law.

(ii). The Investment Manager shall, subject to such approval as may be required from the Unitholders, make the investment decisions with respect to the underlying assets or projects of the Trust, including any further investments or divestments, subject to InvIT Regulations and in accordance with the offer document and in this regard is also empowered to do the following acts on behalf of the Trust including:

(a). acquire, hold, manage, trade and dispose of shares, stocks, convertibles, debentures, bonds and other equity or equity-related securities and other debt or mezzanine securities of all kinds issued by any SPVs, infrastructure projects in India, whether in physical or dematerialised form, including power to hypothecate, pledge or create encumbrances of any kind on such securities held by the Trust in such Holding Companies, and/or SPVs, or infrastructure projects to be used as collateral security for any borrowings by the Trust;

(b). keep the capital and monies of the Trust in deposit with banks or other institutions, whatsoever;

(c). accept contributions;

(d). collect and receive the profit, interest, repayment of principal of debt or debt like, or equity or equity like, mezzanine securities, dividend, return of capital of any type by the Holding Companies, or SPVs, or infrastructure projects and income of the Trust as and when the same may become due and receivable;

(e). invest in securities or in units of mutual funds in accordance with the InvIT Regulations and other applicable law;

(f). invest in money market instruments including government securities, treasury bills, certificates of deposit and commercial papers in accordance with applicable law;

(g). to give, provide and agree to provide to any Holding Companies, or SPVs financial assistance in the form of investment in the Trust's debt securities or share capital of any class including ordinary, preference, participating, non-participating, voting, non-voting or other class, and in the form of investment in securities convertible into share capital; and

(h). to invest, acquire, purchase, hold, divest, sale, hypothecate, pledge or otherwise transfer land and building and immovable property of any kind including any rights and interest therein.

(iii). The Investment Manager along with the Trustee shall appoint a Project Manager for the Trust, by execution of the Project Implementation and Management Agreement.

(iv). The Investment Manager shall oversee activities of the Project Manager with respect to compliance with the InvIT Regulations and the Project Implementation and Management Agreement and in terms of the InvIT Regulations and applicable law. The Investment Manager shall obtain a compliance certificate from the Project Manager on a quarterly basis or such other intervals as may be prescribed.

(v). The Trustee authorizes the Investment Manager to do all such other acts, deeds and things as may be incidental or necessary for the advancement or fulfilment of the investment objectives of the Trust, as set out in the offer document.

(vi). The Investment Manager shall have the power to issue and allot Units in accordance with the InvIT Regulations and within such time period as may be prescribed under applicable law. The Investment Manager shall have the power to accept subscriptions to Units of the Trust and issue and allot Units to Unitholders or

such other persons and undertake all related activities under applicable law. The Investment Manager shall also have the power to refund subscription money and pay necessary interest thereon, in accordance with applicable law. Further, the Investment Manager shall, subject to and only in accordance with the terms of the InvIT Documents and applicable law, have the power to transfer the Units. The power of the Investment Manager is subject to the condition that no person, other than the Sponsor, its related parties and associates ("**Investor**") shall acquire Units, which when taken together with Units held by the Investor and by persons acting in concert with the Investor exceeds 25% (twenty five percent) of the value of the outstanding Units unless prior approval of the Unitholders is obtained in accordance with the InvIT Regulations. In the event such approval is not received, the Investor shall provide an exit option to the dissenting Unitholders in terms of the InvIT Regulations and in the manner specified by SEBI.

(vii). The Investment Manager shall cause the depository to maintain a depository register.

(viii). The Investment Manager shall make such reserves out of the income or capital as it may deem proper, and any directions of the Trustee in this behalf whether made in writing or implied from their acts shall, so far as the applicable law may permit, be conclusive and binding. Any distribution made from such reserves shall be in accordance with the InvIT Regulations.

(ix). The Investment Manager shall have the power to cause the Trust to borrow funds, including any subordinated equity, bonds or other fund from any person or authority (whether government or otherwise, whether Indian or overseas) for the purpose of the Trust and the InvIT Assets on such terms and conditions and for such periods subject to any approval of the Unitholders in accordance with and as may be required in terms of the InvIT Regulations and applicable law in case of a listed Trust. In the event that the Trust is unlisted such power of the Investment Manager shall be subject to the provisions of the Trust Deed. The Investment Manager shall also have the power to cause the Trust to create encumbrances of any kind on the InvIT Assets as collateral security for any such borrowings.

(x). The Investment Manager shall have the power to exercise all rights of the Trust in the InvIT Assets, including voting rights, rights to appoint directors, whether pursuant to securities held by it, or otherwise, in such manner as it deems to be in the best interest of the Trust, and in accordance with the InvIT Regulations and applicable law. Additionally, if the Trust has invested in infrastructure projects through the Holding Company or SPVs, then the Investment Manager, in consultation with the Trustee, shall appoint the majority of the directors of the Holding Company(ies) or the SPV(s), in accordance with the applicable law, as well as ensure that in every general meeting including the annual general meeting of any SPV or holding company, the voting of the Trust is exercised, in accordance with the InvIT Regulations and applicable law.

(xi). The Investment Manager may use the services of external advisors and rely on the information provided in the due diligence process of assessing investment proposals as it deems necessary in its sole discretion.

(xii). The Investment Manager shall have the power to employ and pay at the expense of the Trust, any agent in any jurisdiction whether attorneys, solicitors, brokers, banks, trust, companies or other agents, without being responsible for the default of any agent if employed in good faith to transact any business, including without limitation, the power to appoint agents to raise funds, or do any act required to be transacted or done in the execution of the responsibilities hereof including the receipt and payment of moneys and the execution of documents.

(xiii). The Investment Manager may appoint any custodian in order to provide custodian services, and may permit any property comprised in the Trust to be and remain deposited with a custodian or with any person or persons in India or in any other jurisdiction subject to such deposit as authorised by the Trustee and permissible under the applicable law.

(xiv). The Investment Manager, in consultation with the Trustee, shall appoint and have the power to appoint, determine the remuneration and enter into, execute, deliver and terminate all documents and agreements, any contracts, agreements, including share purchase agreement, deed of right of first offer and refusal, escrow agreements, debt documentation, underwriting agreements and other InvIT Documents, any investment pooling agreement, agreement relating to strategic investments, co-investment agreements and other any and all documents and instruments containing customary terms including any amendments or supplements thereto as may be applicable with respect to the activities pertaining to the Trust in a timely manner as per the provisions of the InvIT Regulations and applicable law. The Investment Manager shall appoint an auditor for a period of not more than five consecutive years or such period as provided in the InvIT Regulations. The Investment Manager shall have the power to determine the remuneration of the auditors in consultation with the Trustee. Provided that in the event the Investment Manager is required to take any approval of the Unitholders for approval of remuneration of the auditors or appointment of the auditors, the same shall be obtained in accordance with the requirements as set out in the InvIT Regulations. The Investment Manager

shall also have the power to determine the remuneration of the valuer. The remuneration of the valuer shall not be linked to or based on the value of the InvIT Assets being valued.

(xv). The Investment Manager shall have the power and duty to pay all such duties, fee or taxes (and any interest or penalty chargeable thereon) as well as to create any reserves for future potential tax liability (and any such interest or penalty) out of the Trust's income, in accordance with applicable law. No Unitholder will be required to make a contribution as a capital commitment to the Trust (other than the issue price for Units allotted). The Investment Manager shall exercise due care and prudence in payment of duties and taxes of the Trust and shall endeavour to ensure that there are no material outstanding dues in that behalf, except for any claim or demand made by any tax department or authority subsequently, or any amounts disputed in good faith.

(xvi). The Investment Manager shall have the power to pay Trust expenses out of the funds of the Trust, or from any or all of the InvIT Assets, in such proportion as may be determined from time to time, and the Investment Manager shall be entitled to reimbursement of any such expenditure duly incurred.

(xvii). The Investment Manager shall have the power to take the opinion of legal / tax counsel in any jurisdiction concerning any difference arising under the Investment Management Agreement or any matter in any way relating to the Investment Management Agreement or to its duties in connection with the Investment Management Agreement.

(xviii). Subject to applicable law, the Investment Manager shall have the power to:

(a). accept any property before the time at which it is transferable or payable;

(b). pay or allow any equity or claim on any evidence that it thinks sufficient;

(c). accept any composition or any security, movable or immovable, for any equity or other property;

(d). allow any time for payment of any equity; and

(e). subject to such approval as may be required from the Unitholders, compromise, compound, abandon, submit to arbitration or otherwise settle any equity account, claim or thing whatsoever relating to the Trust or the Investment Management Agreement.

(xix). Subject to the conditions laid down in any offer document and applicable law, the Investment Manager may retain the invested capital portion of any proceeds received by the Trust from any Holding Company or SPV.

(xx). The Investment Manager may make rules to give effect to, and carry out the Investment Objectives, subject to applicable law. In particular, and without prejudice to the generality of such power, the Investment Manager may provide for all or any of the following matters, namely:

(a). manner of maintaining of the records and particulars of Unitholders;

(b). norms of investment by the Trust in accordance with the Investment Objectives of the Trust and in accordance with the powers and authorities of the Trustee as set out in the Trust Deed;

(c). matters relating to entrustment, deposit or handing over of any securities or SPVs of the Trust to any one or more custodians and the procedure relating to the holding thereof by the custodian;

(d). such other administrative, procedural or other matters relating to the administration or management of the affairs of the Trust and which matters are not, by their very nature, required to be included or provided for in the Trust Deed or by the management thereof and which matters are not inconsistent with the Investment Objectives;

(e). procedure for seeking the vote of the Unitholders either by calling a meeting or through postal ballot or otherwise; and

(f). procedure for summoning and conducting of meetings of Unitholders.

(xxi). Subject to applicable law, no Unitholder shall be entitled to inspect or examine the Trust's premises or properties without the prior permission of the Investment Manager. Further, no Unitholder shall be entitled to require discovery of any information with respect to any detail of the Trust's activities or any matter which may be related to the conduct of the business of the Trust and which information may, in the opinion of the

Investment Manager, adversely affect the interest of other Unitholders.

(xxii). In the event the Trust is listed, the Investment Manager may buyback the Units from the Unitholders at the end of the term of the Trust or any other time or in any other manner in accordance with applicable law, if so directed by the Trustee.

(xxiii). The Investment Manager shall provide the Trustee with advice and recommendations regarding the extension of loans from the Trust to the holding company and SPV and also subscription to debt securities or quasi-debt securities or any similar kind of securities issued by the Holding Company and SPV from the Trust or extension of loans from the Trust in compliance with applicable law.

(xxiv). The Investment Manager shall also have the following powers and authorities:

(a). to institute, conduct, compromise, compound, or abandon any legal proceedings for or on behalf of or in the name of the Trust, and to defend, compound or otherwise deal with any such proceedings against the Trust or the Investment Manager or their officers or concerning the affairs of the Trust, and also to compound and allow time for payment or satisfaction of any equity due and of any claims or demands by or against the Trust and to refer any differences to arbitration and observe and perform any awards thereof;

(b). to make and give receipts, releases and other discharges for moneys payable to the Trust and for the claims and demands of the Trust;

(c). to enter into all such negotiations and contracts, and, execute or terminate and do all such acts, deeds and things for or on behalf of or in the name of the Trust as it may consider expedient for or in relation to any of the matters or otherwise for the purposes of the Trust;

(d). to ascertain, appropriate, declare and distribute or reinvest the surplus generally or under the Trust, to determine and allocate income, profits and gains in respect of the Trust to and amongst the Unitholders, to carry forward, reinvest or otherwise deal with any surplus and to transfer such sums, as it may deem fit, to one or more reserve funds which may be established by it;

(e). to open one or more bank accounts and demat accounts for the purposes of the Trust, to deposit and withdraw money, and fully operate and manage any such account fully;

(f). to sign, seal, execute, deliver and register according to applicable law all deeds, documents, and assurances in respect of the Trust;

(g). pay out of the income of the Trust, after deducting all expenses, the income and other distributions in accordance with the InvIT Regulations and applicable law;

(h). take into their custody or control all the capital, assets, property of the Trust and hold the same in trust for the Unitholders in accordance with the Trust Deed, applicable law and the InvIT Regulations;

(i). generally to exercise all such powers as it may be required to exercise under the InvIT Regulations and applicable law for the time being in force and do all such matters and things as may promote the Investment Objectives of the Trust or as may be incidental to or consequential upon the discharge of its functions and the exercise and enforcement of all or any of the powers and rights under the Investment Management Agreement, applicable law and the InvIT Regulations;

(j). in accordance with applicable law, together with the Trustee, initiate, prosecute or defend any action or other proceedings in any court of law or through arbitration or in any other manner for recovery of debts or sums of money, right, title or interest, property, claim, matter or thing whatsoever now or hereafter to become due or payable or in any way and belonging to the Trust by any means or on any account whatsoever in respect of and pertaining to the investments made by it and the same actions or proceedings or suits to discontinue or settle, as it shall in its best judgment or discretion deem fit;

(k). to issue statement of accounts or Unit certificates (if requested) to the Unitholders on behalf of the Trustee in accordance with applicable law. To submit Units for dematerialisation and to make all applications and execute all documents with the depositories and depository participants as may be necessary in this regard;

(l). to set up such systems and procedures, and submit such reports, as may be required by the Trustee as necessary for effective monitoring of the functioning of the Trust.

2. *Duties of the Investment Manager*

The Investment Manager shall perform its duties as required under the Investment Management Agreement in accordance with the InvIT Regulations, including but not limited to:

(i). The Investment Manager shall use best endeavours to carry on and conduct its business in a proper and efficient manner in the best interest of the Unitholders. Further, it shall at all times exercise due diligence in carrying out its duties and protecting the interest of the Unitholders.

(ii). The Investment Manager shall coordinate with the Trustee, as may be necessary, with respect to the operations of the Trust.

(iii). The Investment Manager shall appoint an eligible Valuer and ensure that the valuation of the InvIT Assets is done by the valuer(s) in accordance with the InvIT Regulations and at the frequency as required under the InvIT Regulations. The Investment Manager shall submit the valuation reports to the Trustee as required under the InvIT Regulations and within the timelines prescribed in the InvIT Regulations. In the event the Trust is listed, the Investment Manager shall also submit the valuation reports to the stock exchange(s) in accordance with the InvIT Regulations and applicable law.

(iv). The Investment Manager shall arrange for adequate insurance coverage for the InvIT Assets in accordance with the InvIT Regulations. The Investment Manager shall ensure that InvIT Assets held by the holding companies or the SPVs are adequately insured.

(v). The Investment Manager shall maintain proper books of accounts, documents and records with respect to the Trust, to give a true, fair and accurate account of the investments, expenses, earnings, profits etc. of the Trust. The financial year of the Trust shall begin from the date of the Trust Deed and shall end on the immediately succeeding 31st of March and on the 31st of March in each succeeding year, unless otherwise determined. The Investment Manager shall ensure that audit of the accounts of the Trust by the auditors is undertaken in accordance with the InvIT Regulations and such report is submitted to the stock exchange(s) within the time stipulated by the stock exchange(s), if any, and in accordance with the InvIT Regulations.

(vi). The Investment Manager shall declare distributions to Unitholders in accordance with the InvIT Regulations. Subject to applicable law, such percentage of the net distributable cash flows of the SPVs shall be distributed to the Trust in terms of the InvIT Regulations. Such declared distributions shall be made within the time period prescribed by the InvIT Regulations.

(vii). The Investment Manager shall convene meetings of the Unitholders and maintain records pertaining to the meetings in accordance with the InvIT Regulations.

(viii). The Investment Manager shall intimate the Trustee prior to any change in control of the Investment Manager to enable the Trustee to seek prior approval from the Unitholders as required in accordance with the InvIT Regulations, and prior approval from SEBI, if required under applicable law, and shall ensure that no such change is given effect to until such prior approval has been obtained, or the Investment Management Agreement is terminated and a new investment manager has been appointed in accordance with the Investment Management Agreement, or in compliance with any other requirement under the InvIT Regulations and applicable law.

(ix). The Investment Manager will monitor the Trust, including monitoring current and projected financial position of the Trust and the InvIT Assets, including the SPVs. The Investment Manager shall place before its board of directors, a report on the activity and performance of the Trust, in accordance with the InvIT Regulations. The Investment Manager shall designate an employee or a director as the compliance officer for monitoring of compliance with the InvIT Regulations and any circulars or guidelines issued thereunder and intimating SEBI in case of non-compliance.

(x). The Investment Manager shall maintain records pertaining to the activity of the Trust in terms of the InvIT Regulations.

(xi). The Investment Manager shall manage the Trust in accordance with the InvIT Regulations and the Investment Objectives of the Trust, and shall ensure that the investments made by the Trust are in accordance with the investment conditions enumerated in the InvIT Regulations, applicable law and in accordance with the Investment Objectives.

(xii). The Investment Manager shall review the transactions carried out between the Project Manager and its

associates and where the Project Manager has advised that there may be a conflict of interest, shall obtain confirmation from a practising chartered accountant or a valuer, as applicable, that such transaction is on an arm's length basis.

(xiii). The Investment Manager shall ensure adequate and timely redressal of all Unitholders' grievances pertaining to the activities of the Trust in accordance with the InvIT Regulations and applicable law.

(xiv). The Investment Manager shall submit to the Trustee:

(a). quarterly reports on the activities of the Trust including receipts for all funds received by it and for all payments made, status of compliance with the InvIT Regulations specifically Regulation 18, 19 and 20 of the InvIT Regulations, performance report, status of development of under-construction projects, within the time period specified under the InvIT Regulations;

(b). valuation reports as required under the InvIT Regulations within the time period specified under the InvIT Regulations;

(c). proposal or decision to acquire, sell or develop, or bid for any asset or project or expand existing completed assets or projects along with rationale for the same;

(d). details of any action which requires approval from the Unitholders as may be stipulated under the InvIT Regulations;

(e). details of transactions it enters into with its associates;

(f). details of any other material fact including change in its directors, change in its shareholding, any legal proceedings that may have a significant bearing on the activity of the Trust, within such period as stipulated under applicable law;

(g). such information, document and records as pertaining to the activities of the Trust as may be required under the InvIT Regulations and as may be reasonably necessary for the Trustee with respect to its responsibilities under the Trust Deed, the InvIT Regulations and applicable law; and

(h). such other information, document and records as pertaining to its activities, obligations, duties and responsibilities under the Investment Management Agreement, the InvIT Regulations and applicable law, as may be reasonably necessary for, and sought by, the Trustee.

In the event of failure of the Investment Manager to submit information or reports as specified above in a timely manner and in terms of the InvIT Regulations, the Trustee shall intimate SEBI.

(xv). The Investment Manager shall submit to the Unitholders such information, document and records as pertaining to the activities of the Trust or having a bearing on the operation or performance of the Trust as may be required under the InvIT Regulations.

(xvi). The Investment Manager shall be responsible for all activities pertaining to the offer, issue and listing of the Units of the Trust, as applicable, in accordance with applicable law, including:

(a). filing of offer document (as defined in the Investment Management Agreement) with SEBI;

(b). filing the offer document with the stock exchange(s), in the event the Trust is listed or proposes to be listed, within the prescribed time period;

(c). dealing with all matters up to the allotment of Units to the Unitholders;

(d). obtaining in-principle approval and final listing and trading approval from the designated stock exchange, in the event the Trust is listed or proposes to be listed; and

(e). dealing with all matters relating to the issue and listing of the Units as specified under Chapter IV of the InvIT Regulations and all matters relating to the offer and issue of Units under Chapter VIA of the InvIT Regulations and any guidelines as may be issued by SEBI in this regard, as applicable. In the event the Trust is listed, the Trust shall also comply with the minimum public holding for the Units and minimum number of Unitholders as prescribed under the InvIT Regulations.

(xvii). The Investment Manager shall also ensure that all relevant provisions of the InvIT Regulations and applicable

law have been complied with and all statements and disclosures made in any offer document are material, true, correct, not misleading and are adequate disclosures in order to enable the investors to make an informed decision and are in accordance with the InvIT Regulations and applicable law, and such offer document should not contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(xviii). In the event the Trust is listed and in case of occurrence of any event specified in Regulations 17(1)(a) to 17(1)(g) of the InvIT Regulations, the Investment Manager shall apply for delisting of units of the Trust to SEBI and the designated stock exchange in accordance with the InvIT Regulations and applicable law.

(xix). The Investment Manager shall within the time period prescribed under the InvIT Regulations, submit an annual report to all the Unitholders electronically or provide physical copies, and to the designated stock exchange.

(xx). In the event the Trust is listed, the Investment Manager shall, in accordance with the requirements of the InvIT Regulations and other applicable law, including any requirements prescribed by SEBI or the stock exchange(s) from time to time, shall disclose half-yearly reports within the time period prescribed under the InvIT Regulations to the stock exchange(s) and provide any information having bearing on the operation or performance of the Trust, as well as price sensitive information and other information that is required in terms of the InvIT Regulations and applicable law.

(xxi). The Investment Manager will also have the following duties and obligations:

(a). ensure that computation and declaration of Net Asset Value of the Trust is based on the valuation done by the valuer in accordance with the InvIT Regulations and applicable law;

(b). maintain regular interaction with the Trustee regarding performance of the Trust and providing the Trustee with any information in relation to the operations of the Trust as maybe required under applicable law;

(c). conducting its affairs and the affairs of the Trust in such a manner that no Unitholder will have any personal liability (except to the extent of their Unitholding, where such Unit is partly paid) with respect to any liability or obligation of the Trust;

(d). keeping the Unitholders of the Trust informed and updated on investment activities of the Trust in accordance with the terms of the InvIT Documents;

(e). collecting all dividends, fee, property and other payments due and receivable by the Trust declaring distribution to the Unitholders in the manner set out in the Trust Deed and in terms of the InvIT Regulations and applicable law;

(f). to ensure that no commission or rebate or any other remuneration, arising out of transactions pertaining to the Trust is collected by it or its associates, other than as specified in the offer document or any other document as may be specified by SEBI for the purpose of the issue of the Units of the Trust;

(g). to ensure that the InvIT Assets including the Holding Companies and the SPVs, have proper legal titles, to the extent applicable, and that all the material contracts entered into on behalf of the Trust or the InvIT Assets are legal, valid, binding and enforceable by and on behalf of the Trust;

(h). to ensure that the activities of the intermediaries or agents or service providers appointed by it are in accordance with the InvIT Regulations or any guidelines or circulars issued thereunder;

(i). to ensure that any possible conflict of interest involving its role as Investment Manager is reported to the Trustee;

(j). to ensure that disclosures or reporting to Unitholders, SEBI, the Trustee and the designated stock exchange(s) are in accordance with the InvIT Regulations and applicable law;

(k). provide SEBI, the designated stock exchange and Trustee, where applicable, such information as may be sought by SEBI or by the Designated Stock Exchange or Trustee pertaining to the activity of the Trust;

(l). to inform the Trustee in writing about any change in the representations and warranties provided under

the Investment Management Agreement; and

(m). taking any other actions reasonably incidental to any of the foregoing, or necessary or convenient in order to fully effect or evidence any action or transaction contemplated under the Investment Management Agreement.

(xxii). The Investment Manager shall provide to the Trustee such assistance as may be required by the Trustee in fulfilling its obligation towards the Trust under applicable law or as may be required by any regulatory authority with respect to the Trust.

3. *Liabilities of the Investment Manager*

The liabilities of the Investment Manager in terms of the Investment Management Agreement are as follows:

(i). The Investment Manager shall not be liable in respect of any action taken or damage suffered by it on reliance upon any notice, resolution, direction, consent, certificate, affidavit, statement, certificate of stock, plan of reorganization or, without being limited in any way by the foregoing, other paper or document believed to be genuine and to have been passed, sealed or signed by appropriate authorities or entities.

(ii). The Investment Manager shall not be liable to the Unitholders for doing or failing to do any act or thing which by reason of any provision of any present or future law or regulation made pursuant thereto, or of any decree, order or judgment of any court, or by reason of any request, announcement or similar action, whether of binding legal effect or not, which may be taken or made by any person or body acting with or purporting to exercise the authority of any government (legally or otherwise) it shall be directed or requested to do or perform or to forbear from doing or performing. If for any reason it becomes impossible or impracticable to carry out any of the provisions of the Investment Management Agreement, the Investment Manager shall not be under any liability. However, it shall duly inform the Trustee and the Unitholders of the same.

(iii). The Investment Manager shall not be liable to the Unitholder or any of them or to any other party as a result of such compliance or in connection with such compliance if the Investment Manager is required by the InvIT Regulations or any other applicable law to provide information regarding the Trust or the Unitholders, the Trust investments and income therefrom and provisions of these presents and complies with such request in good faith, whether or not it was in fact enforceable.

(iv). The Investment Manager shall not incur any liability for any act or omission which may result in a loss to a Unitholder by reason of any depletion in the value of the InvIT Assets or otherwise, except in the event that such loss is a result of fraud or gross negligence or wilful default on the part of the Investment Manager, or where the Investment Manager fails to exercise due care in relation to its obligations under this Agreement.

(v). The Investment Manager shall be liable to pay interest to the Unitholders at the rate as may be prescribed in the InvIT Regulations until the distribution is made, and such interest shall not be recovered in the form of fee or any other form payable to the Investment Manager by the Trust.

(vi). The Investment Manager shall not be liable to any Unitholder for the authenticity of any signature or of any seal affixed to any endorsement or other document affecting the title to or the transmission of Units or interests in the Trust or of any investments of the Trusts or be in any way liable for any forged or unauthorized signature or seal affixed to such endorsement, transfer or other document, or for acting upon or giving effect to any such forged or unauthorized signature or seal. The Investment Manager shall be bound to require that the signature of any Unitholder to any document required to be signed by such Unitholder, under or in connection with these presents shall be verified to its reasonable satisfaction.

(vii). The Investment Manager shall continue to be liable for all of its acts of omission and commission with respect to the activities of the Trust, notwithstanding surrender of registration of the Trust to SEBI.

4. *Indemnity*

In addition to the fee, distributions and expense reimbursements herein described, the Trustee shall, from the InvIT Assets, indemnify and hold harmless the Investment Manager and its respective officers, directors, shareholders, partners, members, employees, advisors and agents ("**Indemnified Parties**") from and against any claims, losses, costs, damages, liabilities, suits, proceedings and expenses, including legal fee ("**Losses**") suffered or incurred by them by reason of their activities on behalf of the Trust, unless such Losses have resulted from fraud, gross negligence, wilful default or wilful misconduct or breach of any obligations or duties under applicable law by the relevant Indemnified Party, as determined by a court of competent jurisdiction.

The Trustee, its directors, employees and officers ("**Trustee Party**") shall be indemnified by the Investment Manager against any and all direct and actual losses, actions, claims, suits, proceedings, damages, liabilities, costs and expenses including legal fee, incurred or suffered by the Trustee Party in connection with the breach of any of the terms of the Investment Management Agreement by the Investment Manager, or failure in furnishing information required by SEBI or any regulatory authority with respect to the Trust, or furnishing incorrect information by the Investment Manager under the InvIT Regulations or related to Trust including in any offer document, or arising out of gross negligence, wilful default or misconduct or fraud on part of the Investment Manager, in carrying out its obligations under the Investment Management Agreement, Trust Deed, the other InvIT Documents, any information memorandum, offer document and applicable law. The Trustee acknowledges and agrees that the aggregate maximum liability of the Investment Manager in each financial year, shall be limited to the aggregate fee paid to the Investment Manager for the immediately preceding one financial year, in accordance with the terms of the Investment Management Agreement, provided that such aggregate maximum liability shall not be applicable in the event such liability of the Investment Manager to indemnify the Trustee Party for losses or damages suffered arises out of any gross negligence, willful default or misconduct or fraud of the Investment Manager, as determined by a court of competent jurisdiction.

5. *Termination*

The Investment Management Agreement shall be effective from the date of execution of the Investment Management Agreement and shall terminate in accordance with the terms of the Investment Management Agreement. The appointment of the Investment Manager may be terminated by the Trustee or the Unitholders in accordance with the procedure specified under the InvIT Regulations.

(i). The Unitholders, other than any party related to the transactions and its associates holding not less than such percentage by value as specified under the InvIT Regulations, may apply in writing to the Trustee for removal of the Investment Manager.

(ii). Subject to the approval of Unitholders (if required) and compliance with other requirements under applicable law, the Investment Management Agreement may be terminated:

(a). by the Investment Manager by delivery of a written notice of 30 (thirty) business days to the Trustee, subject to appointment of new Investment Manager in accordance with the Investment Management Agreement and the InvIT Regulations; or

(b). by the Trustee by delivery of a written notice to the Investment Manager at any time, upon breach of any of the terms, covenants, conditions or provisions of the Investment Management Agreement by the Investment Manager and a failure of the Investment Manager to cure the said breach within a period that is earlier of: (a) the period stipulated under applicable law, or (b) 60 business days; or such other period as may be mutually agreed to cure such breach; or

(c). by any party to the Investment Management Agreement by delivery of a written notice to the other party upon the bankruptcy of such other party, or if winding up or liquidation proceedings are commenced against such other Party, and such proceedings persist for a period of more than three months.

(iii). After prior approval from the Unitholders and SEBI (in the event the Trust is listed) in accordance with the InvIT Regulations, for the change in the Investment Manager due to removal or otherwise, the Trustee shall appoint a new investment manager and execute a new investment management agreement within three months from the termination of the previous investment management agreement in accordance with applicable law. The Trustee shall also ensure that the new investment manager stands substituted as a party in all documents to which the Investment Manager was a party, in relation to the Trust in its capacity as the Investment Manager. The Investment Manager shall remain in office until the appointment of a new investment manager. The Investment Manager shall continue to be liable for all of its acts, omissions and commissions during its tenure as Investment Manager, notwithstanding the termination.

(iv). Upon removal or replacement of the Investment Manager in accordance with the InvIT Regulations, the Investment Manager shall, within a period of 30 (thirty) business days, transfer custody of the Trust to the Trustee and give the Trustee all books of accounts, correspondence, documents and records relating to the Trust which the Investment Manager has in its possession. In the event of removal or resignation of the Investment Manager, the Investment Manager shall be entitled to receive management fee only up to the date of such removal or resignation.

Notwithstanding anything contained hereinabove, (i) in the event that the offer of Units does not occur within the time period stipulated in the InvIT Regulations or such other date as may be mutually agreed to between the Investment Manager and the Trustee, or (ii) in the event of cancellation of registration of the Trust by SEBI,

or (iii) winding up of the Trust, then the Investment Management Agreement shall automatically terminate without any liability on any party.

D. The Project Manager – Shrem Road Projects Private Limited

History and Certain Corporate Matters

Shrem Road Projects Private Limited is the Project Manager in respect of the Trust. The Project Manager was originally incorporated under the Companies Act, 1956 as Suswagat Buildcon Private Limited on May 24, 2013 at Mumbai, with corporate identity number U45100MH2013PTC243565. Subsequently, the name of the Project Manager was changed to Shrem Oil and Gas Private Limited. A fresh certificate of incorporation consequent to the change in name of the Investment Manager was issued by the RoC on September 30, 2016. Subsequently, the name of the Project Manager was further changed to Shrem Road Projects Private Limited. A fresh certificate of incorporation consequent to the change in name of the Investment Manager was issued by the RoC on May 24, 2018. The Project Manager's registered office is situated at 1101 Viraj Towers, Junction off Andheri Kurla Road W. E. Highway, Andheri (East), Mumbai 400 069.

Background of the Project Manager

The Project Manager will be looking over the operation and maintenance of the entire portfolio of the 24 projects proposed to be transferred to the InvIT.

Neither the Project Manager nor any of the promoters or directors of the Project Manager (i) are or have been debarred from accessing the securities market by SEBI; (ii) are or have been a promoter, director or person in control of any other company or a sponsor, investment manager or trustee of any other infrastructure investment trust or an infrastructure investment trust which is debarred from accessing the capital market under any order or direction made by SEBI; and/or (iii) are or have been declared a wilful defaulter by any bank or financial institution or consortium thereof in accordance with the guidelines on wilful defaulters published by the RBI.

Key terms of the Project Implementation and Management Agreements

The Project Manager shall enter into the Project Implementation and Management Agreements for the Project SPVs, in terms of the InvIT Regulations, the key terms of each of which, are provided below:

1. Scope of Services

The scope of services of the Project Manager are as follows:

(i). The Project Manager shall, either directly or through the appointment and supervision of appropriate agents (including the O&M team and any other third parties appointed by the relevant Project SPV), provide or procure the performance of all such services (the "**Services**") as are required to enable the relevant Project SPV to perform and fulfil its operation and maintenance ("**O&M**") related obligations under and in compliance with the Concession Agreement ("**O&M Obligations**").

(ii). All costs and expenses payable to any third party (recommended by the Project Manager and engaged by the relevant Project SPV) shall be borne and paid by the relevant Project SPV in accordance with the terms and conditions of the contract entered into between the relevant Project SPV and such third party.

(iii). The Project Manager shall, either directly or through the appointment and supervision of appropriate agents (including the O&M team and any other third parties appointed by the relevant Project SPV), ensure and procure the performance of the Services for discharge of obligations under the Concession Agreement and the InvIT Regulations.

2. Functions, Duties and Responsibilities of the Project Manager

The functions, duties and responsibilities of the Project Manager in terms of the Project Implementation and Management Agreements are as follows:

(i). The Project Manager, either directly or through the appointment and supervision of agents (including the O&M team and any other third parties appointed by the relevant Project SPV), shall: (a). supervise the operations and management of the Project; and (b). be liable for making arrangements for fulfilment of the Services either directly or through the appointment and supervision of agents, if any, as may be necessary for discharge of its duties under the terms of the Project Implementation and Management

Agreement and under applicable law ("**Applicable Law**").

(ii). The Project Manager shall, either directly or through appropriate agents (including the O&M team), oversee the progress of development, approval status and other aspects of the Project, or progress of development of any expansion of the Project in accordance with the Concession Agreement, or, progress of development of any additional works or assets proposed to be executed by the relevant Project SPV (collectively, the "**SPV Under-construction Works**"), until their respective completion in accordance with the Concession Agreement, including the supervision of the agents appointed for such purpose.

(iii). The Project Manager shall, either directly or through appropriate agents (including the O&M team), discharge its obligations in respect of achieving timely completion, implementation and development of the relevant Project SPV's Under-construction Works in accordance with the Concession Agreement, the Project Implementation and Management Agreement and Applicable Law.

(iv). The Project Manager acknowledges that the Trustee and the Investment Manager will oversee the activities of the Project Manager in accordance with the InvIT Regulations and accordingly, the Project Manager shall extend complete assistance and cooperation for this purpose. Further, the Project Manager shall provide compliance certificate(s) to the Investment Manager and the Trustee in accordance with Applicable Law, in the form, if any, prescribed by SEBI or any other regulatory authority.

(v). The Project Manager shall promptly notify the Investment Manager regarding any deficiency in the services of the O&M team along with an assessment report covering, amongst others, the details of deficiency in service, remedial measures and financial impact on the relevant Project or the relevant Project SPV. Any such deficiency shall be remedied in accordance with the terms of the O&M Agreement, the Concession Agreement and Applicable Law.

(vi). Other than on account of any non-compliance or deficiency, the Project Manager shall promptly notify the Investment Manager regarding any proposed change in the O&M team along with an assessment report covering, amongst other things, rationale for the change and its assessment of the same and professional competence of the persons proposed to be appointed to the O&M team. The Project Manager shall not grant consent for any change in the O&M team without the approval of the Investment Manager.

(vii). The Project Manager shall provide the Investment Manager details of transactions carried out between itself and its associates and disclose any conflict of interest in such cases to the Investment Manager, in accordance with the InvIT Regulations and Applicable Law.

(viii). The Project Manager shall provide to the Trustee and Investment Manager or to such other person as the Trustee or the Investment Manager may authorise and direct, all information that may be necessary for each of them to maintain the records of the InvIT and as may be required for making submissions to SEBI or other governmental authority as per the Project Implementation and Management Agreement, including with respect to relevant approvals, consents and other documents required in relation to the Project and the reporting requirements under the InvIT Regulations, in a proper and timely manner, and in the format prescribed (if any), as required by the Trustee or the Investment Manager.

(ix). The Project Manager shall appoint one of its qualified employees acceptable to the Investment Manager and the relevant Project SPV with adequate and appropriate experience as a principal contact for the board of directors of the relevant Project SPV, the Trustee and the Investment Manager in relation to the Project and the Services. The principal contact shall have full authority, to receive directions and instructions from the Investment Manager and to take action in relation to and ensure compliance with such directions and instructions and report back to the Trustee and the Investment Manager.

(x). The Project Manager shall, at all times, ensure that the transactions or arrangement entered into by the Project Manager with a related party is on an arm's-length basis. The Project Manager shall promptly inform the Trustee and the Investment Manager regarding any actual (or potential) conflict of interest and shall obtain and submit to the Investment Manager a certificate issued by a practicing chartered accountant or a valuer (as applicable) confirming that such transaction is on arm's length basis.

(xi). The Project Manager shall promptly inform the parties to the Project Implementation and Management Agreement in writing of any act, occurrence or event, which the Project Manager believes is reasonably likely to prejudice the financial viability, quality, function or operation of the Project.

(xii). If any defects are found in provision of Services, the Project Manager shall promptly, in consultation and agreement with the other parties to the Project Implementation and Management Agreement,

regarding appropriate remedying of the defects, and at its own cost, repair, replace or otherwise make good (as may be mutually agreed by the Project Manager, Investment Manager and the relevant Project SPV) such defects, provided that the obligation of the Project Manager under the Project Implementation and Management Agreement whether to make good the defects or damages caused by such defect shall be subject to the maximum cap on the liability of the Project Manager as set out in the Project Implementation and Management Agreement.

(xiii). The duties of Project Manager shall also include the following:

(a). prudently exercise due diligence and vigilance in carrying out its duties and protecting the interests of the relevant Project SPV;
(b). comply with the InvIT Regulations and take all actions as may be required to be taken in accordance with the InvIT Regulations as applicable to the Project Manager;
(c). keeping the Investment Manager informed on all matters which have a material bearing on the operations of the relevant Project SPV;
(d). where required, liaising with governmental authorities in respect of its obligations under the Project Implementation and Management Agreement as applicable to the Project Manager;
(e). take all steps to mitigate the risks which may be encountered by the InvIT in respect of the relevant Project SPV;
(f). keeping proper records for actions taken in respect of the relevant Project SPV; and
(g). complying with the instructions of the Investment Manager and the Trustee, in accordance with the InvIT Regulations.

(xiv). The parties to the Project Implementation and Management Agreements may, from time to time, agree to provisions for additional services to be rendered by the Project Manager. If, in the assessment of the Project Manager, additional services are required for the purposes of carrying out its duties and obligations under the Project Implementation and Management Agreement and Applicable Law, the Project Manager shall notify the parties to the Project Implementation and Management Agreement in writing of such requirement including the fee payable and terms and conditions for such additional services, and obtain prior written approval of the parties to the Project Implementation and Management Agreement in this regard.

(xv). In case of any inconsistency or discrepancy between the Project Implementation and Management Agreement and the O&M Agreement, the Project Manager shall bring such inconsistency to the notice of the Trustee and the Investment Manager. The Investment Manager, in consultation with the Trustee, shall issue instructions for resolving the inconsistency. The Project Manager shall be bound to comply with the instructions of the Trustee and the Investment Manager, provided that if any such compliance requirement has financial implications, the same shall be mutually discussed and agreed without casting any additional financial burden on the Project Manager which is not contemplated herein.

(xvi). Notwithstanding anything to the contrary contained in the Project Implementation and Management Agreement, nothing contained in the Project Implementation and Management Agreement shall be construed to limit or restrict the performance of any duties or obligations of the Project Manager, Investment Manager or the Trustee contained in the Concession Agreement, InvIT Regulations and Applicable Law.

(xvii). During the term of the Project Implementation and Management Agreement, in the event the representations provided by the Project Manager under the Project Implementation and Management Agreement, become untrue, incorrect or incomplete in any respect, the Project Manager shall forthwith inform the Trustee and Investment Manager of such event.

3. Indemnity

The Trustee, the Investment Manager, the relevant Project SPV and their respective directors, employees, officers and the Trust ("**Indemnified Parties**") shall be indemnified by the Project Manager against any actions, claims, suits, proceedings, losses, costs, damages, liabilities and expenses, including legal fee from and incurred or suffered by the Indemnified Parties in connection with the breach of any of the terms of the Project Implementation and Management Agreement by the Project Manager, or failure in furnishing information required by SEBI or any regulatory authority with respect to the Trust or the relevant Project SPV, or furnishing wrong information by the Project Manager under the InvIT Regulations or related to the Trust or the relevant Project SPV including in any offer documents as defined in the Project Implementation and Management Agreement, or arising out of gross negligence, wilful default, wilful misconduct or fraud on part of the Project Manager, in carrying out its obligations under this Agreement, the other InvIT documents, any offer documents, the Concession Agreement and Applicable Law. Notwithstanding anything to the contrary, the Trustee, the

relevant Project SPV and the Investment Manager acknowledge and agree that the aggregate maximum liability of the Project Manager in any financial year pursuant to any provision of the Project Implementation and Management Agreement shall cumulatively not exceed the fee payable to the Project Manager in such financial year in accordance with the terms of the Project Implementation and Management Agreement, provided further that such aggregate maximum liability shall not be applicable in the event such liability of the Project Manager arises out of any gross negligence, wilful default or fraud of the Project Manager.

The Project Manager and its directors, employees and officers ("**PM Indemnified Parties**") shall be indemnified by the Investment Manager and the relevant Project SPV against any actions, claims, suits, proceedings, losses, costs, damages, liabilities and expenses, including legal fee from and incurred or suffered by the PM Indemnified Parties in connection with the breach of any of the terms of the Project Implementation and Management Agreement by the Investment Manager or the relevant Project SPV, or failure in furnishing information required by the Project Manager to discharge its functions under the InvIT Regulations or furnishing wrong information to the Project Manager, or arising out of gross negligence, wilful default, wilful misconduct or fraud on part of the Investment Manager or the relevant Project SPV. Notwithstanding anything to the contrary, the Project Manager acknowledges and agrees that the aggregate maximum liability of the Investment Manager and the SPV in any financial year pursuant to any provision of this Agreement shall cumulatively not exceed the fee payable to the Project Manager in such financial year in accordance with the terms of this Agreement, provided further that such aggregate maximum liability shall not be applicable in the event such liability of the Investment Manager or SPV arises out of any gross negligence, wilful default or fraud by such entity.

4. Termination

(i). The Project Implementation and Management Agreement shall remain effective, unless terminated by the Parties in accordance with the provisions hereto or extended by mutual consent expressed in writing by the parties to the Project Implementation and Management Agreement, for the period that the Concession Agreement is in force ("**Validity Period**").

(ii). Subject to clauses (iii). and (iv). below, the Project Implementation and Management Agreement may be terminated prior to the expiry of the Validity Period:

(a). by the Investment Manager, after consultation with the Trustee, by delivery of a written notice to the Project Manager at any time (with prior intimation to the relevant Project SPV), subject to appointment of new project manager in accordance with the InvIT Regulations;

(b). by the Investment Manager, after consultation with the Trustee, by delivery of a written notice to the Project Manager at any time (with prior intimation to the relevant Project SPV), upon breach of any of the terms, covenants, conditions or provisions of the Project Implementation and Management Agreement by the Project Manager and failure of the Project Manager to remedy the said breach within a period of 60 days or such other period as may be mutually agreed by the parties to the Project Implementation and Management Agreement;

(c). by any party to the Project Implementation and Management Agreement by delivery of a written notice to the other party to the Project Implementation and Management Agreement upon the bankruptcy of such other party to the Project Implementation and Management Agreement or if winding up or liquidation proceedings are commenced against such other party to the Project Implementation and Management Agreement (and such proceedings persist for a period of more than three months); or

(d). by the Project Manager by delivery of a written notice of not less than three months to the Trustee, relevant Project SPV and the Investment Manager, subject to InvIT Regulations and Applicable Law.

(iii). The Investment Manager in consultation with the Trustee shall appoint a new project manager and execute a new project implementation and management agreement within three months from the termination of the earlier project implementation and management agreement in accordance with Applicable Law. The Trustee and Investment Manager shall also ensure that the new project manager stands substituted as a party in all documents to which the Project Manager was a party. The Project Manager shall remain in office until the appointment of a new project manager. The Project Manager shall continue to be liable for all its acts and omissions and commissions notwithstanding its termination until the date of its termination. Notwithstanding any other provision of the Project Implementation and Management Agreement, the Project Implementation and Management Agreement shall not be terminated for a period of three years from the date of listing of Units of InvIT, except in accordance with Applicable Law (including the InvIT Regulations).

(iv). The termination of the Project Implementation and Management Agreement shall not affect the rights

and obligations of the parties to the Project Implementation and Management Agreement accrued prior to such termination.

(v). Notwithstanding anything contained hereinabove, the Project Implementation and Management Agreement shall automatically terminate (subject to any requirement under Applicable Law, including InvIT Regulations), if (i). the listing of the units does not occur within the time period stipulated in the InvIT Regulations or such other date as mutually agreed between the parties to the Project Implementation and Management Agreement, or (ii). registration of the InvIT with SEBI is cancelled, or (iii). the InvIT is wound up in accordance with the InvIT Regulations.

OTHER PARTIES INVOLVED IN THE TRUST

The Auditors

Background and terms of appointment

The Investment Manager, in consultation with the Trustee, has appointed Mukund M. Chitale & Co., Chartered Accountants (Firm Registration No. 106655W) with effect from February 4, 2021, as the auditors of the Trust until March 31, 2025, subject to approval of the Unitholders each year. The Auditors have audited the Audited Special Purpose Combined Financial Statements and have certified the Projections of Revenue from Operations and Cash Flow from Operating Activities, and their report in relation to such Audited Special Purpose Combined Financial Statements dated February 22, 2021 and Projections of Revenue from Operations and Cash Flow from Operating Activities dated February 22, 2021 have been included in this Draft Placement Memorandum.

Functions, Duties and Responsibilities of the Auditors

The functions, duties and responsibilities of the Auditors will be in accordance with the InvIT Regulations. Presently, in terms of the InvIT Regulations, the Auditors is required to comply with the following conditions at all times:

1. the Auditors shall conduct audit of the accounts of the Trust and draft the audit report based on the accounts examined after taking into account the relevant accounting and auditing standards, as may be specified by SEBI;

2. the Auditors shall, to the best of its information and knowledge, ensure that the accounts and financial statements give a true and fair view of the state of the affairs of the Trust, including profit or loss and cash flow for the period and such other matters as may be specified;

3. the Auditors shall have a right of access at all times to the books of accounts and vouchers pertaining to activities of the Trust; and

4. the Auditors shall have a right to require such information and explanation pertaining to activities of the Trust as he may consider necessary for the performance of its duties as auditors from the employees of the Trust or parties to the Trust or the Initial Portfolio Assets or any other person in possession of such information.

The Valuer

Background and terms of appointment

The Investment Manager, in consultation with the Trustee, has appointed Mr. S Sundararaman with effect from February 4, 2021, as the valuer of the Trust, for a period of one year. In accordance with the InvIT Regulations, the Valuer has undertaken a full valuation of the Project SPVs, and their report dated February 24, 2021 in relation to such valuation as on January 31, 2021, has been included in this Draft Placement Memorandum.

Functions of the Valuer

The functions, duties and responsibilities of the Valuer will be in accordance with the InvIT Regulations. Presently, in terms of the InvIT Regulations, the Valuer is required to comply with the following conditions at all times:

1. the Valuer shall ensure that the valuation of the InvIT Assets is impartial, true and fair and is in accordance with Regulation 21 of the InvIT Regulations;

2. the Valuer shall ensure that adequate and robust internal controls to ensure the integrity of its valuation reports;

3. the Valuer shall ensure that it has sufficient key personnel with adequate experience and qualification to perform valuations;

4. the Valuer shall ensure that it has sufficient financial resources to enable it to conduct its business effectively and meet its liabilities;

5. the Valuer and any of its employees involved in valuing of the assets of the Trust, shall not, (i) invest in Units or in the assets being valued; and (ii) sell the assets or Units held prior to being appointed as the valuer, until the time the Valuer is designated as the valuer of the Trust and not less than six months after ceasing to be valuer of the Trust;

6. the Valuer shall conduct valuation of the Trust's assets with transparency and fairness and shall render, at all times, high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment;

7. the Valuer shall act with independence, objectivity and impartiality in performing the valuation;

8. the Valuer shall discharge its duties towards the Trust in an efficient and competent manner, utilizing its knowledge, skills and experience in best possible way to complete given assignment;

9. the Valuer shall not accept remuneration, in any form, for performing a valuation of the Trust's assets from any person other than the Trust or its authorized representative;

10. the Valuer shall before accepting any assignment from any related party of the Trust, disclose to the Trust any direct or indirect consideration which the valuer may have in respect of such assignment;

11. the Valuer shall disclose to the Trust any pending business transactions, contracts under negotiation and other arrangements with the investment manager or any other party whom the Trust is contracting with and any other factors that may interfere with the Valuer's ability to give an independent and professional valuation of the assets;

12. the Valuer shall not make false, misleading or exaggerated claims in order to secure assignments;

13. the Valuer shall not provide misleading valuation, either by providing incorrect information or by withholding relevant information;

14. the Valuer shall not accept an assignment which interferes with its ability to do fair valuation; and

15. the Valuer shall, prior to performing a valuation, acquaint itself with all laws or regulations relevant to such valuation.

Policy on Appointment of Auditor and Valuer ("Appointment Policy")

The Investment Manager has adopted a policy on the appointment of auditor and valuer of the Trust, pursuant to its resolution dated February 22, 2021. The key terms of the Appointment Policy are set out below:

Appointment and role of the auditor of the Trust

1. The Investment Manager, in consultation with the trustee to the Trust, shall appoint the auditor of the Trust, in a timely manner and in accordance with the InvIT Regulations.

2. The Investment Manager shall ensure that the appointment of the auditor of the Trust and the fees payable to the auditor of the Trust is approved by the Unitholders in accordance with the InvIT Regulations.

3. The Investment Manager shall ensure that if the removal of the auditor of the Trust and appointment of another auditor to the Trust is taken up at a meeting of the Unitholders at the request of the Unitholders, such removal of the auditor of the Trust shall be approved by the Unitholders in accordance with the InvIT Regulations.

4. The Investment Manager shall appoint an auditor to the Trust for a period of not more than five consecutive years; provided that the auditor, not being an individual, may be reappointed for a period of another five consecutive years, subject to approval of Unitholders in the annual meeting in accordance with the InvIT Regulations.

5. The Investment Manager shall ensure that the audit of accounts of the Trust by the auditor is done not less once in a year and such report is submitted to the stock exchanges within the timelines prescribed under the InvIT Regulations.

6. The auditor shall conduct the audit of the accounts of the Trust and draft the audit report based on the accounts examined by it after taking into account the relevant accounting and auditing standards under applicable law including the InvIT Regulations and any guidelines, circulars, notifications and clarifications framed or issued by SEBI, as may be specified from time to time.

7. The auditor of the Trust shall comply with the conditions prescribed under the InvIT Regulations at all times, including the following:

   (a). the accounts of the Trust shall be subjected to audit by the auditor of the Trust and shall be accompanied by a report of the auditor in such manner and at such intervals as may be prescribed under applicable law, including the InvIT Regulations;
   (b). the auditor of the Trust shall, to the best of his information and knowledge, ensure that the accounts and financial statements give a true and fair view of the state of the affairs of the Trust, including profit or loss and cash flow for the period and such other matters as may be specified by SEBI;

(c). the auditor shall have a right of access at all times to the books of accounts and vouchers pertaining to activities of the Trust; and

(d). the auditor shall have a right to obtain such information and explanation pertaining to activities of the Trust as he may consider necessary for the performance of his duties as auditor from the employees of Trust or any holding company or parties to the Trust or any holding company or the SPV(s) or any other person in possession of such information.

8. The Investment Manager, in consultation with the Trustee, shall have the right to take all necessary steps to remove the auditor of the Trust who ceases to comply with the eligibility criteria required under the InvIT Regulations and applicable law. In case of removal of the auditor and appointment of another auditor to the Trust, approval from the Unitholders shall be required in accordance with the InvIT Regulations.

Appointment and role of valuer of the Trust

1. The Investment Manager, in consultation with Trustee, shall appoint the valuer of the Trust, in a timely manner and shall determine the remuneration of such valuer, in accordance with the InvIT Regulations.

2. The remuneration of the valuer shall not be linked to or based on the value of the assets being valued.

3. The valuer shall not be an associate of any of the Sponsor or the Investment Manager or Trustee.

4. The valuer shall be eligible to act as a valuer in accordance with the InvIT Regulations or any clarifications, guidelines, notifications or exemptions issued by SEBI.

5. The valuer shall undertake valuation in accordance with the InvIT Regulations. The full valuation report shall include the mandatory minimum disclosures as specified in InvIT Regulations.

6. The valuer shall not undertake valuation of the same project for more than four years consecutively, provided that the valuer may be reappointed after a period of not less than two years from the date it ceases to be the valuer of the Trust.

7. The valuer shall not undertake valuation of any assets in which it has either been involved with the acquisition or disposal within the last twelve months other than such cases where the valuer was engaged by the Trust for such acquisition or disposal.

8. The valuer shall comply with the following conditions at all times:

(a) the valuer shall ensure that the valuation of the Trust assets is impartial, true and fair and is in accordance with the InvIT Regulations;

(b) the valuer shall ensure adequate and robust internal controls to ensure the integrity of its valuation reports;

(c) the valuer shall ensure that it has sufficient key personnel with adequate experience and qualification to perform valuations;

(d) the valuer shall ensure that it has sufficient financial resources to enable it to conduct its business effectively and meet its liabilities;

(e) the valuer and any of its employees involved in valuing of the assets of the Trust, shall not:

(i) invest in units of the Trust or in the assets being valued; and

(ii) sell the assets or units of the Trust held prior to being appointed as the valuer,

until the time such person is designated as valuer of the Trust and not less than six months after ceasing to be valuer of the Trust;

(f) the valuer shall conduct valuation of the Trust assets with transparency and fairness and shall render, at all times, high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment;

(g) the valuer shall act with independence, objectivity and impartiality in performing the valuation;

(h) the valuer shall discharge its duties towards the Trust in an efficient and competent manner, utilizing its knowledge, skills and experience in best possible way to complete given assignment;

(i) the valuer shall not accept remuneration, in any form, for performing a valuation of the Trust assets from any person other than the Trust or its authorized representative;

(j) the valuer shall before accepting any assignment, from any related party of the Trust, disclose to the Trust, by disclosing to the Investment Manager or the Trustee, any direct or indirect consideration which the valuer may have in respect of such assignment;

(k) the valuer shall disclose to the Trust, through the Investment Manager, any pending business transactions, contracts under negotiation and other arrangements with the Investment Manager or any other party whom the Trust is contracting with and any other factors that may interfere with the valuer's ability to give an independent and professional valuation of the assets, and other necessary disclosures required under the InvIT Regulations;

(l) the valuer shall not make false, misleading or exaggerated claims in order to secure assignments;

(m) the valuer shall not provide misleading valuation, either by providing incorrect information or by withholding relevant information;
(n) the valuer shall not accept an assignment which interferes with its ability to do fair valuation; and
(o) the valuer shall, prior to performing a valuation, acquaint itself with all laws or regulations relevant to such valuation.

The Investment Manager in consultation with the Trustee shall have the right to take all necessary steps to remove a valuer who ceases to comply with the eligibility criteria required under the InvIT Regulations and applicable law. If the removal of a valuer and appointment of another valuer to the Trust is taken up at a meeting of the Unitholders at the request of the Unitholders, such removal of a valuer shall be approved by the Unitholders in accordance with the InvIT Regulations.

CORPORATE GOVERNANCE

The section below is a summary of the corporate governance framework in relation to the Trust, implemented by or to be implemented by the Investment Manager and the Initial Portfolio Assets, as applicable and as specified in this section.

1. Investment Manager

Board of Directors

Composition of the Board of Directors of the Investment Manager

In addition to the applicable provisions of the Companies Act and LODR Regulations (if applicable), the board of directors shall adhere to the following:

(a). Not less than 50% of the board of directors shall comprise independent directors, determined in accordance with the Companies Act read with the LODR Regulations, as applicable, who are not directors or members of the governing board of an investment manager of another infrastructure investment trust registered under the InvIT Regulations;

(b). the chairman of the board of directors may be an executive or a non-executive director; and

(c). collective experience of the directors should cover a broad range of commercial experience, particularly experience in infrastructure sector (including the applicable sub-sector), including development, investment/fund management or advisory and financial matters.

For details of the current composition of the board of directors, please see the section entitled "*Parties to the Trust – The Investment Manager – Shrem Financial Private Limited – Board of Directors of the Investment Manager*" on page 105.

Quorum

The quorum shall be one-third of the total strength of the board of directors or three directors, whichever is higher, including at least one independent director.

Frequency of meetings

The board of directors of the Investment Manager should meet at least four times every year, with a maximum gap of 120 days between any two successive meetings. Additionally, the board of directors of the Investment Manager shall meet prior to any meeting of the Unitholders and approve the agenda for Unitholders' meetings.

Sitting fee

The directors of the Investment Manager will receive sitting fee for attending board meetings and meetings of the committees, in accordance with the Companies Act.

Articles of Association of the Investment Manager

The articles of association should not include any affirmative rights for the Sponsor/ Sponsor group.

Committees of the board of directors

Name of the committee	Composition	Present Members	Quorum	Frequency of meetings
Investment, Nomination and Remuneration Committee	The Investment, Nomination and Remuneration Committee shall consist of at least three directors. All members of the committee shall be non-executive directors, and at least fifty percent of the members of the committee shall be independent directors. The chairperson of the committee should be an independent director. The company secretary shall act as the secretary to the investment, nomination and remuneration committee.	Pradeep Singh, Suneet Shriniwas Maheshwari and Anurag Kumar Sachan	The quorum shall be either two members or one third of the members of the committee, whichever is greater, including at least one independent director in attendance.	The investment, nomination and remuneration committee shall meet at least once in a year.
Audit Committee	The audit committee shall consist of at least three directors. Two-thirds of the members of audit committee shall be independent directors. The chairperson of the audit committee should be an independent director. All members of the	Suneet Shriniwas Maheshwari, Anurag Kumar	The quorum shall either be two members or one third of the members of the audit committee,	The audit committee should meet at least four times every year, with a maximum gap of 120 days between any two

Name of the committee	Composition	Present Members	Quorum	Frequency of meetings
	audit committee should be financially literate and at least one member should have accounting or related financial management expertise, in accordance with the LODR Regulations. The company secretary shall act as the secretary to the audit committee.	Sachan and Nikhil Pareek	whichever is greater, including at least two independent directors in attendance.	successive meetings. Additionally, the audit committee should meet prior to any declaration of distributions and provide recommendations to the board of directors regarding any proposed distributions.
Stakeholders' Relationship Committee	The stakeholders' relationship committee shall consist of at least three directors. At least one member of the committee shall be an independent director. The chairperson of this committee shall be a non-executive director.	Anurag Kumar Sachan, Pradeep Singh and Nikhil Pareek	The quorum shall either be two members or one third of the members of the committee, whichever is greater, including at least one independent director in attendance.	The stakeholders' relationship committee shall meet at least once in a year.

For details of the scope of each committee, please see below.

Investment, Nomination and Remuneration Committee

Terms of reference of the Investment, Nomination and Remuneration Committee

The terms of reference of the Investment, Nomination and Remuneration Committee include the following:

(i). taking actions in relation to:

(a). identifying persons qualified to become directors or appointed in senior management in accordance with the criteria laid down;
(b). recommending their appointment and removal, to the board of directors; and
(c). specifying the manner for effective evaluation of the performance of the board of directors, its committees and individual directors and review its implementation and compliance;

(ii). formulating the criteria for determining qualifications, positive attributes and independence of a director and recommend a policy to the board of directors, relating to remuneration for the directors, key managerial personnel and other employees;

(iii). while formulating the policy in (ii) above, ensuring that:

(a). the level and composition of remuneration is reasonable and sufficient to attract, retain and motivate directors of the quality required to run the company successfully;
(b). relationship of remuneration to performance is clear and meets appropriate performance benchmarks; and
(c). remuneration to directors, key managerial personnel and senior management involves a balance between fixed and incentive pay reflecting short and long term performance objectives appropriate to the working of the company and its goals;

(iv). ensuring compliance with the requirements of the Companies Act, 2013;

(v). making all decisions in relation to appointment or replacement or removal of:

(a). independent directors;
(b). any key managerial personnel; and
(c). directors on the board of directors of the SPVs;

(vi). formulating the following policies:

(a). the policy for appointment of independent directors (including the qualification and experience requirements, compensation model, performance parameters, process for appointment and removal);
(b). the policy for nomination of directors on the board of directors of the SPVs (including qualification and experience requirements, compensation model, performance parameters, process for appointment and removal); and
(c). the human resources policy (in relation to employment terms including remuneration for key managerial personnel);

(vii). reviewing the investment decisions with respect to the underlying assets or projects of the Trust from the Sponsor including any further investments or divestments to ensure protection of the interest of unitholders;

(viii). undertaking all functions in relation to protection of Unitholders' interests and resolution of any conflicts of interest (other than in relation to investors grievances), including reviewing agreements or transactions in this regard;

(ix). approving any proposal in relation to acquisition of assets, further issue of units including in relation to acquisition or assets;

(x). reviewing investments made by the Trust and ensuring compliance of such investments with the investment conditions specified in the InvIT Regulations;

(xi). subject to approval of Unitholders as required under the Trust Deed and applicable law, make all decisions in relation to borrowing or availing debt (including provision of security for such debt or borrowing) by the Trust, Holding Companies or SPVs or any prepayment of any borrowing or debt at the Trust, Holding Companies or SPVs;

(xii). making decisions, including framing of policies in relation to entrustment, deposit or handing over of any securities to any one or more custodians and the procedure relating to the holding thereof by the custodian;

(xiii). ensuring that all activities of the intermediaries or agents or service providers appointed by the investment, nomination and remuneration committee are in accordance with the InvIT Regulations and guidelines or circulars issued under applicable law; and

(xiv). formulating any policy for the Investment Manager as necessary, in relation to its functions, as specified above.

Audit Committee

Terms of reference of the Audit Committee

The terms of reference of the Audit Committee include the following:

(i). provide recommendations to the board of directors regarding any proposed distributions;

(ii). overseeing the Trust's financial reporting process and disclosure of its financial information to ensure that its financial statements are correct, sufficient and credible;

(iii). giving recommendations to the board of directors regarding appointment, re-appointment and replacement, remuneration and terms of appointment of the statutory auditor of the Trust and the audit fee, subject to the approval of the Unitholders;

(iv). reviewing and monitoring the independence and performance of the statutory auditor of the Trust, and effectiveness of audit process;

(v). approving payments to statutory auditors of the Trust for any other services rendered by such statutory auditors;

(vi). reviewing the annual financial statements and auditor's report thereon of the Trust, before submission to the board of directors for approval, with particular reference to:

- changes, if any, in accounting policies and practices and reasons for such change;
- major accounting entries involving estimates based on the exercise of judgment by management;
- significant adjustments made in the financial statements arising out of audit findings;
- compliance with listing and other legal requirements relating to financial statements;
- disclosure of any related party transactions; and
- qualifications in the draft audit report;

(vii). reviewing, with the management, all periodic financial statements, including but not limited to quarterly, half-yearly and annual financial statements of the Trust, whether standalone or consolidated or in any other form as may be required under applicable law, before submission to the board of directors for approval;

(viii). reviewing, with the management, the statement of uses/application of funds raised through an issue of units by the Trust (including but not limited to public issue, rights issue, preferential issue, private placement, etc.) and any issue

of debt securities and the statement of funds utilised for purposes other than those stated in the offer documents/ notice, and making appropriate recommendations to the board of directors for follow-up action;

(ix). approval or any subsequent modifications of transactions of the Trust with related parties;

(x). recommending such related party transactions to the board of directors or the Unitholders, as may be required, under the InvIT Regulations;

(xi). scrutinising loans including inter-corporate loans and investments of the Trust;

(xii). reviewing all valuation reports required to be prepared under applicable law, periodically, and as required, under applicable law;

(xiii). evaluating financial controls and risk management systems of the Trust;

(xiv). reviewing, with the management, the performance of statutory auditors of the Trust, and adequacy of the internal control systems, as necessary;

(xv). discussion with internal auditors of any significant findings and follow up there on;

(xvi). reviewing the adequacy of internal audit function if any of the Trust, including the structure of the internal audit department, staffing and seniority of the official heading the department, reporting structure coverage and frequency of internal audit;

(xvii). reviewing the findings of any internal investigations in relation to the Trust, into matters where there is suspected fraud or irregularity or a failure of internal control systems of a material nature and reporting the matter to the board of directors;

(xviii). reviewing the procedures put in place by the Investment Manager for managing any conflict that may arise between the interests of the unitholders, the parties to the Trust and the interests of the Investment Manager, including related party transactions, the indemnification of expenses or liabilities incurred by the Investment Manager, and the setting of fees or charges payable out of the Trust's assets;

(xix). discussing with statutory auditors and valuers prior to commencement of the audit or valuation, respectively, about the nature and scope, as well as post-audit/ valuation discussion to ascertain any area of concern;

(xx). reviewing and monitoring the independence and performance of the valuer of the Trust;

(xxi). giving recommendations to the board of directors regarding appointment, re-appointment and replacement, remuneration and terms of appointment of the valuer of the Trust;

(xxii). evaluating any defaults or delay in payment of distributions to the Unitholders or dividends by the SPVs to the Holding Companies and by the Holding Companies to the Trust and payments to any creditors of the Trust or the Holding Companies or the SPVs, and recommending remedial measures;

(xxiii). reviewing the management's discussion and analysis of financial condition and results of operations;

(xxiv). reviewing the statement of significant related party transactions, submitted by the management;

(xxv). reviewing the management letters/letters of internal control weaknesses issued by the statutory auditors;

(xxvi). approving any management information systems or interim financial statements to be submitted by the Trust to any unitholder or regulatory or statutory authority;

(xxvii). approving any reports required to be issued to the Unitholders under the InvIT Regulations; and

(xxviii). formulating any policy for the Investment Manager as necessary, in relation to its functions, as specified above.

Stakeholders' Relationship Committee

Terms of reference of the Stakeholders' Relationship Committee

The terms of reference of the Stakeholders' Relationship Committee shall include the following:

(i). consider and resolve grievances of the Unitholders, including complaints related to the transfer of Units, non-receipt of annual report and non-receipt of declared distributions;

(ii). review of any litigation related to Unitholders' grievances;

(iii). update Unitholders on acquisition / sale of assets by the Trust and any change in the capital structure of the Holding Companies or the SPVs;

(iv). reporting specific material litigation related to Unitholders' grievances to the board of directors; and

(v). approve the report on investor grievances to be submitted to the Trustee.

Policies of the Board of Directors of the Investment Manager in relation to the Trust

The Investment Manager has adopted the following policies, in relation to management of the Trust and all assets of the Trust:

(a). **Policy on Unpublished Price Sensitive Information and Dealing in Units by Parties to the Trust ("UPSI Policy")**

The Investment Manager has adopted the UPSI Policy pursuant to a resolution of its board of directors on February 22, 2021. The purpose of the policy is, *inter alia*, to ensure that the Trust complies with applicable law, including the InvIT Regulations or such other laws, regulations, rules or guidelines prohibiting insider trading and governing disclosure of material, unpublished price sensitive information ("**UPSI**").

The key principles of the UPSI Policy are set out below:

(i). the Investment Manager shall promptly disclose to the public all UPSI that would impact price discovery no sooner than credible and concrete information comes into being in order to make such information generally available;
(ii). the Investment Manager shall follow uniform and universal dissemination of UPSI to avoid selective disclosure;
(iii). the compliance officer of the Trust ("**Compliance Officer**") shall be responsible for deciding whether a public announcement is necessary for verifying or denying rumours and then making the disclosure, in accordance with the procedure specified in the Materiality of Information for Periodic Disclosures Policy*;*
(iv). the Compliance Officer shall also make an appropriate and fair response to the queries on news reports and requests for verification of market rumours by regulatory authorities, in accordance with the procedure specified in the policy for determining materiality of information for periodic disclosures of InvIT ("**Materiality of Information for Periodic Disclosures Policy**");
(v). while dealing with analysts or research persons or large investors like institutions, the Investment Manager shall provide only public information. Alternatively, the information given to analysts or research persons shall be simultaneously made public at the earliest;
(vi). the Investment Manager shall handle all UPSI on a "need to know" basis, provided that UPSI may be disclosed to persons who need such information for furtherance of legitimate purposes, performance of duties or discharge of legal obligations in relation to the Trust; and
(vii). in case of conflict between the provisions of the UPSI Policy and applicable law, provisions of the applicable law will prevail over the provisions of the UPSI Policy.

Further, the UPSI Policy also provides the process and procedures for closure of the trading window for dealing in Units, policy and procedure for inquiry into leak or suspected leak of any UPSI and disclosure of UPSI for legitimate purposes.

(b). **Code of Conduct for the Trust (the "Code")**

The Investment Manager has adopted the Code pursuant to a resolution of its board of directors dated February 22, 2021, in relation to the Trust. Trust and the parties to the Trust shall comply with the Code at all time, in accordance with the InvIT Regulations.

The key principles of the Code are set out below:

(i). the Trust and the parties to the Trust shall conduct all the affairs of the Trust in the interest of all the Unitholders;

(ii). the Trust and the parties to the Trust shall make adequate, accurate, explicit and timely disclosure of relevant material information to all Unitholders, the stock exchanges and SEBI in accordance with the InvIT Regulations and as may be specified by the stock exchanges from time to time;

(iii). the Trust and the parties to the Trust shall try to avoid conflicts of interest, as far as possible, in managing the affairs of the Trust and keep the interest of all Unitholders paramount in all matters. In case such events cannot

be avoided, it shall be ensured that appropriate disclosures are made to the Unitholders and they are fairly treated;

(iv). the Trust and the parties to the Trust shall ensure that fees charged by them with respect to activities of the Trust shall be fair and reasonable;

(v). the Investment Manager shall carry out the business of the Trust and invest in accordance with the investment objectives (as disclosed in the draft placement memorandum, placement memorandum and the placement memorandum) and take investment decisions solely in the interest of Unitholders;

(vi). the Trust, the parties to the Trust and any third party appointed by the Investment Manager shall not use any unethical means to sell, market or induce any person to buy units of the Trust and where a third party appointed by the Investment Manager fails to comply with this condition, the Investment Manager shall be held liable for the same;

(vii). the Trust and the parties to the Trust shall maintain high standards of integrity and fairness in all their dealings and in the conduct of their business;

(viii). the Trust and the parties to the Trust shall render at all times high standards of service, exercise due diligence, ensure proper care and exercise independent professional judgment; and

(ix). the Trust and the parties to the Trust shall not make any exaggerated statement, whether oral or written, either about their qualifications or capabilities or experience.

(c). **Materiality of Information for Periodic Disclosures Policy ("Materiality of Information Policy")**

The Investment Manager has adopted the Materiality of Information Policy pursuant to a resolution of its board of directors dated February 22, 2021, in relation to Trust. The Materiality of Information Policy aims to outline process and procedures for determining materiality of information in relation to periodic disclosures on the Trust's website, to the stock exchange and to all stakeholders at large, in relation to the Trust. The key principles of the Materiality of Information Policy are set out below:

(i). any information concerning the Trust is considered material to the business and affairs of the Trust if (i). it results in, or would reasonably be expected to result in a significant change in the market price or value of units of the Trust; or (ii). if there is a substantial likelihood that a reasonable Unitholder would consider it important in determining whether to buy, sell or hold, or engage in other transactions concerning the Trust's units; or (iii). the investor would consider important in making an investment decision.

(ii). The Investment Manager or the Trustee shall provide to SEBI and to the stock exchanges, where applicable, such information as may be sought by SEBI or by the stock exchanges pertaining to the activity of the Trust.

(iii). certain events or information, as specified in the Materiality of Information for Periodic Disclosures Policy, shall be deemed to be material information and against which the Trust shall not be required to apply the criteria for determining materiality of information, and are deemed material information;

(iv). the Trust shall use certain criteria for determination of materiality of events or information other than for the deemed material information, as specified in the Materiality of Information for Periodic Disclosures Policy;

(v). the Trust shall also submit such information to the designated stock exchanges and Unitholders on a periodical basis as may be required under the listing agreements. Further, the Trust shall disclose all such information as may be specified by SEBI to the designated stock exchange(s), Unitholders and SEBI, in the manner as may be specified by SEBI; and

(vi). the Materiality of Information for Periodic Disclosures Policy also provides for the approval process for disclosure or dissemination of any material or unpublished price sensitive information on behalf of the Trust and authorises the compliance officer and other authorised persons to make the disclosures, as may be required.

(d). **Borrowing Policy of the Trust ("Borrowing Policy")**

The Investment Manager shall ensure that all funds borrowed in relation to the Trust are in compliance with the InvIT Regulations. Accordingly, the Investment Manager has formulated the Borrowing Policy to outline the process for borrowing monies in relation to the Trust. The key terms of the Borrowing Policy include, among other things, the following:

(i). The Trust may raise debt and avail borrowings and deferred payments from time to time, including through

issuance of debt securities and availing loans from banks and financial institutions in accordance with applicable law (including the InvIT Regulations). The Trust may issue debt securities in the manner specified by SEBI, and in accordance with applicable law.

(ii). The Investment Manager shall ensure that if the value of funds borrowed from related parties in a financial year, exceeds any thresholds prescribed under the InvIT Regulations of the total consolidated borrowings of the Trust, holding companies and the special purposes vehicles, approval from the Unitholders shall be obtained prior to entering into any such subsequent transaction with any related party, in accordance with Regulation 22 of the InvIT Regulations.

(iii). In the event the aggregate consolidated borrowings and deferred payments (net of cash and cash equivalents) of the Trust, holding companies and the special purposes vehicles, exceed any thresholds prescribed under the InvIT Regulations in this regard, any further borrowings by the Trust shall be availed in accordance with the requirements prescribed under the InvIT Regulations, including any approval from Unitholders under Regulation 22 of the InvIT Regulations.

(iv). The Investment Manager shall ensure that the aggregate consolidated borrowings and deferred payments (net of cash and cash equivalents) of the Trust, holding companies and the special purposes vehicles shall not exceed the limits prescribed under the InvIT Regulations. Further, where the foregoing limits are breached on account of market movements of the price of the underlying assets or securities, the Investment Manager shall inform the same to the Trustee and ensure that the conditions as specified in the InvIT Regulations are satisfied within the time period prescribed under the InvIT Regulations, subject to any extensions permitted under the InvIT Regulations.

(v). The Trust shall be permitted to borrow monies through any permitted means, by any instrument, in Indian or foreign currency, as permitted by applicable law, including as prescribed by the RBI. The Investment Manager and the Trustee (on behalf of the Trust) shall be permitted to borrow monies in relation to the Trust, subject to the approval of its board of directors or such other committee of the board of directors as may be constituted in this regard.

(vi). The Trust also has the power to create mortgage or secure any of its assets or provide guarantees in order to borrow funds. However, the Investment Manager shall not be allowed to create any obligation which would allow the liabilities to extend beyond the assets held by the Trust.

(vii). Except with prior approval of the Unitholders and obtaining any other approvals required under applicable law (including the InvIT Regulations), any such obligation will not allow the Investment Manager to make the liabilities of the Trust or its Unitholders unlimited.

(viii). In addition to the above, any borrowing by holding companies or the InvIT Assets, incorporated under the Companies Act, 1956 or the Companies Act, 2013, will be in accordance with the conditions prescribed therein.

(ix). Any variation of the Borrowing Policy shall be in accordance with the InvIT Regulations.

(x). In case of any discrepancy, the provisions of applicable law shall prevail over the provisions of the Borrowing Policy. Notwithstanding the above, the Borrowing Policy will stand amended to the extent of any change in applicable law, including any amendment to the InvIT Regulations, without any action from the Investment Manager or approval of the Unitholders.

(xi). Disclosure and reporting:

(a). The Investment Manager shall disclose to the designated stock exchange(s) any additional borrowing, at level of SPVs or the Trust in excess of the threshold limits specified under the InvIT Regulations (presently 15% of the value of the assets of the Trust), as per the requirements prescribed under the InvIT Regulations.

(b). Details of changes during the year pertaining to borrowings or repayment of borrowings (standalone and consolidated) shall be disclosed in the annnual report of the Trust as per the requirements prescribed under the InvIT Regulations.

(c). Details of outstanding borrowings and deferred payments of the Trust, including any credit rating(s), debt maturity profile, gearing ratios of the Trust on a consolidated and standalone basis, shall be disclosed in the annual report of the Trust as per the requirements prescribed under the InvIT Regulations.

(e). **Policy on Preservation of Documents ("Document Archival Policy")**

The board of directors has adopted the Document Archival Policy pursuant to its resolution dated February 22, 2021. The document archival policy aims to provide a comprehensive policy on the preservation and conservation of the records and documents of the Trust. It provides guidance on the preservation and management of documents to help ensure the authenticity, reliability and accessibility of such documents. The policy aims at identifying, classifying, storing, securing, retrieving, tracking and destroying or permanently preserving records. It stipulates the duration and manner in and place at which records and documents of the Trust shall be preserved. The key terms of the Policy are:

(i). *Type of Documents*: The Trust's records and documents can be classified as physical and electronic records. Documents can also be categorised into documents to be preserved for limited life span and those to be preserved permanently.

(ii). Physical records would consist of all the hand written or printed and signed books and records maintained by the *Investment* Manager in physical form. Electronic records would comprise of all such documents which are digitally or virtually maintained in the electronic forms. Electronic record shall be authenticated by digital signatures.

(iii). *Place of Preservation of documents and records*: All records and documents along with all the supportive documents which are physically available shall be maintained at the principal place of business of the Trust, presently being 1101, Viraj Towers, Junction off Andheri Kurla Road, W.E. Highway near Land Mark Building, Andheri (East), Mumbai 400 069. All the documents required to be maintained in terms of the InvIT Regulations and any applicable law, shall be preserved under the custody of the compliance officer of the Trust.

(iv). All financials records required to be maintained in terms of the InvIT Regulations, prescribed accounting standards, Income-tax Act, 1961 and other applicable law, shall be maintained under the custody of the finance and accounts department.

(v). For paucity of space at the principal place of business of the Trust, data may be kept at an external storage facility, provided that the data so preserved is capable of being easily accessed and retrieved when need be.

(vi). *Method and tenor of preservation*: All the statutory documents shall be preserved for a minimum period of eight financial years, immediately preceding a financial year, and since creation of the Trust, when the Trust has been created for a period of less than eight years; or such longer duration if prescribed under applicable law. Documents shall be preserved in a chronological manner for each financial year. The person in charge of custody of the documents shall be responsible for proper maintenance and safe keeping of documents under his custody. The Trust shall maintain back-up of all documents preserved in the electronic form.

(vii). Documents which are confidential in nature shall, wherever possible, be kept under lock and key and shall be shared on need to know basis only with persons directly involved in the transaction involving such documents and records.

(viii). *Inspection*: If required under applicable law, some of the registers and records may be required to be kept open by a Trust for inspection by directors of the Investment Manager and unitholders of the Trust and by other persons, including creditors of the Trust. Upon receipt of advance notice from a unitholder or from any other specified person the Trust shall facilitate inspection of such documents by such persons and allow extracts to be taken from certain documents, registers and records and to furnish copies of certain documents, registers and records. Such documents and records shall be kept open for inspection during the business hours of the Trust without payment of any fee.

(ix). *Documents hosted on the Trust website*: Documents which are statutorily required to be hosted on the Trust website shall be hosted within the prescribed timeline from the occurrence of the event. All statutory data shall be hosted on the Trust website for a minimum period of five years or for such minimum period as prescribed under applicable law, after which it shall be preserved in the archival folder of the Trust maintained offline, until it is destroyed upon the expiry of the statutory period for the preservation such documents.

(x). *Register of documents destroyed to be maintained*: Documents and records may be destroyed after the expiry of the statutory period for the preservation the documents, after keeping a suitable record of documents destroyed.

(f). **Policy on appointment of the auditor and valuer of the Trust**

The board of directors of the Investment Manager has adopted the policy on appointment of the auditor and valuer of the Trust pursuant to its resolution dated February 22, 2021. For details of the policy on appointment of the auditor and the valuer of the Trust, adopted by the board of directors of the Investment Manager pursuant to its resolution dated

February 22, 2021, please see "*Other Parties Involved in the Trust – Policy on appointment of Auditor and Valuer*" on page 124.

(g). **Distribution Policy**

The board of directors of the Investment Manager has adopted the distribution policy pursuant to its resolution dated February 22, 2021. For details of the distribution policy, please see the section entitled "*Distribution*" on page 376.

(h). **Policy on Related Party Transactions ("RPT Policy")**

The board of directors of the Investment Manager has adopted the RPT Policy pursuant to a resolution of its board of directors dated February 22, 2021. For details of the RPT Policy, please see the section entitled "*Related Party Transactions – Procedure for dealing with Related Party Transactions*" on page 405.

The Investment Manager undertakes on behalf of the Trust that it shall comply with such disclosure and accounting norms as specified by SEBI from time to time.

2. Project SPVs

Representatives on the Board of Directors of the Project SPVs

The Investment Manager, in consultation with the Trustee, shall appoint the majority of the members of the board of directors of each of the Project SPVs, in accordance with the requirements prescribed under the InvIT Regulations.

3. **Holding Companies**

Representatives on the Board of Directors of the Holding Companies

The Investment Manager, in consultation with the Trustee, shall appoint majority of the members of the board of directors of each of the holding companies, in accordance with the requirements prescribed under the InvIT Regulations.

INDUSTRY OVERVIEW

The information contained in this section is derived from various government and other industry sources. Neither we nor any other person connected with the Issue has independently verified this information. Industry sources and publications generally state that the information contained therein has been obtained from sources generally believed to be reliable, but that their accuracy, completeness and underlying assumptions are not guaranteed and their reliability cannot be assured. Industry publications are also prepared based on information available as of specific dates and may no longer be current or reflect current trends. Accordingly, investment decisions should take these limitations into account. All references to years refer to calendar years except as otherwise stated. References to Indian financial years are to the one year period ending March 31 of the named year.

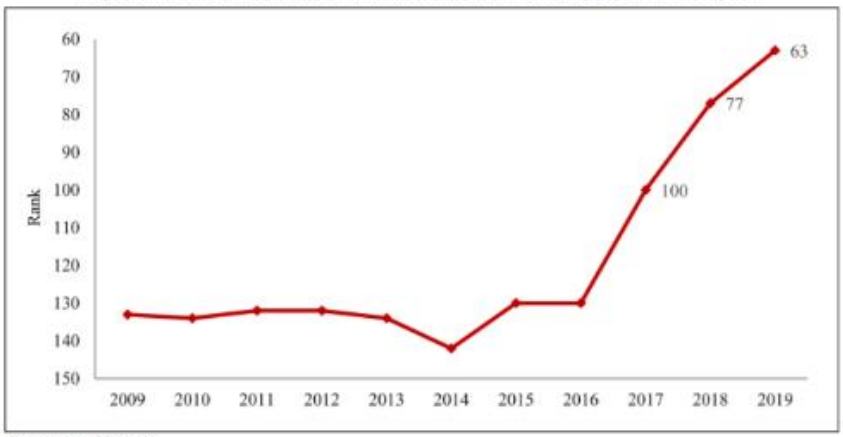
Overview of the Indian Economy

According to the Economic Survey 2020-2021, in 2018, 2019 and 2020 (advance estimates), India's gross domestic product ("**GDP**") based on constant prices was estimated at ₹ 1,39,81,426 crores (revised estimates), ₹ 1,45,65,951 crores (provisional estimates) and ₹ 1,34,39,662 crores (advance estimates) respectively. *(Source: Economic Survey 2020-2021 Statistical Appendix Volume 2*).

CPI inflation was 7.30% in September and rose further to 7.60% in October 2020. CPI inflation is projected at 6.80% for Q3: Fiscal 2021, 5.20% for Q4: Fiscal 2021 and 5.20% to 5.00% in H1: 2021-22 and 4.3% in Q3: Fiscal 2022 (Source: *Reserve Bank of India, Minutes of the Monetary Policy Committee Meeting December 2 to 4, 2020 and Minutes of the Monetary Policy Committee Meeting February 3 to 5, 2021*).

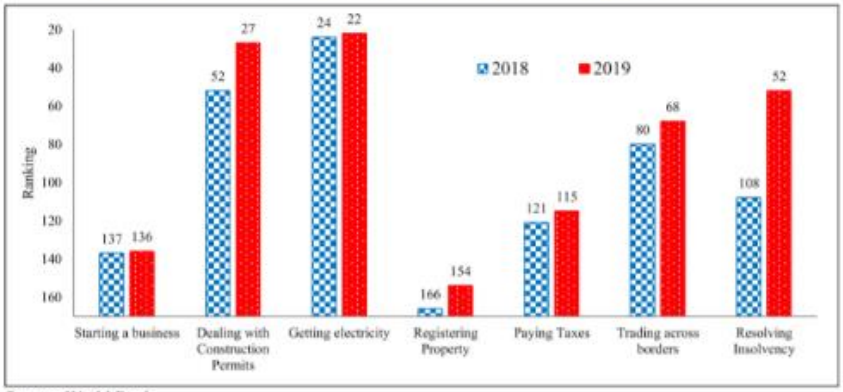
The Government of India has taken several industry specific reform initiatives since 2014 that have significantly improved the overall business environment. In order to improve ease of doing business, the emphasis has been on simplification and rationalization of the existing rules and introduction of information technology to make governance more efficient and effective. The improvement in the business environment as a result of these reforms is reflected in India's considerably improved ranking to 63rd position among the 190 countries in the World Bank's Doing Business 2020 Report (Source: *Economic Survey of India 2019 - 2020, Volume II ("**ESI II**")*).

Figure 5: India's ranking in World Bank Ease of Doing Business Reports



Source: World Bank.

Figure 6: India's Progress in Ease of Doing Business Reports Rankings



Source: World Bank.

Overview of the Indian Infrastructure Sector

It is well-accepted that investment in infrastructure is necessary for growth. Power shortages lead to dependence on expensive captive power, which in turn impels high costs and lack of competitiveness for the economy. Inadequate transport infrastructure leads to bottlenecks both in the supply of raw materials as well as movement of finished goods to the marketplace. The price that farmers get for their produce is depressed if there is no connectivity through good quality rural roads, which in turn keeps rural incomes depressed negating the fruits of high overall growth performance. For all these reasons, provision of adequate infrastructure is essential for growth and for making growth inclusive. India recently launched the National Infrastructure Pipeline for the period FY 2020-2025 (Source: *ESI II*).

Investment in Infrastructure is necessary for growth. To achieve the GDP of $5 trillion by 2024-25, India needs to spend about $1.4 trillion (₹ 100 lakh crore) over these years on infrastructure. The challenge is to step-up annual infrastructure investment so that lack of infrastructure does not become a binding constraint to the growth of the Indian economy. To implement an infrastructure program of this scale, it is important that projects are adequately prepared and launched (Source: *ESI II*).

To draw up the National Infrastructure Pipeline ("**NIP**") for each of the years from FY 2019-20 to FY 2024-25, an inter-ministerial Task Force was set up in September 2019 under the chairmanship of Secretary (Department of Economic Affairs), Ministry of Finance. NIP is expected to enable well-prepared infrastructure projects which will create jobs, improve ease of living, and provide equitable access to infrastructure for all, thereby making growth more inclusive. NIP also intends to facilitate supply side interventions in infrastructure development to boost short-term as well as the potential GDP growth. Improved infrastructure capacities will also drive competitiveness of the Indian economy (Source: *ESI II*).

The Finance Minister released the Report of the Task Force on National Infrastructure Pipeline (abridged version) on December 31, 2019. The NIP has projected total infrastructure investment of ₹ 102 lakh crore during the period FY 2020 to 2025 in India. Energy (24 per cent), roads (19 per cent), urban (16 per cent), and railways (13 per cent) amount to over 70 per cent of the projected capital expenditure during the said period. As per the NIP, Central Government (39 per cent) and State Government (39 per cent) are expected to have equal share in funding of the projects followed by the private sector (22 per cent). It is expected that private sector share may increase to 30 per cent by 2025. Out of the total expected capital expenditure of ₹ 102 lakh crore, projects worth ₹ 42.7 lakh crore (42 per cent) are under implementation, projects worth ₹ 32.7 lakh crore (32 per cent) are in conceptualization stage and rest are under development. Hence about two-thirds of the pipeline is already firmed up. It is also expected that projects of certain states would be added to the pipeline in due course (Source: *ESI II*).

The Task Force has given its recommendations on required changes to several key sectoral policies and other reform initiatives by the Central and State Governments such as developing a robust bond market for infrastructure companies, speedy resolution of infrastructure disputes, optimal risk sharing through better and balanced PPP contracts, and sanctity and enforceability of contracts. The NIP captures the infrastructure vision of the country for the period FY 2020-2025. This is the first ever exercise undertaken in the country. However, it is recognized that financing of NIP would be a challenge. It is hoped that a bouquet of well-prepared projects would attract investment from Central and State Governments, urban local bodies, banks and financial institution, PE funds, and private investors, both local and foreign (Source: *ESI II*).

The Government of India set up the Public Private Partnership Appraisal Committee (PPPAC) responsible for the appraisal of PPP projects in the Central sector. During Financial Year 2020, PPPAC recommended 5 projects with total project cost of ₹4,321 crore. Out of these 5 projects, 4 are railway sector projects (passenger train projects) and 1 is port sector project. In Fiscal 2021, PPPAC recommended 7 projects with total project cost of ₹66,600.59 crore. Out of these 7 projects, 1 is a telecom sector project, 3 are railway sector projects (2 station redevelopment projects & 1 passenger train project), 2 are MHA sector projects (Eco-tourism projects) and 1 is port sector project.

In Fiscal 2021, the Government of India approved the continuation of the revamped Infrastructure Viability Gap Funding (VGF) scheme till 2024-25. Revamping of the proposed VGF scheme will attract more PPP projects and facilitate the private investment in the social sectors (Health, Education, Waste Water, Solid Waste Management, Water Supply etc.). The revamped Scheme is mainly related to introduction of the two sub-schemes for mainstreaming private participation in social infrastructure. (Source: *Economic Survey of India 2020 - 2021, Volume II)*

Overview of Road Sector in India

Introduction

Road transport is the dominant mode of transportation in terms of its contribution to Gross Value Added ("**GVA**") and traffic share. The share of transport sector in the GVA for 2017-18 was about 4.77 per cent of which the share of road transport is the largest at 3.06 per cent, followed by the share of the Railways (0.75 per cent), air transport (0.15 per cent) and water transport (0.06 per cent). Similarly, as per the National Transport Development Policy Committee Report, as of 2011-12, road transport is estimated to handle 69 per cent and 90 per cent of the countrywide freight and passenger traffic, respectively. The Ministry of Road Transport and Highways ("**MoRTH**") is mandated with the development and maintenance of road networks especially the national highways as well as the implementation of the Motor Vehicle Act under which it formulates broad policies relating

to road transport (Source: *ESI II*).

The national highways have a total length of 1,32,500 km, which in totality serve as the arterial network of the country. The development of national highways is the responsibility of the Government of India. The Government of India has launched major initiatives to upgrade and strengthen national highways through various phases of the National Highways Development Project ("**NHDP**") (Source: *Annual Report of the Ministry of Road Transport and Highways 2019 – 2020 ("**MoRTH Annual Report**")*).

During the decade ending in Fiscal 2019, the national highways recorded a CAGR of 7.25 per cent followed by rural roads (6.25 per cent) and urban roads (4.27 per cent). The pace at which roads have been constructed has grown significantly from 12 kms per day in 2014-15 to 30 kms per day in Fiscal 2019 before it moderated in Fiscal 2020. The decline in the construction of road per day in Fiscal 2021 is mostly on account of the COVID-19 shock. With the unlocking of the economy, construction of roads is expected to return back to the high pace attained before COVID-19. (Source: *Economic Survey of India 2020 - 2021, Volume II)*

Road Network

The capacity of national highways in term of handling traffic (passenger and goods) needs to keep pace with economic growth. India has the second largest road network in the world of about 58.98 lakh km. This comprises national highways, expressways, state highways, major district roads, other district roads and village roads as under:

Particulars	Capacity (in km)
National Highways	132,500
State Highways	156,694
Other Roads	5,608,477
Total	**5,897,671**

(Source: *MoRTH Annual Report*)

The Government of India has launched major initiatives to upgrade and strengthen national highways through various phases of NHDP. The status of various programmes up to December 31, 2019 is as under:

Phases	Total Length in km	Length completed up to March 31, 2019	Length completed during April 1, 2019 to December 31, 2019	Length Completed up to December 31, 2019
Bharatmala Pariyojana (I+ II +III +IV) GQ, Port connection & Upgradation with 2/4/6 -laning / Development of North South-East West Corridor	46,278	33,808	3,148	36,956
V 6-laning of GQ and High density corridor	6,500	3,464	329	3,593
VI Expressways	1,000	176	21	197
VII Ring Roads, Bypasses and flyovers and other structures	700 km of ring roads, bypass + flyovers etc.	115	9	124
Other Schemes				
SARDP-NE (Phase A + Arunachal Pradesh)	6,418	3,029	112	3,141
LWE (including Vijaywada Ranchi Route)	6,014	5,479	65	5,344
EAP (WB+JICA+ADB)	1,985	1,018	63	1,081

(Source: *MoRTH Annual Report*)

A good road network is an essential requirement for the rapid growth of the economy. Roads provide connectivity to remote areas, open up backward regions and facilitate access to markets, trade and investment. Roads should not be looked at in isolation, but as part of an integrated multi-modal transport system, which provides crucial links with airports, railway stations, ports and other logistical hubs. As on March 31, 2018, India had a road network of about 59.64 lakh km. The total length of National Highways was 1.32 lakh km as on March 1, 2019. The pace at which roads have been constructed has grown significantly from 17 kms per day in 2015-16 to 29.7 kms per day in 2018-19. However, the pace seems to have moderated in 2019-20 (Source: *ESI II*). During 2019-20, projects with about 8,948 km length were awarded and completion was achieved in

about 10,237 km length of roads. The rate of development of roads has increased significantly from about 11.7 km during 2013-14 to about 28 km now. Due to consistent efforts of MoRTH, length of the National Highways has increased from 91,287 km in April, 2014 to about 1,36,155 km as on December 20, 2020 (Source: *Press Information Bureau, Year-End Review, Ministry of Road Transport and Highways 2020: The Year of Marching Ahead (https://pib.gov.in/PressReleseDetailm.aspx?PRID=1684574)*).

Construction of National Highways		
Year	**Award (km)**	**Construction (km)**
2020-21* (till November)	6,764	6,207
2019-20	8,948	10,237
2018-19	5,493	10,855
2017-18	17,055	9,829
2016-17	15,948	8,231
2015-16	10,098	6,061
2014-15	7,972	4,410

(Source: *Press Information Bureau, Year-End Review, Ministry of Road Transport and Highways 2020: The Year of Marching Ahead (https://pib.gov.in/PressReleseDetailm.aspx?PRID=1684574)*)

During the period April 1, 2019 to December 31, 2019, a total of 1,380 land acquisition notifications have been issued and 8,889 hectares of land has been notified for acquisition under Section 3D of the National Highways Act, 1956. Details of land acquired by the National Highways Authority of India during last four years are set out below:

Sr. No.	Year	Area notified u/s 3A (Ha.)	Area notified u/s 3D i.e Total area acquired (Ha.)
1.	2016-17	8,471	7,491
2.	2017-18	11,459	9,494
3.	2018- 19	96,450	29,374
4.	2019-20 (Upto Dec. 2019)	12,784	7,774

(Source: *MoRTH Annual Report*)

Investments in the Road Sector

Total investment in the Roads and Highway sector has gone up more than three times in the six years period from 2014-15 to 2019-20, which also led to increased road density across the states.

Details of total investment on road construction in India

(₹ in Crores)

Heads	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Total Budgetary Support	29,359	45,949	49,172	59,636	76,137	75,853	45,508
IEBR	3,343	23,281	33,118	50,533	61,217	74,988	17,128
Private Sector investment	19,232	29,770	16,029	16,501	21,605	21,926	6,029
Total Investment	51,935	99,000	98,319	1,26,670	1,58,959	1,72,767	68,665

(Source: *Economic Survey of India 2020 - 2021, Volume II)*

Key Organisations governing the National Highways

1. *Ministry of Road Transport and Highways*

MoRTH is the apex organisation under the Government of India entrusted with the task of formulating and administering, in consultation with other central ministries and departments, State Governments, Union Territory administrations, organisations and individuals, policies for road transport, national highways and transport research with a view to increasing the mobility and efficiency of the road transport system in the country. MoRTH has two wings: roads wing and transport wing (Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

The road wing deals with development and maintenance of national highways in the country. Its main responsibilities are as follows:

- planning, development and maintenance of National Highways in the country;
- extending technical and financial support to State Governments for the development of state roads and the roads of inter-state connectivity and economic importance;
- evolving standard specifications for roads and bridges in the country; and
- serving as a repository of technical knowledge on roads and bridges.

(Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

The transport wing deals with matter relating to road transport. Its main responsibilities are as follows:

- motor vehicles legislation;
- administration of the Motor Vehicles Act, 1988.
- taxation of motor vehicles;
- compulsory insurance of motor vehicles;
- administration of the Road Transport Corporations Act, 1950 and promotion of transport co-operatives in the field of motor transport;
- evolution of road safety standards in the form of a National Policy on Road Safety and by preparing and implementing the Annual Road Safety Plan;
- collecting, compiling and analysing road accident statistics and taking steps for developing a road safety culture in the country by involving the members of public and organising various awareness campaigns; and
- providing grants-in-aid to non-governmental organisations in accordance with the laid down guidelines.

(Source: *Website of the Ministry of Road Transport and Highways, Government of India (https://morth.nic.in/about-us)*).

2. *National Highways Authority of India*

National Highways Authority of India ("**NHAI**") was set up by an act of the Parliament i.e. National Highways Authority of India Act, 1988. It has been entrusted with NHDP, which along with other minor projects, has vested in it 50,329 kms of national highways for development, maintenance and management. NHAI's objective is to ensure that all contract awards and procurements conform to the best industry practices with regard to transparency of process, adoption of bid criteria to ensure healthy competition in award of contracts, implementation of projects conform to best quality requirements and the highway system is maintained to ensure best user comfort and convenience. National highways are the arterial roads of the country for inter-state movement of passengers and goods. They traverse the length and width of the country connecting the national and state capitals, major ports and rail junctions and link up with border roads and foreign highways. The total length of national highways (including expressways) in the country at present is 132,499 kms. While highways and expressways constitute only about 1.7% of the length of all roads, they carry about 40% of the road traffic (Source: *Website of National Highways Authority of India (https://nhai.gov.in/#/about-nhai)*).

Development initiatives in the Roads and Highways Sector

National Highway Development Project

NHAI is mandated to implement NHDP, which is India's largest ever highways project, in a phased manner. The national highways have a total length of approximately 72,000 km to serve as the arterial network of the country. Although national highways constitute only about 2 per cent of the road network, it carries 40 per cent of the total road traffic. Rapid expansion of passenger and freight traffic makes it imperative to improve the road network in the country. Accordingly, Government of India launched major initiatives to upgrade and strengthen national highways through various phases of NHDP.

- ***NHDP Phase I***: CCEA on January 12, 2000 approved NHDP Phase-I - Four laning of 6,359 km at a cost of ₹ 30,300.00 crore.

- ***NHDP Phase II***: CCEA on December 18, 2003 approved NHDP Phase-II: Four laning of 6,702 km at a cost of ₹. 34,339 crore in December 2003. These two phases comprise of Golden Quadrilateral ("**GQ**"), North-South and East-West Corridors ("**NS-EW**"), port connectivity and other projects. The GQ (5,846 km) connects the four major cities of Delhi, Mumbai, Chennai and Kolkata. The NS-EW Corridors (7,300 km) connect Srinagar in the North to Kanyakumari in the South, including a spur from Salem to Kochi and Silchar in the East to Porbandar in the West.

- ***NHDP Phase III***: CCEA on April 12, 2007 approved upgradation of 12,109 km under NHDP Phase III at an estimated cost of ₹ 80,626 crore.

- ***NHDP Phase–IV***: CCEA on June 18, 2008 approved upgradation/strengthening of 20,000 kms of national highways to 2/4 lane with paved shoulders on EPC/ BOT (Toll/Annuity) basis under NHDP Phase–IV.

- ***NHDP Phase-V***: CCEA on October 5, 2006 approved six laning of 6,500 km of national highways comprising 5,700 km of GQ and balance 800 km of other sections under NHDP Phase-V at a cost of Rs. ₹ 41,210 crore.

- ***NHDP Phase-VI***: In November 2006, approved construction of 1,000 km of expressways with full access control on new alignments at a cost of ₹ 16,680 crore under NHDP-Phase-VI.

- ***NHDP Phase-VII***: CCEA in December 2007 approved construction of ring roads, bypasses, grade separators, flyovers, elevated roads and tunnels at a cost of ₹16,680 crore under the NHDP Phase-VII.

Advantages of NHDP

Advantages of having a well-developed network of world class highways are many for a nation like India -poised to surge ahead.

- Savings in vehicle operating costs
- Benefits to trade especially in movement of perishable matter
- Faster, comfortable journeys
- Reduced maintenance costs
- Reduced fuel consumption
- Safer travel
- All round development of areas

Prime Focus of NHDP

NHDP's prime focus is on developing International standard roads with facilities for uninterrupted flow of traffic with:

- Enhanced safety features
- Divided carriageways and service roads
- Better riding surface
- Grade separators
- Better road geometry
- Over bridges and underpasses
- Better traffic management and noticeable signage
- Bypasses and wayside amenities

(Source: *Website of NHAI (https://nhai.gov.in/#/about-nhdp)*)

Bharatmala Pariyojana (Phase-I)

The Cabinet Committee on Economic Affairs approved the implementation of an umbrella programme for the National Highways – "*Bharatmala Pariyojana Phase-I*" in its meeting held on October 24, 2017, for construction/ up-gradation of national highways of 34,800 kms length over a period of five years (2017-18 to 2021-22) at an estimated outlay of ₹ 5,35,000 Crore. The programme focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions like development of economic corridors, inter corridors and feeder routes, national corridor efficiency improvement, border and international connectivity roads, coastal and port connectivity roads and green-field expressways. Multi-modal integration is also built into this program. Special attention has been paid to fulfilling the connectivity needs of backward and tribal areas, areas of economic activity, places of religious and tourist interest, border areas, coastal areas and trade routes with neighbouring countries. Projects with aggregate length of approximately 9,674 kms (includes projects with length 347 kms which had been awarded and terminated) have already been awarded under Bharatmala Pariyojana (including residual NHDP Works) till December 2019, while projects with length 3,555 kms are currently under bidding. Additionally, work on preparation of detailed project reports for about 16,326 kms is under progress (Source: *MoRTH Annual Report*).

Phase-I of Bharatmala Pariyojana includes development of following schemes:

Sr. No.	Scheme	Length (km)	Cost (₹ crore)
1.	Economic Corridors	9,000	120,000
2.	Inter-Corridors and feeder roads	6,000	80,000
3.	National Corridor Efficiency improvement	5,000	100,000
4.	Border and International connectivity roads	2,000	25,000
5.	Coastal and port connectivity roads	2,000	20,000
6.	Expressways	800	40,000
Sub Total		24,800	385,000
7.	Ongoing Projects, including NHDP*	10,000	150,000
Total		**34,800**	**535,000**

** Balance works under various phases of NHDP shall be fully subsumed under the proposed Bharatmala Pariyojana, to remove overlap and undertake comprehensive development. Balance works under NH(O), SARDP-NE, EAP & LWE schemes would continue under relevant schemes.*

(Source: *MoRTH Annual Report*)

Select Public Private Partnership (PPP) models implemented by NHAI

Build-Operate-Transfer (BOT) Toll

Private developers and operators, who invest in toll-able highway projects, are entitled to collect and retain toll revenue for the tenure of the project concession period. Responsibility for design and development of the project is vested with the concessionaire under this mode. It is also responsible for operation and maintenance ("**O&M**") of the project for the entire concession period after it is developed and put to commercial operation. The tolls are prescribed by the authority on per vehicle per km basis for different types of vehicles.

Build-Operate-Transfer (BOT) Annuity

As in case of BOT (Toll) Projects, responsibility for design, development and O&M of the project section for the entire concession period is vested with the concessionaire for the project. concessionaire is given annuity payments during the O&M period as per provisions of the concession agreement. Tolling rights during O&M period vest with the employer after declaration of commercial operation of the developed section.

Hybrid Annuity Model (HAM)

Under this model, 40% of the project cost is paid by the Government/ executing agency as construction support/ grant to the private developer and the balance 60% is to be arranged by the successful bidder during the construction period. The concessionaire is paid back the amount of 60% along with interest and O&M payment in the form of annuities during operation period. While the concessionaire is responsible for the operation & maintenance during the concession period, the traffic risk is taken by the project executing agency/ employer. Tolling rights during the O&M period are vested with the employer after declaration of commercial operation of the developed section.

(Source: *Press Information Bureau, Targets of NH Construction*)

Union Budget 2021 – 2022 and the Infrastructure Sector

Further, in the Union Budget 2021-2022 presented on February 1, 2021, the following key announcements relating to the infrastructure sector were made:

1. ***Asset monetization***: Monetizing operating public infrastructure assets has been identified as a very important financing option for new infrastructure construction. A "National Monetization Pipeline" of potential brownfield infrastructure assets is proposed to be launched. An asset monetization dashboard also is proposed to be created for tracking the progress and to provide visibility to investors. Some important measures in the direction of monetisation are as follows:

(i). Each of National Highways Authority of India ("**NHAI**") and Power Grid Corporation of India Limited ("**PGCIL**") has sponsored an InvIT that will attract international and domestic institutional investors. Five operational roads with an estimated enterprise value of ₹ 5,000 crores would be transferred to the InvIT sponsored by National Highways Authority of India. Similarly, transmission assets of a value of ₹ 7,000 crores would be transferred to the InvIT sponsored by Power Grid Corporation of India Limited.

(ii). Railways plan to monetise dedicated freight corridor assets for operations and maintenance after commissioning.

(iii). The next lot of airports would be monetised for operations and management concession.

(iv). Other core infrastructure assets that are proposed to be rolled out under the asset monetization programme are: (i) NHAI operational toll roads; (ii) transmission assets of PGCIL; (iii) oil and gas pipelines of GAIL (India) Limited, Indian Oil Corporation Limited and Hindustan Petroleum Corporation Limited; (iv) Airports Authority of India airports in Tier II and III cities; (v) other railway infrastructure assets; (vi) warehousing assets of central public service enterprises ("**CPSEs**") such as Central Warehousing Corporation and NAFED, among others; and (vii) sports stadiums.

2. ***Roads and infrastructure***:

(i). More than 13,000 km length of roads, at a cost of ₹ 3.3 lakh crores, have already been awarded under the ₹ 5.35 lakh crores Bharatmala Pariyojana project of which 3,800 kms have been constructed. By March 2022, GoI would be awarding another 8,500 kms and complete an additional 11,000 kms of national highway corridors.

(ii). To further augment road infrastructure, more economic corridors are being planned. Some are:

- 3,500 km of national highway works in the state of Tamil Nadu at an investment of ₹ 1.03 lakh crores. These include the Madurai-Kollam corridor and Chittoor-Thatchur corridor. Construction is proposed to start next year.
- 1,100 km of national highway works in the state of Kerala at an investment of ₹ 65,000 crores, including 600 kilometres section of the Mumbai-Kanyakumari corridor in Kerala.

- 675 km of highway works in the state of West Bengal at a cost of ₹ 25,000 crores, including upgradation of existing road between Kolkata – Siliguri.
- National highway works of around ₹ 19,000 crores are currently in progress in the state of Assam. Further works of more than ₹ 34,000 crores covering more than 1,300 kms of national highways will be undertaken in the state of Assam in the coming three years.

3. ***Railway Infrastructure***:

(i). Indian railways have prepared a National Rail Plan for India – 2030. The plan is to create a 'future ready' railway system by 2030.
(ii). It is expected that Western dedicated freight corridor and Eastern dedicated freight corridor will be commissioned by June 2022.
(iii). Sum of ₹ 110,055 crores have been allocated to the railways, of which ₹ 107,100 crores is for capital expenditure.

4. ***Urban Infrastructure***:

(i). A new scheme is proposed to be launched at a cost of ₹18,000 crores to support augmentation of public bus transport services. The scheme will facilitate deployment of innovative PPP models to enable private sector players to finance, acquire, operate and maintain over 20,000 buses. The scheme will boost the automobile sector, provide fillip to economic growth, create employment opportunities for our youth and enhance ease of mobility for urban residents.
(ii). A total of 702 km of conventional metro is operational and another 1,016 km of metro and RRTS is under construction in 27 cities. Two new technologies i.e., 'MetroLite' and 'MetroNeo' will be deployed to provide metro rail systems at much lesser cost with same experience, convenience and safety in Tier-2 cities and peripheral areas of Tier-1 cities.
(iii). Central counterpart funding will be provided to:
- Kochi Metro Railway Phase-II of 11.5 km at a cost of ₹ 1,957.05 crores.
- Chennai Metro Railway Phase-II of 118.9 km at a cost of ₹ 63,246 crores.
- Bengaluru Metro Railway Project Phase 2A and 2B of 58.19 km at a cost of ₹ 14,788 crores.
- Nagpur Metro Rail Project Phase-II and Nashik Metro at a cost of ₹ 5,976 crores and ₹ 2,092 crores, respectively.

5. ***Power Infrastructure***:

(i). The distribution companies across the country are monopolies, either government or private. There is a need to provide choice to consumers by promoting competition. A framework will be put in place to give consumers alternatives to choose from among more than one distribution company.
(ii). A revamped reforms-based result-linked power distribution sector scheme will be launched with an outlay of ₹ 3,05,984 crores over five years. The scheme will provide assistance to distribution companies for infrastructure creation, including pre-paid smart metering and feeder separation, upgradation of systems, etc., tied to financial improvements.
(iii). GoI has proposed to launch a Hydrogen Energy Mission in 2021-22 for generating hydrogen from green power sources.

6. ***Ports, Shipping, Waterways***:

(i). Major ports will be moving from managing their operational services on their own to a model where a private partner will manage it for them. For the purpose, seven projects worth more than ₹ 2,000 crores will be offered by the major ports on PPP mode in Fiscal 2022.
(ii). A scheme to promote flagging of merchant ships in India will be launched by providing subsidy support to Indian shipping companies in global tenders floated by ministries and CPSEs. An amount of ₹ 1,624 crores will be provided over five years.
(iii). India has enacted Recycling of Ships Act, 2019 and acceded to the Hong Kong International Convention ("**HKC**"). Around 90 ship recycling yards at Alang in Gujarat have already achieved HKC-compliant certificates. Efforts will be made to bring more ships to India from Europe and Japan. Recycling capacity of around 4.50 million light displacement tonne will be doubled by 2024.

(Source: *Union Budget 2021 – 2022*)

BUSINESS

Some of the information in this section, including information with respect to our plans, strengths, and strategies, contain forward-looking statements that involve risks and uncertainties. You should read "Forward-Looking Statements" on page 14 for a discussion on the risks and uncertainties related to those statements and also "Risk Factors", "Audited Special Purpose Combined Financial Statements", "Projections of Revenue From Operations and Cash Flow from Operating Activities" and "Discussion and Analysis by the Directors of the Investment Manager of the Financial Condition, Results of Operations and Cash Flows of the Initial Portfolio Assets of the Trust" on pages 59, 458, 524 and 379, respectively, for a discussion of certain factors that may affect our business, financial condition or results of operations. Our actual results may differ materially from those expressed in or implied by these forward-looking statements.

Our fiscal year ends on March 31 of each year, and references to a particular Fiscal are to the twelve months ended March 31 of that year.

Unless otherwise stated or the context requires otherwise, the financial information included herein is based on our Audited Special Purpose Combined Financial Statements included in this Draft Placement Memorandum. For further details, please see the section entitled "Audited Special Purpose Combined Financial Statements" on page 458. Unless otherwise stated or the context requires otherwise, references in this section to "we", "our" or "us" are to Shrem InvIT along with the Initial Portfolio Assets. However, for the purpose of the Combined Financial Statements, references to "we", "us", and "our" refers to the Initial Portfolio Assets. We have included various operational and financial performance indicators in this section, some of which may not have been derived from our Audited Special Purpose Combined Financial Statements and which may not have been subject to an audit or review of the Auditors. The manner in which such operational and financial indicators are calculated and presented, and the assumptions and estimates used in such calculations, may vary from that used by other entities in the business similar to ours. Investors are accordingly cautioned against placing undue reliance on such information in making an investment decision and must evaluate such information in the context of the Combined Financial Statements.

Unless stated otherwise or the context otherwise requires, industry data used in this section has been obtained or derived from publicly available information as well as industry publications and sources, including from various government publications and websites. Neither we nor any other person connected with the Issue have independently verified this information. The data may have been re-classified by us for the purposes of presentation. Industry sources and publications generally state that the information contained therein has been obtained from sources generally believed to be reliable, but that their accuracy, completeness and underlying assumptions are not guaranteed, and their reliability cannot be assured. Industry sources and publications are also prepared based on information as of specific dates and may no longer be current or reflect current trends. Industry sources and publications may also base their information on estimates, projections, forecasts and assumptions that may prove to be incorrect. Investors must rely on their independent examination of, and should not place undue reliance on, or base their investment decision solely on this information.

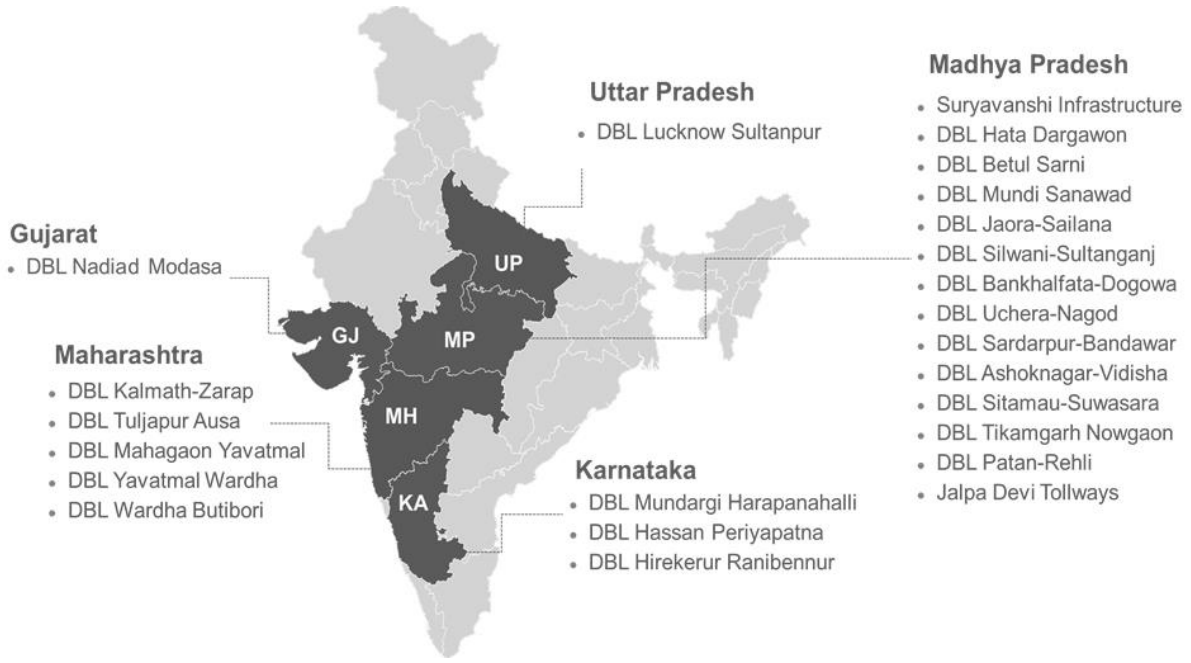
Overview

We are an InvIT set-up for the purposes of carrying on the activity of an infrastructure investment trust and for making investments in the Project SPVs or infrastructure projects or securities of Indian companies engaged in the infrastructure sector, as may be permitted, in accordance with the InvIT Regulations. We were registered with SEBI as an InvIT on February 4, 2021. Our Sponsor, Shrem Infra Structure Private Limited, is a part of the Shrem group. The Shrem group was founded in 2010 by Nitan Chhatwal, and has managed diverse investments in the hospitality, health care, telecommunication and infrastructure sectors. The Sponsor has set up the Trust, which, subject to receiving approvals from the Concessioning Authorities, will, amongst other things, acquire 100% of the issued and paid-up equity share capital of Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, the "**Holding Companies**"). It is proposed that through the Holding Companies, the Trust will ultimately acquire 100% shareholding in 20 Project SPVs and 74% shareholding in four Project SPVs (on account of shareholding requirements under the relevant concession agreements), which maintain and operate road assets aggregating to approximately 6,442.35 lane kilometers, located across five states in India (the "**Projects**"). For details of such proposed acquisitions, please see the section entitled "*Formation Transactions in relation to the Trust*" on page 19.

Our Projects

The Projects, consisting of both National Highways and State Highways, are located in the States of Madhya Pradesh, Maharashtra, Uttar Pradesh, Gujarat and Karnataka.

The map below illustrates the locations of the Projects:



* *Map not to scale*

We operate and maintain our Projects through the Project SPVs, the key details of which are provided below:

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
1.	DBL Lucknow Sultanpur Highways Limited ("**DLSHL**")	Augmenting the existing road from 11.500 kilometer to 134.700 kilometer (approximately 127.425 kilometer) on the Lucknow-Sultanpur section of National Highway number 56 (new National Highway number 731) by four-laning thereof on design, build, operate and transfer (annuity) basis.	666.77	Uttar Pradesh
2.	DBL Kalmath Zarap Highways Limited ("**DKZHL**")	Augmenting the existing road from kilometer 406.030 to kilometer 450.170 (43.905 kilometer) on the Kalmath-Zarap section of National Highway number 17 (new National Highway number 66) by four-laning on design, build, operate and transfer (annuity) basis.	267.40	Maharashtra
3.	DBL Yavatmal Wardha Highways Private Limited ("**DYWHPL**")	Augment the existing road from kilometer 400.575 to kilometer 465.500 of Yavatmal-Wardha section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	370.55	Maharashtra
4.	DBL Tuljapur Ausa Highways Limited ("**DTAHL**")	Augmenting the existing road from kilometer 0.000 to kilometer 55.835 (existing chainage: kilometer 416.000 to kilometer 470.000) (approximately 67.428 kilometer) on the Tuljapur-Ausa (including Tuljapur bypass) section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	376.96	Maharashtra
5.	DBL Wardha Butibori Highways	Augmenting the existing road from kilometer 28.800 to kilometer 85.374 (approximately 59.374 kilometer) on the Wardha-Butibori section of National Highway	351.93	Maharashtra

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
	Private Limited (“**DWBHPL**”)	number 361 by four-laning on design, build, operate and transfer (annuity) basis.		
6.	DBL Mahagaon Yavatmal Highways Private Limited (“**DMYHPL**”)	Augmenting the existing road from kilometer 320.580 to kilometer 400.575 (approximately 80.195 kilometer) on the Mahagaon to Yavatmal section of National Highway number 361 by four-laning thereof on design, build, operate and transfer (annuity) basis.	450.42	Maharashtra
7.	DBL Ashoknagar Vidisha Tollways Limited (“**DAVTL**”)	Augmenting the existing road from bypass junction of Ashoknagar (kilometer 0/10) to Bangla Chauraha (kilometer 35.68) (approximately 35.68 kilometer), on the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis.	107.04	Madhya Pradesh
8.	DBL Betul Sarni Tollways Limited (“**DBSTL**”)	Augmenting the existing road from kilometer 0.00 (Kamani Gate Betul) to kilometer 124.10 (approximately 124.10 kilometer) on the section of State Highway number 43 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	372.30	Madhya Pradesh
9.	DBL Hata-Dargawan Tollways Limited (“**DHDTL**”)	Augmenting the existing road from kilometer 0.00 (Damoh naka in Ilatta town) to kilometer 64.40 (at Dargawan Tiraha) (approximately 64.40 kilometer), section of the State Highway number 48, by intermediate-laning on build, operate and transfer (toll plus annuity) basis.	193.20	Madhya Pradesh
10.	DBL Silwani Sultanganj Tollways Limited (“**DBL Silwani**”)	Augmenting the existing road from kilometer 0.00 to kilometer 75.995 (approximately 76.00 kilometer) on the Silwani-Sultanganj-Jaisinghnagar-Sagar Road section of State Highway number 15 by intermediate-laning / two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	228.00	Madhya Pradesh
11.	DBL Sitamau Suwasara Tollways Limited (“**DSSTL**”)	Augment the existing road from kilometer 0/00 to kilometer 34/000 (approximately 34.97 kilometer) on the Sitamau-Basai-Suwasara section of major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	104.91	Madhya Pradesh
12.	DBL Mundi-Sanawad Tollways Limited (“**DMSTL**”)	Augmenting the existing road from kilometer 0.00 (at Mundi) to kilometer 64.400 (at Sanawad town) (approximately 67.63 kilometer) on the Mundi-Punasa-Sulgaon- Sanawad section of the major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	202.89	Madhya Pradesh
13.	DBL Uchera-Nagod Tollways Limited (“**DUNTL**”)	Augmenting the existing road from kilometer 32.00 (near Nagod National Highway number 75) to kilometer 87.00 (near Uttar Pradesh Border) including 1.70 kilometer Nagod bypass (approximately 55.60 kilometer) on the section of State Highway number 56 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	166.80	Madhya Pradesh

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
14.	DBL Sardarpur Badnawar Tollways Limited ("**DSBTL**")	Augmenting the existing road from kilometer 0/00 to kilometer 43/300 (approximately 43.00 kilometer) on the Sardarpur-Badnawar Road section of State Highway number 34 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis	129.00	Madhya Pradesh
15.	DBL Patan Rehli Tollways Limited ("**DPRTL**")	Augmenting the existing road from kilometer 31/10 of State Highway number 15 Rehli-Gorjhamar-Patan Chok and cross the junction of kilometer 113/00 of Rehli Gourjhamar State Highway number 15 including bypass of Rehli which is about 4.4 kilometer and terminated at kilometer 38/10 (approximately 86.60 kilometer) on the section of State Highway number 15 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	259.80	Madhya Pradesh
16.	DBL Tikamgarh-Nowgaon Tollways Limited ("**DTNTL**")	Augmenting the existing road from Y-junction in kilometer 10/8 at Tikamgarh-Malehra road (State Highway number 10) to kilometer 107 of Jhansi-Nowgaon (National Highway number 76) (approximately 76.40 kilometer), the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis	229.20	Madhya Pradesh
17.	DBL Nadiad Modasa Tollways Limited ("**DNMTL**")	Improving the section Nadiad-Madhudha-Kathial-Kapadwanj-Bayad-Modasa from kilometer 0.60 to kilometer 109.00 on State Highway number 59 by strengthening and widening to two-laning on design, build, finance, operate and transfer (annuity) basis.	325.20	Gujarat
18.	DBL Bankhalafata-Dogawa Tollways Limited ("**DBDTL**")	Augmenting the existing three major district roads under package-I comprising (i) Bankhalafata-Dogawa-via-Borawa-Savardevala (23.67 kilometer); (ii) Punasa-Mundi-Singhaji (thermal power plant) and Singhaji bridge approach road (13.30 kilometer); and (iii) Beed-Mundi-Devala-Khutala-Attoot-NVDA (28.43 kilometer) (total length of 65.40 kilometer) by intermediate-laning / two-laning on design, build, finance, operate and transfer (annuity) basis.	196.20	Madhya Pradesh
19.	DBL Jaora-Sailana Tollways Limited ("**DJSTL**")	Augmenting the existing four major district roads under package-IV comprising (i) Jaora-Piplodha-Jalandharkheda and Piploda-Sailana (42.27 kilometer); (ii) Raipururiya-Petlabad-Bamniya (18.18 kilometer); (iii) Jawad-Khoh (21.07 kilometer); and (iv) Soyat-Pidawa (6.25 kilometer) (total length of 87.77 kilometer) by intermediate-laning / two-laning on design, build, finance, operate and transfer (annuity) basis.	263.31	Madhya Pradesh
20.	DBL Mundargi Harapanahalli Tollways Limited ("**DMHTL**")	Augmenting the existing State Highway from Mundargi-Hadagali-Harapanahalli (approximate length 51.21 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.	153.63	Karnataka
21.	DBL Hassan Periyapatna	Augmenting the existing State Highway from Hassan-Ramanathapura-Periyapatna (approximate length of	221.07	Karnataka

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
	Tollways Limited ("**DHPTL**")	73.69 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.		
22.	DBL Hirekerur Ranibennur Tollways Limited ("**DHRTL**")	Augmenting the existing State Highway from Hirekerur-Ranibennur (approximate length 55.69 kilometers) on design, build, finance, operate, maintain and transfer (annuity) basis.	167.07	Karnataka
23.	Jalpa Devi Tollways Limited ("**JDTL**")	Augmenting the existing road National Highway number 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of National Highway number 3 by four-laning on design, build, finance, operate and transfer (toll) basis.	506.70	Madhya Pradesh
24.	Suryavanshi Infrastructure Private Limited ("**Suryavanshi Infra**")	Reconstruction, strengthening, widening and rehabilitation of Mandsaur-Sitamau section from existing kilometer stone 18 and ends at the existing kilometer stone 62 at Chambal River (Rajasthan border) (total 44 kilometer) on State Highway number 14 section, and its operation and maintenance, on build, operate and transfer basis.	132.00	Madhya Pradesh

** The calculation of lane kilometres is done as per the circular of MoRTH (Ref. No.341/PS/Secretary/RTH/2018) dated March 1, 2018 ("**MoRTH Measurement Circular**"). As per the MoRTH Measurement Circular, the linear measurement of the project highway has been dispensed with.).*

The concessioning authorities for the State Projects are Madhya Pradesh Road Development Corporation Limited ("**MPRDC**"), Karnataka Road Development Corporation Limited ("**KRDCL**"), Roads and Buildings Department, Government of Gujarat ("**RBDGG**") and for the National Highway Projects are National Highways Authority of India ("**NHAI**") and Ministry of Road Transport and Highways, Government of India ("**MoRTH**") (collectively, the "**Concessioning Authorities**"). Each of the concessioning authorities is a government entity.

The Projects are divided into four types on the basis of the implementation mode: (i) hybrid annuity; (ii) toll; (iii) annuity; and (iv) annuity plus toll. Key details of these models are set out below:

- The hybrid annuity model ("**HAM**") was introduced in January 2016 by the Government with an intent to share the financial risk with the developers, given that infrastructure projects are capital intensive in nature. In a HAM project, the concessioning authority shares a portion of the total project cost during the construction phase. As a mix of EPC and annuity models, HAM reduces the financial burden of a concessionaire during the project construction phase and provides an assured revenue in form of annuities, interest on reducing balance of completion cost (BCC) and O&M payments linked to inflation in the operational phase. Annuity payments eliminate the risk of income fluctuations resulting from changes in traffic volumes. Going forward, HAM is expected to remain the preferred mode of contract for both the Government as well as developers.

- In an annuity project or where the annuity component of an annuity plus toll project is concerned, a fixed amount is paid semi-annually as annuity by the respective Concessioning Authority pursuant to the applicable concession agreement. Income from the project is thus assured to the extent of the annuity to be collected, thus eliminating or reducing our risk of income fluctuations resulted from changes in traffic volumes.

- In a toll-based project or where the toll component of an annuity plus toll project is concerned, concessionares are allowed to collect tolls from vehicles that use their project carriageways during the concession period at rates notified by the relevant Concessioning Authority, as updated from time to time. Income collected on a toll basis thus fluctuates as traffic volume changes, which is a risk inherent in the operation of our toll roads. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
Bid Criteria	Bid project cost ("**BPC**") and first year O&M payable during operation (Both BPC and O&M are indexed with inflation from bid date at every payment invoice)	One time grant receivable from the relevant Concessioning Authority or annual premium payable to the relevant Concessioning Authority	Fixed half yearly payment (annuity) throughout the concession period	Fixed half yearly payment (annuity) throughout the concession period
Bid Parameter	Lowest lifecycle cost considering net present value of BPC & O&M bids	Lowest grant or highest premium, as the case maybe	Lowest fixed half year payment (annuity)	Lowest fixed half year payment (annuity)
Payments during Construction	40% of the BPC, linked to physical progress in five equal instalments	Grant if payable else Nil	Nil	Nil
Payments during Operation/Revenue	**60% of the BPC is paid in bi-annual annuities over 15 years** after COD along with interest at 3 per cent above the RBI Bank Rate and O&M payment as per bid norms	**Actual Toll Collection.** Toll rates are revised and notified annually by the relevant Concessioning Authority with a fixed formula which consists of one fixed component (3% annual) and second inflation linked (40% of wholesale price index)	**Fixed Half Yearly Payment**	**Fixed Half Yearly Payment and Actual Toll Collection.** Toll Rates are revised and notified annually by Authority with a fixed formula
Concession Period	Construction period and 15 years of operations	As per the concession agreement (which varies between 12 to 26 years)	As per the concession agreement (which is usually up to 15 years)	As per the concession agreement (which is usually up to 15 years)
Revenue Risk	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual annuity, interest and O&M payments are made by the relevant Concessioning Authority irrespective of the traffic.	The revenue is directly linked with the actual traffic plying on the project stretch. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by the relevant Concessioning Authority irrespective of the traffic.	There is no revenue risk with respect to annuity payments as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by Concessioning Authority irrespective of the traffic. The toll revenue is directly linked with the actual

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
				traffic plying on the project stretch.

Parties to the Trust

Our Sponsor, Shrem Infra Structure Private Limited and its directors, prior to entering the road infrastructure sector, was an investor in Radiant Life Care Mumbai Private Limited (from March 2015 to December 2017), which through an operation and maintenance agreement, was involved in expanding, equipping, operating, upgrading, managing and administering work of Dr. Balabhai Nanavati Hospital. For further details, please see the section entitled "*Parties to the Trust – The Sponsor - Shrem Infra Structure Private Limited*" on page 94. Further, the promoters of the Shrem group have managed investments in various assets classes such as debt capital markets, development of hotels, upgradation of hospital, private equity, lending through a group NBFC entity and development of road projects.

Our Investment Manager, Shrem Financial Private Limited, is responsible for managing us, the Holding Companies and the Project SPVs as well as undertaking investment decisions relating to our assets. The Investment Manager has been engaged in the infrastructure business since 2011. The Investment Manager, through its erstwhile subsidiary, Shrem Resort Private Limited (now Zon Hotels Private Limited), developed and operated the Novotel Goa Shrem Resorts Hotel and the Grand Mercure Goa Shrem Resort between January 2011 – September 2017. It successfully operated the two hotels until September 2017 and subsequently sold them. For further details, please see the section entitled "*Parties to the Trust – The Investment Manager – Shrem Financial Private Limited*" on page 105.

Our Trustee, Axis Trustee Services Limited, is a trusteeship company which has been registered with SEBI on January 31, 2014, and has been promoted by Axis Bank Limited for providing corporate and other trusteeship services. For further details, please see the section entitled "*Parties to the Trust – The Trustee – Axis Trustee Services Limited*" on page 94.

Our Project Manager, Shrem Road Projects Private Limited, will be overseeing the operation and maintenance of the entire portfolio of the Projects which has been contracted on a fixed price basis to DBL for the entire life of the respective Project. For further details, please see the section entitled "*Parties to the Trust – The Project Manager – Shrem Road Projects Private Limited*" on page 118. For further details in respect of our O&M arrangements, please see the section entitled "*– Operation and Maintenance*" on page 214.

Competitive Strengths

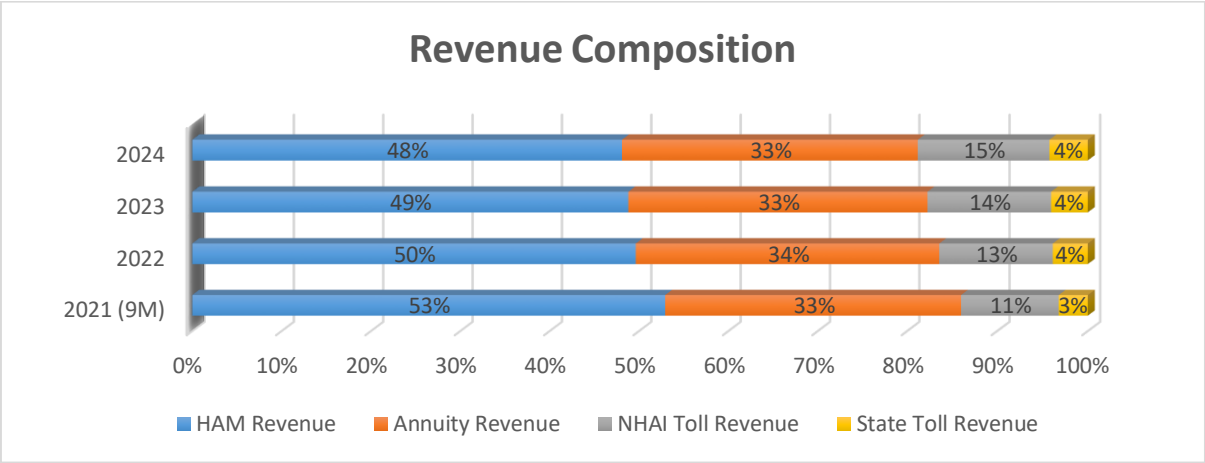
Sizeable portfolio of long term steady revenue-generating assets

The Trust will have a sizeable initial portfolio of completed and revenue-generating assets, consisting of the 24 Projects, having an aggregate length of 6,442.35lane kilometres, located across five states in India. Each Project SPV has entered into a long term concession agreement with one of the Concessioning Authorities, having concession periods ranging between 10 and 26 years, with each such concession period commencing from the appointed date of the relevant Project. Thus, the Projects will provide long term cash flows to the Trust. On a collective basis, the HAM Projects had a weighted average residual project life of approximately 13.83 years, JDTL had a residual project life of approximately 21.70 years and the state Projects had a weighted average residual project life of approximately 7.46 years, each as of December 31, 2020.

Diversified road asset portfolio in terms of Concessioning Authorities, categories of revenue and geographies

The Projects comprise six hybrid annuity projects, 10 annuity plus toll projects, six annuity projects and two toll projects (one being a sole toll project and the other being a grant and toll project) across five states of India, with concessions granted by five different Concessioning Authorities. We believe that the diversified revenue streams from our Projects place us at a unique position in the Indian road sector providing us with steady cash flow during the course of the year.

1. *Breakup of share of annuity revenue and toll revenue in total revenue*: A significant portion of our revenue comes and is expected to continue in the future from annuities paid by the relevant Concessioning Authorities, which signifies the steady nature of income for the Trust. Further, the state toll revenue from our Projects comprising approximately 4% of our combined revenue from operations has been linked with the O&M payments under 14 state Projects to the O&M Contractor, thus eliminating any risk of fluctuations in toll collection.

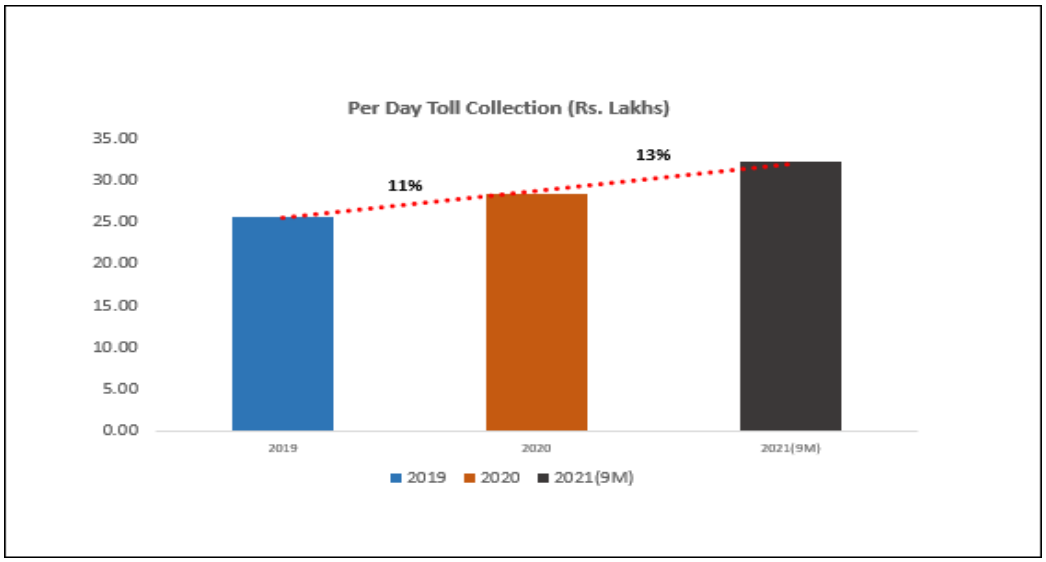


* *The revenue composition for the nine months ended December 31, 2020 is based on the Audited Special Purpose Combined Financial Statements. For further details, please see the section entitled "Audited Special Purpose Combined Financial Statements" on page 458.*

** *The revenue composition for Fiscal 2022, 2023 and 2024 is based on the Projections of Revenue from Operations and Cash Flow from Operating Activities (based on actual cash inflow). For further details of the Projections of Revenue from Operations and Cash Flow from Operating Activities and reliance on the same, please see the sections entitled "Projections of Revenue from Operations and Cash Flow from Operating Activities" and "Risk Factors – The Audited Special Purpose Combined Financial Statements and Projections of Revenue from Operations and Cash Flow from Operating Activities presented in this Draft Placement Memorandum may not be indicative of the future financial condition and results of operations of the Trust" on pages 524 and 63, respectively.*

2. *Annuity Track Record*: The Project SPVs have received 184 regular semi-annual annuities till December 31, 2020. We have been receiving regular semi-annual annuities from MPRDC since 2013, RBDGG since January 2015, KRDCL since March 2019 and NHAI since October 2019. As per the concession agreements, the relevant Concessioning Authorities are required to make payment within 15 days of due date as per concession period and average collection days on all annuities is 13 days from the due date.

3. *Sole NHAI Toll Asset:* Jalpa Devi Tollway Limited is the only NHAI project in our portfolio that is entirely based on NHAI toll revenues. It is part of a NH-3, which connects Agra-Gwalior-Shivpuri-Biaora-Dewas-Indore-Nasik-Mumbai. Toll revenue have shown consistent growth since its COD i.e. 18th June 2018. During Financial year 2020-21, the first quarter showed a decline in traffic in freight modes due to a complete lockdown in view of COVID-19. The traffic showed recovery in second and third quarter of FY21 as the lockdowns were eased and economic activities slowly started to pick up (Source: *Traffic Report*).



The concession periods of the Project SPVs started at different times and they are expected to expire at different times, thereby ensuring continuous cash flows. The residual terms of the concession agreements range between 5.51 years and 21.70 years as of December 31, 2020. We believe that our temporally and geographically diverse project portfolio and our expertise leveraged from existing projects provides us with an advantage in capitalizing on new opportunities available in the Indian roads and highways sector. We believe that this diversification strengthens our business by reducing our reliance on any specific project

and reducing the potential impact on our business of any economic slowdown or Project-specific *force majeure* event or with respect to any particular project.

Strong O&M support and favourable O&M structure

For the present O&M arrangements of the Project SPVs, please see the section entitled "– *Operation and Maintenance*" on page 214.

Pursuant to the O&M Agreements, Dilip Buildcon Limited shall be appointed as the O&M contractor in respect of the Project SPVs ("**DBL**" or the "**O&M Contractor**") prior to filing the Placement Memorandum with SEBI. DBL was the original bidder for the Project SPVs, and was also the EPC contractor for the construction and development of each of the Projects.

DBL is one of the largest players in the Indian road construction sector in terms of scale of operations and order book size. DBL has demonstrated strong execution capability over the past few years. DBL bids for projects after factoring synergetic benefits arising from clustering of projects and stretches with relatively lower hurdles of land acquisition and clearances. DBL has a large fleet of self-owned equipment and machinery and a large workforce to support all their contractual obligations, including the O&M activities relating to our projects.

Pursuant to the terms of the O&M Agreements, DBL will be responsible for discharging all the O&M responsibilities required to be discharged under the Concession Agreements by the Project SPVs. For further details, please see the section entitled " – *Operation and Maintenance*" on page 214. The Investment Manager believes that the Trust will benefit from DBL's engagement as the O&M Contractor for the Project SPVs, given that DBL was the original owner and developer of the Projects and has extensive experience in the road infrastructure sector. Some of the benefits that arise from our O&M arrangements with DBL include:

- The O&M Agreements will have a fixed cost structure for the entire concession life of each Project SPV, and the O&M Contractor will not be entitled to any adjustments in payments on account of any escalation in prices and inflation as well as adjustments for items required for the execution of the O&M obligations under the O&M Agreements.

- In case of the NHAI and MoRTH HAM Projects, we shall be entitled to withhold the release of the defect liability deposit (submitted in the form of performance security) and utilise such deposit against any cost incurred by the Project SPV or the O&M Contractor due to non-fulfilment of the O&M obligations mentioned in the relevant O&M Agreements. Further, under the O&M Agreements, the Project SPV will be required to make payments after the expiry of six months from the date of the expiry of the defects liability period under the relevant EPC agreements.

- Under the O&M Agreements, the O&M Contractor will be required to provide a performance security, in form of a corporate guarantee from the O&M Contractor, as security for the performance of its obligations. The Project SPVs shall be entitled to invoke such performance security as Damages in the event of a default by the O&M Contractor.

- Payments to the O&M Contractor will be subject to certain conditions, including:

    - such payments being subject to receipt of the annuity by the relevant Project SPV under its concession agreement, except where there is any loss of annuity or delay in receipt of annuity from the relevant Concessioning Authority due to reasons attributable to the relevant Project SPV or the relevant Concessioning Authority (in which case the payments will be released to the O&M Contractor on the due date of payment); and
    - the entitlement of a Project SPV to adjust payments to be made to the O&M Contractor in the event any annuity is withheld or reduced by the relevant Concessioning Authority on account of any deficiency in the O&M of the relevant Project or for the breach of by the O&M Contractor of the relevant O&M Agreement.

Further, since a significant portion in six of our HAM Projects is rigid pavement roads (i.e. road constructed with cement, also known as pavement quality concrete roads ("**PQC Roads**")). The design life of PQC Roads is approximately 25-30 years which is more than the concession life of such Projects (being 15 years). Since PQC roads does not require periodic overlay, the maintenance expenses are relatively lower. In addition, the average annual daily traffic plying on the State Projects is 1,343 passenger car equivalent units. The maintenance cost of such Projects, amongst other aspects, is also linked with the vehicular traffic using the Projects. Since traffic on such Projects is very low, the associated maintenance cost is also low.

Hedge against adverse interest rate movements

The NHAI and MoRTH HAM Projects have a natural hedge against the risk of adverse interest rate movement. In addition to the annuity payments due under such concession agreements during the operations period, the relevant concession agreements for HAM Projects require the relevant Concessioning Authority to pay interest on the reducing balance of the completion cost (equivalent to 60% of the BPC) throughout the operation period at the rate of 3 per cent above the prevailing RBI Bank Rate. Accordingly, any increase in the interest payable on loans by us due to an increase in interest rates gets offset by the increased

revenues earned by us on such HAM Projects. The value of the financial assets carrying this interest is higher than the consolidated debt of the Project SPVs availed from banks and financial institutions.

Skilled and experienced management team with industry experience

We will be managed by qualified personnel of the Investment Manager who have management and operational experience in the roads and highways sector. For further details, see "*Parties to the Trust – The Investment Manager – Shrem Financial Private Limited*" on page 105. We believe that the experience and leadership of these teams will contribute to our growth and success and will position the Project SPVs to be operated and managed in an efficient manner.

Attractive industry sector with favourable government policies

Further development of the infrastructure sector, in particular road infrastructure, is a priority for the GoI and has been the subject of enhanced investment from the public sector through traditional means of public investment and new channels such as PPPs. Roads have been the key focus area for budget allocations over the years. Under Union Budget 2020-21, the Government has allocated ₹ 91,823 crore (US$ 13.14 billion) under the Ministry of Road Transport and Highways. Between FY2016 and FY2021, budget outlay for road transport and highways increased at a robust CAGR of 13.10%. Huge investment have been made in the sector with total investment increasing more than three times from ₹ 51,914 crore (US$ 7.43 billion) in 2014-15 to ₹ 158,839 crore (US$ 22.73 billion) in 2018 – 2019. More than 13,000 km length of roads have already been awarded under the Bharatmala Pariyojana project, of which 3,800 kms have been constructed. By March 2022, the government aims to award another 8,500 kms and complete an additional 11,000 kms of national highway corridors (Source: *Union Budget 2021-2022*). Through the PPP model, among others, the Investment Manager believes that the Trust has acquired, and will continue to capture through further acquisitions, a significant share in the PPP format of the road infrastructure sector.

For further details, please see the section entitled "*Industry Overview*" on page 136.

Business Strategies

The Investment Manager believes the following to be the key strategies of the Trust:

Institute and maintain prudent capital management policies

The Investment Manager will seek to employ appropriate financing policies and diversify its sources of financing with the objective of minimizing our overall cost of capital to retain enough flexibility to make acquisitions in the future while also maximising distributions to Unitholders.

Active asset management

We intend to continue to manage our road assets through the services of the Project Manager and the O&M Contractor. The Project Manager and the O&M Contractor will be responsible for providing routine O&M services pursuant to the provisions of the Project Implementation and Management Agreements and O&M Agreements. For further details in respect of our O&M arrangements, please see the section entitled "– *Operation and Maintenance*" on page 214.

Future acquisition of completed steady revenue- generating annuity road infrastructure assets

The Investment Manager may in the future expand our initial portfolio by identifying and acquiring additional operational revenue generating hybrid annuity or annuity projects which meet our Investment Objectives in accordance with the provisions of the Trust Deed. For further details of the Investment Objectives, please see the section entitled "*Overview of the Trust*" on page 17.

In addition, the Investment Manager believes that due to trends in the industry, a number of acquisition opportunities may be available. These trends include the potential divestment of assets by reputed Infrastructure developers, highly leveraged private companies and by financial and private equity investors seeking to exit their investments. The Investment Manager hopes to take advantage of these opportunities by actively sourcing and acquiring quality assets from such third parties on a case-by-case basis which is value accretive to existing unitholders. The acquisitions shall be done only after a detailed technical and financial due diligence from independent third parties.

Details of the Projects

The Project SPVs have undertaken or are undertaking their respective Projects on a BOT or DBFOT basis, pursuant to which they design, build, finance, operate and maintain the Projects pursuant to concession agreements with the Concessioning Authorities.

The initial portfolio of the Trust comprises 24 Projects that are operated and maintained by the Project SPVs. The Projects are

divided into four types on the basis of the implementation mode: (i) hybrid annuity; (ii) toll; (iii) annuity; and (iv) annuity plus toll.

The table below sets forth details of the Project SPVs:

Sr. No.	Project	Type of Project Model	Project Length (in km)	Lanes in Main Carriageway (Nos. of lanes)	Type of Road and Pavement	Concessioning Authority	PCOD	Number of Annuities Received as on December 31, 2020/ Total Annuities to be paid in the Concession Period	Residual Concession Period (in years) as of December 31, 2020 / End of Concession Period
1.	DBL Lucknow Sultanpur Highways Limited	Hybrid Annuity	127.43	4	NH/ Rigid	NHAI	April 30, 2019	3/30	13.33 (April 29, 2034)
2.	DBL Kalmath Zarap Highways Limited	Hybrid Annuity	43.91	4	NH[(6)]/ Rigid / Flexible	MoRTH	March 23, 2020	1/30	14.23 (March 22, 2035)
3.	DBL Yavatmal Wardha Highways Private Limited	Hybrid Annuity	64.93	4	NH/ Rigid	NHAI	August 2, 2019	2/30	13.59 (August 1, 2034)
4.	DBL Tuljapur Ausa Highways Limited	Hybrid Annuity	67.43	4	NH/ Rigid	NHAI	November 18, 2019	2/30	13.89 (November 17, 2034)
5.	DBL Wardha Butibori Highways Private Limited	Hybrid Annuity	59.19	4	NH/ Rigid	NHAI	November 20, 2019	2/30	13.89 (November 19, 2034)
6.	DBL Mahagaon Yavatmal Highways Private Limited	Hybrid Annuity	79.99	4	NH/ Rigid	NHAI[(2)]	May 23, 2020	1/30	14.40 (May 22, 2035)

Sr. No.	Project	Type of Project Model	Project Length (in km)	Lanes in Main Carriageway (Nos. of lanes)	Type of Road and Pavement	Concessioning Authority	PCOD	Number of Annuities Received as on December 31, 2020/ Total Annuities to be paid in the Concession Period	Residual Concession Period (in years) as of December 31, 2020 / End of Concession Period
7.	DBL Ashoknagar Vidisha Tollways Limited	Toll + Annuity	35.68	2	MDR[7]/ Flexible	MPRDC[3]	July 26, 2014	12/26	7.86 (November 8, 2028)
8.	DBL Betul Sarni Tollways Limited	Toll + Annuity	124.10	2	MDR/ Flexible	MPRDC	May 12, 2015	11/26	8.27 (April 6, 2029)
9.	DBL Hata-Dargawan Tollways Limited	Toll + Annuity	64.40	2	MDR/ Flexible	MPRDC	March 6 2017	7/26	10.28 (April 9, 2031)
10.	DBL Silwani Sultanganj Tollways Limited	Toll + Annuity	76.00	2	MDR/ Flexible	MPRDC	Section 1: November 30, 2012 Section 2: March 25, 2013	15/26	6.16 (February 26, 2027)
11.	DBL Sitamau Suwasara Tollways Limited	Toll + Annuity	34.97	2	MDR/ Flexible	MPRDC	March 28, 2013	15/26	6.34 (May 3, 2027)
12.	DBL Mundi-Sanawad Tollways Limited	Toll + Annuity	67.63	2	MDR/ Flexible	MPRDC	May 15, 2013	15/26	6.21 (March 18, 2027)
13.	DBL Uchera-Nagod Tollways Limited	Toll + Annuity	55.60	2	MDR/ Flexible	MPRDC	May 15, 2014	13/26	6.89 (November 19, 2027)

Sr. No.	Project	Type of Project Model	Project Length (in km)	Lanes in Main Carriageway (Nos. of lanes)	Type of Road and Pavement	Concessioning Authority	PCOD	Number of Annuities Received as on December 31, 2020/ Total Annuities to be paid in the Concession Period	Residual Concession Period (in years) as of December 31, 2020 / End of Concession Period
14.	DBL Sardarpur Badnawar Tollways Limited	Toll + Annuity	43.00	2	MDR/ Flexible	MPRDC	June 9, 2012	17/26	5.96 (December 15, 2026)
15.	DBL Patan Rehli Tollways Limited	Toll + Annuity	86.60	2	MDR/ Flexible	MPRDC	March 31, 2017	7/26	10.28 (April 9, 2031)
16.	DBL Tikamgarh-Nowgaon Tollways Limited	Toll + Annuity	76.40	2	MDR/ Flexible	MPRDC	May 26, 2015	11/26	8.61 (August 7, 2029)
17.	DBL Nadiad Modasa Tollways Limited	Annuity	108.40	2	SH/ Flexible	RBDGG(5)	December 31, 2013	12/24	5.50 (July 2, 2026)
18.	DBL Bankhalafata-Dogawa Tollways Limited	Annuity	65.40	2	MDR/ Flexible	MPRDC	March 31, 2014	13/26	7.62 (August 13, 2028)
19.	DBL Jaora-Sailana Tollways Limited	Annuity	87.77	2	MDR/ Flexible	MPRDC	May 5, 2014	13/26	7.50 (June 28, 2028)
20.	DBL Mundargi Harapanahalli Tollways Limited	Annuity	51.21	2	SH/ Flexible	KRDC	February 5, 2018	4/16	5.75 (September 28, 2026)

Sr. No.	Project	Type of Project Model	Project Length (in km)	Lanes in Main Carriageway (Nos. of lanes)	Type of Road and Pavement	Concessioning Authority	PCOD	Number of Annuities Received as on December 31, 2020/ Total Annuities to be paid in the Concession Period	Residual Concession Period (in years) as of December 31, 2020 / End of Concession Period
21.	DBL Hassan Periyapatna Tollways Limited	Annuity	73.69	2	SH(8)/ Flexible	KRDC(4)	February 28, 2018	4/16	5.75 (September 28, 2026)
22.	DBL Hirekerur Ranibennur Tollways Limited	Annuity	55.69	2	SH/ Flexible	KRDC	February 24, 2018	4/16	5.75 (September 28, 2026)
23.	Jalpa Devi Tollways Limited	Toll	93.50	4	NH/ Rigid	NHAI	June 18, 2018	Not applicable-Toll Project	21.70 (September 6, 2042)
24.	Suryavanshi Infrastructure Private Limited	Toll	44.00	2	MDR/ Flexible	MPRDC	February 5, 2009	Not applicable-Toll Project	11.91 (November 26, 2032)

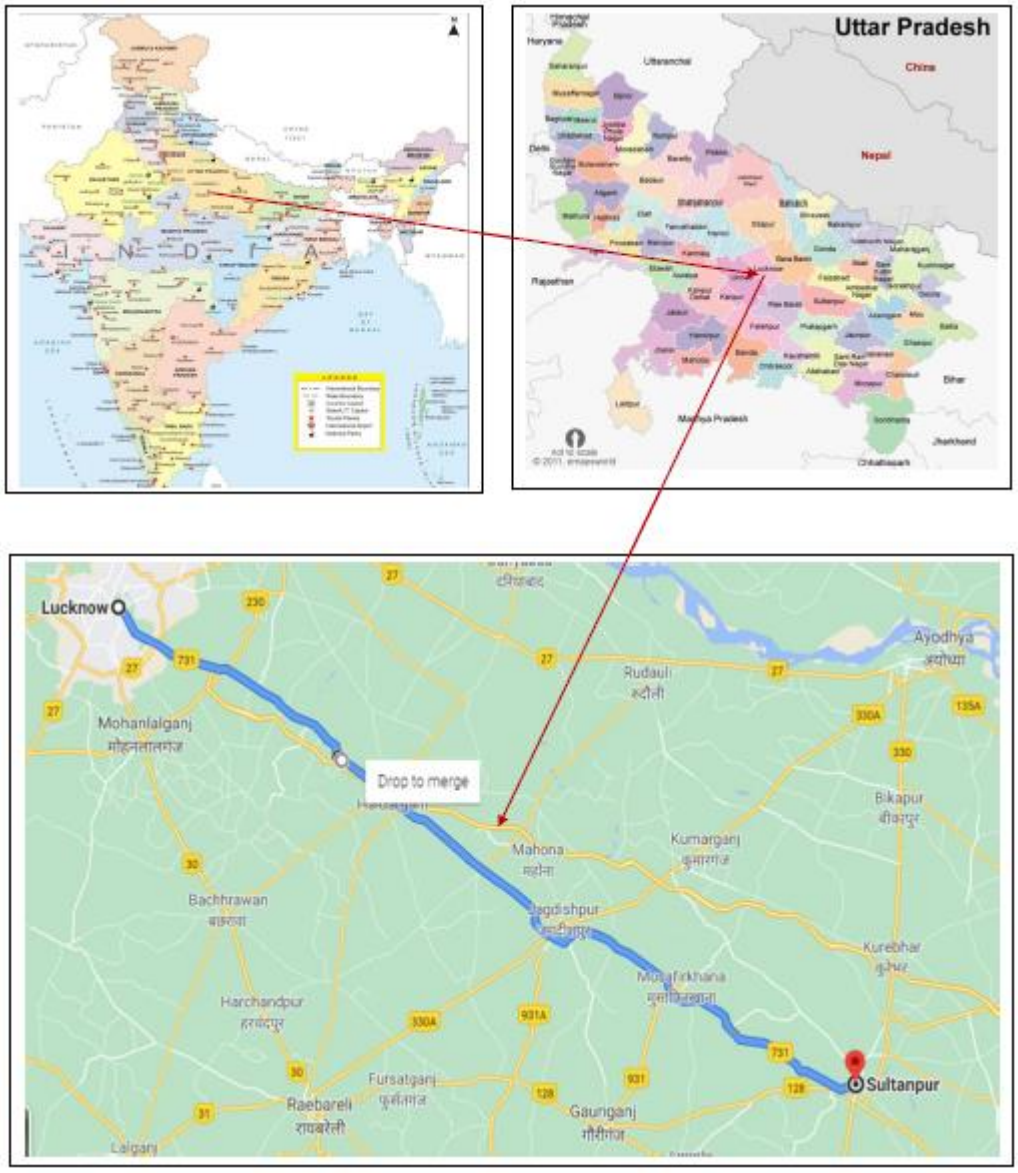
**Provisional date of commissioning.*
(1) Public Works Department
(2) National Highway Authority of India
(3) Madhya Pradesh Road Development Corporation Limited
(4) Karnataka Road Development Corporation Limited
(5) Roads & Building Department, Government of Gujarat
(6) National Highway
(7) Major District Road
(8) State Highway

DBL Lucknow Sultanpur Highways Limited Project

Concession agreement

On October 24, 2016, the National Highways Authority of India and DLSHL entered into a concession agreement (the "**DLSHL Concession Agreement**"). DLSHL was engaged, on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from 11.500 kilometer to 134.700 kilometer (approximately 127.425 kilometer) on the Lucknow-Sultanpur section of National Highway number 56 (new National Highway number 731) by four-laning, in accordance with the terms and conditions of the DLSHL Concession Agreement. The DLSHL Project was commissioned in and commenced operations from April 2019. The concession period includes 910 days of construction period and operation period of 15 years. As consideration, DLSHL shall receive the bid project cost of ₹ 20,160 million, in accordance with the payment mechanism described in the DLSHL Concession Agreement. For further details on the DLSHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DLSHL Project and the corridor it covers:



Salient Features

Salient features of the DLSHL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of the Project Highway	127.43 Km
2.	No of Bypass Roads	4 Nos.
3.	Flexible Pavement for Main carriageway (2 Lane)	-
4.	Slip Roads with 5.5 m Width	14.82 Km
5.	Toll Plaza	2 Nos
6.	Bus Bays / Bus Shelters	43 Nos.
7.	Truck Lay Bays	2 Nos
8.	Major Junction	20 Nos.
9.	Minor Junctions	110 Nos.
10.	Vehicle Underpass	4 Nos.
11.	Pedestrian/Cattle Underpass	6 Nos.
12.	ROB	1 No
13.	Major Bridges	1 No
14.	Minor Bridges for Main Carriageway	13 Nos.
15.	Box/Slab Culverts	75 Nos.
16.	Pipe Culverts	184 Nos.

Operation and Maintenance

For details of the O&M obligations of DLSHL under the DLSHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DLSHL Project net of grant / construction support received from NHAI during the construction period (wherever applicable) is ₹ 7,846.31 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinate debt) was ₹ 2,564.91 million and debt outstanding to lenders was ₹ 7,832.07 million.

DBL Kalmath Zarap Highways Limited Project

Concession agreement

On February 9, 2017, MoRTH (through the Public Works Department, Government of Maharashtra) and DKZHL entered into a concession agreement (the "**DKZHL Concession Agreement**"). DKZHL was engaged on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from kilometer 406.030 to kilometer 450.170 (43.905 kilometer) on the Kalmath-Zarap section of National Highway number 17 (new National Highway number 66) by four-laning,

in accordance with the terms and conditions of the DKZHL Concession Agreement. The DKZHL Project was commissioned in and commenced operations from March 2020. The concession period includes 730 days of construction period and an operation period of 15 years. As consideration, DKZHL shall receive the bid project cost of ₹ 9,140 million, in accordance with the payment mechanism described in the DKZHL Concession Agreement. For further details on the DKZHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DKZHL Project and the corridor it covers:

Salient Features

Salient features of the DKZHL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Main Carriageway with Rigid Pavement (Considering both sides)	(33.560*2) 67.12 Km
2.	Total Length of Main Carriageway with Flexible Pavement (Considering both sides)	10.35 Km
3.	Total length of Service Roads	23.938 Km
4.	Total length of Slip Roads	-
5.	No of Toll Plazas	1 No
6.	No of Bus Bays with Bus Shelters	43Nos. Completed 3 Nos. Construction Pending
7.	Number of Truck Lay Bays	1 No
8.	No of Rest Areas	---
9.	No of Major Junctions	5 Nos.
10.	No of Minor Junctions	61 Nos.
11.	No of Vehicular underpasses	5 Nos.
12.	No of Light Vehicular underpasses	5 Nos.
13.	No of Pedestrian underpasses	1 No.
14.	No of Subways	1 No.
15.	No of Flyovers	1 No.
16.	No of Major Bridges	7 Nos.
17.	No of Minor Bridges	9 Nos.
18.	No of Hume Pipe Culverts	127 Nos.
19.	No of Box / Slab Culverts	19 Nos.

Operation and Maintenance

For details of the O&M obligations of DKZHL under the DKZHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DKZHL Project net of grant / construction support received from MoRTH during the construction period (wherever applicable) is ₹ 2,687.80 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 795.65 million and debt outstanding to lenders was ₹ 3,001.90 million.

DBL Yavatmal Wardha Highways Private Limited Project

Concession agreement

On June 9, 2017, NHAI and DYWHPL entered into a concession agreement (the "**DYWHPL Concession Agreement**"). DYWHPL was engaged, on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from kilometer 400.575 to kilometer 465.500 of Yavatmal – Wardha section of National Highway number 361 by four-laning, in accordance with the terms and conditions of the DYWHPL Concession Agreement. The DYWHPL Project was commissioned in and commenced operations from August 2019. The concession period includes 910 days of construction period and an operation period of 15 years. As consideration, DYWHPL shall receive the bid project cost of ₹ 10,432.8 million, in accordance with the payment mechanism described in the DYWHPL Concession Agreement. For further details on the DYWHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DYWHPL Project and the corridor it covers:

Salient features of the DYWHPL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of the Project Highway	64.92 Km
2.	Widening	47.12 Km
3.	New Alignment including bypass	6.99 Km
4.	Approaches to underpasses	10.82 Km
5.	No of Bypass Roads	2 Nos.
6.	Service Roads with 7.5 m Width	9.49 Km
7.	Slip Roads with 5.5 m Width	13.47 Km
8.	Toll Plaza	1 No.
9.	Bus Bays / Bus Shelters	32 Nos.
10.	Truck Lay Bays	1 No.
11.	Rest Area	1 No.
12.	Major Junction	3 Nos.
13.	Minor Junctions	26 Nos.
14.	Vehicle Underpass	3 Nos.
15.	Light Vehicle Underpass	6 Nos.
16.	Pedestrian Underpass	2 Nos.
17.	Cattle Underpass	1 No.
18.	Vehicle Overpass	1 No. with 2 Lane Width
19.	Flyover	2 Nos.
20.	Major Bridges	3 Nos.
21.	Minor Bridges for Main Carriageway	30 Nos.
22.	Box/Slab Culverts	32 No.
23.	Pipe Culverts	83 Nos.

Operation and Maintenance

For details of the O&M obligations of DYWHPL under the DYWHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

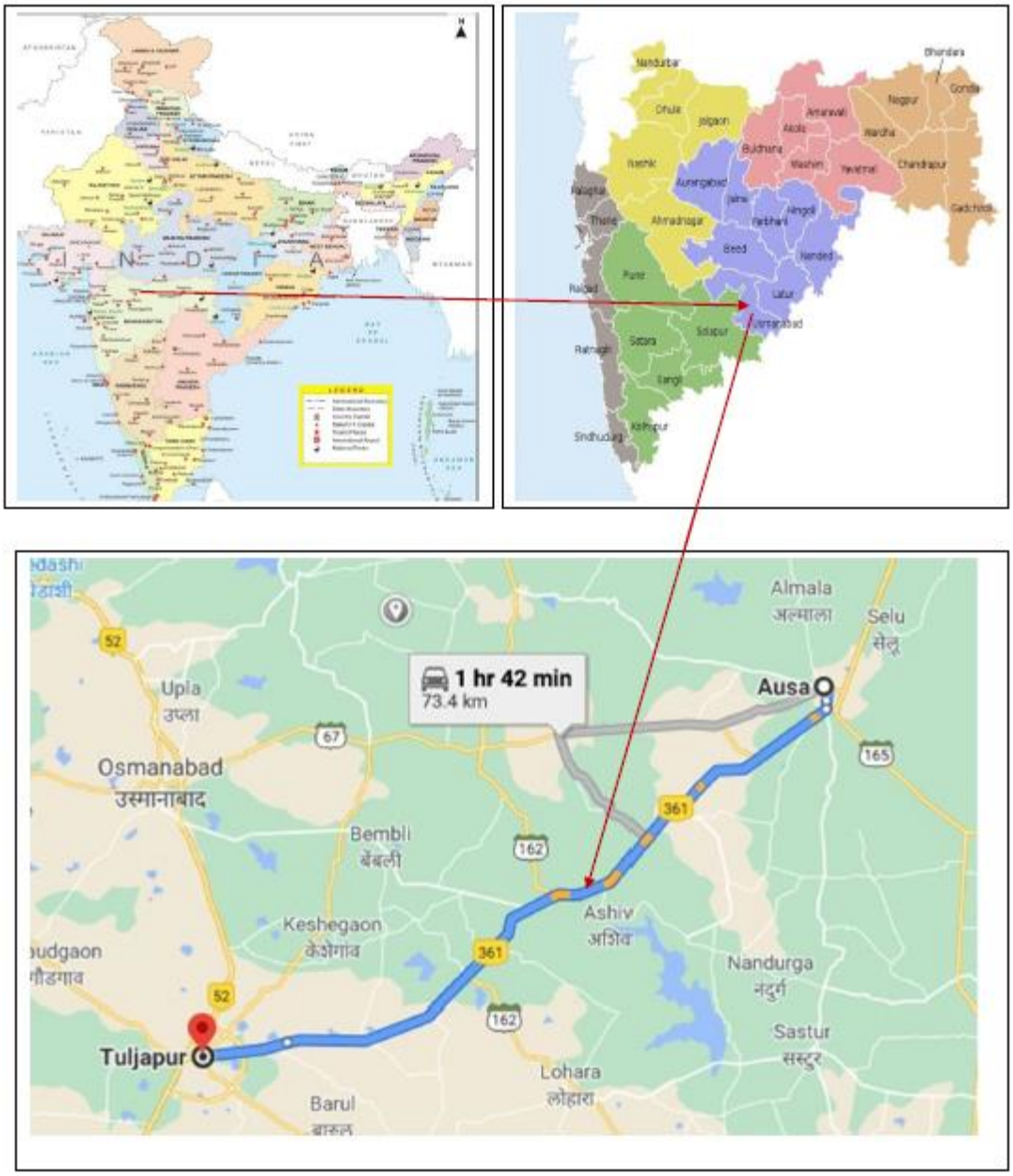
The cost of the DYWHPL Project net of grant / construction support received from NHAI during the construction period (wherever applicable) is ₹ 2,346.61 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 1,009.23 million and debt outstanding to lenders was ₹ 2,872.93 million.

DBL Tuljapur Ausa Highways Limited Project

Concession agreement

On May 1, 2017, the National Highways Authority of India and DTAHL entered into a concession agreement (the "**DTAHL Concession Agreement**"). DTAHL was engaged on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from kilometer 0.000 to kilometer 55.835 (existing chainage: kilometer 416.000 to kilometer 470.000) (approximately 67.428 kilometer) on the Tuljapur-Ausa (including Tuljapur bypass) section of National Highway number 361 by four-laning, in accordance with the terms and conditions of the DTAHL Concession Agreement. The DTAHL Project was commissioned in and commenced operations from November 2019. The concession period includes 910 days of construction period and an operation period of 15 years. As consideration, DTAHL shall receive the bid project cost of ₹ 9,110.7 million, in accordance with the payment mechanism described in the DTAHL Concession Agreement. For further details on the DTAHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DTAHL Project and the corridor it covers:



Salient features of the DTAHL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Main Carriageway 4 Lane with Rigid Pavement	67.43 Km
2.	Total length of Service Roads	18.85 Km
3.	Total length of Slip Roads	0.96 Km
4.	No of Toll Plazas	1 No.
5.	No of Bus Bays with Bus Shelters	34 Nos.
6.	Number of Truck Lay Bays	1 No
7.	No of Rest Areas	1 No
8.	No of Major Junctions	8 Nos.
9.	No of Minor Junctions	49 Nos.
10.	No of Vehicular underpasses	4 Nos.
11.	No of Light Vehicular underpasses	3 Nos.
12.	No of Pedestrian underpasses	3 Nos.
13.	No of Minor Bridges	20 Nos.
14.	No of Hume Pipe Culverts	72 Nos.
15.	No of Box / Slab Culverts	17 Nos.

Operation and Maintenance

For details of the O&M obligations of DTAHL under the DTAHL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

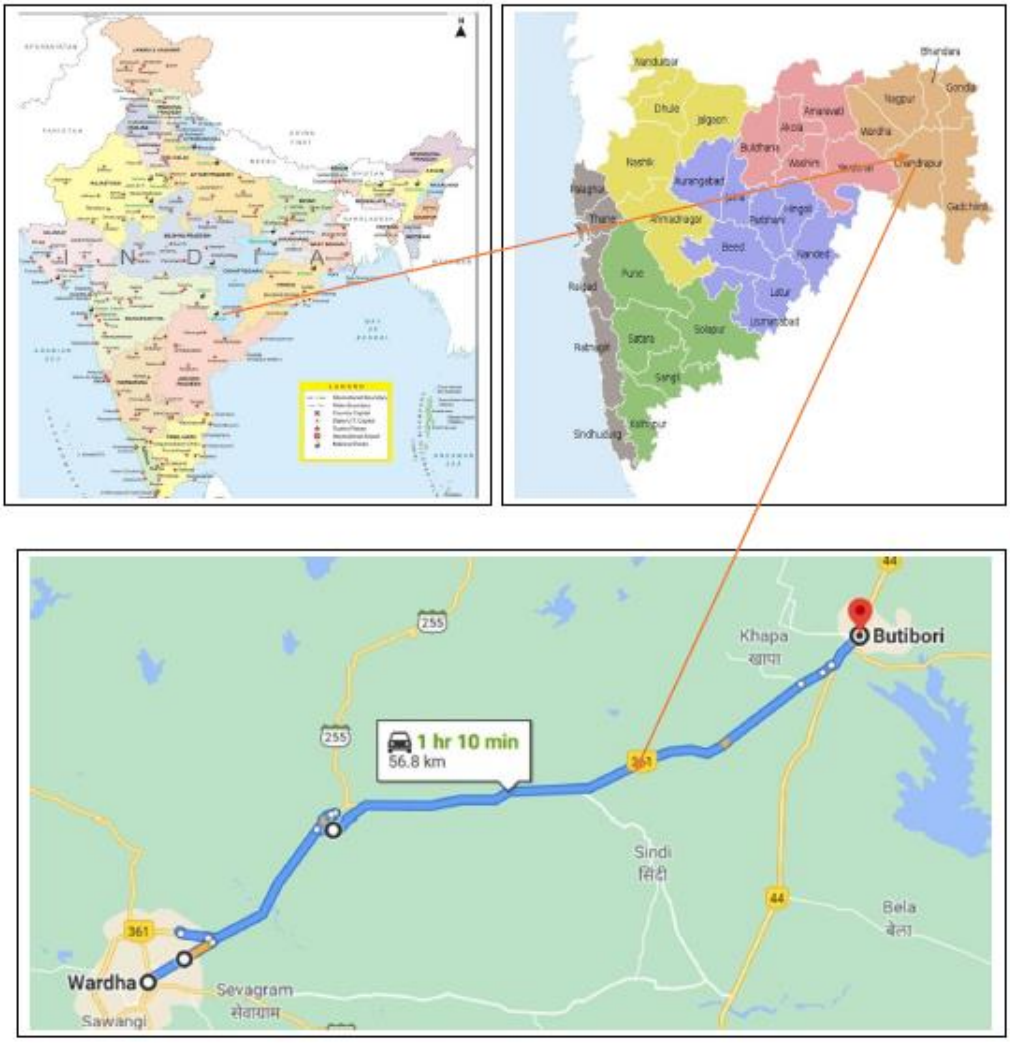
The cost of the DTAHL Project net of grant / construction support received from NHAI during the construction period (wherever applicable) is ₹ 2,078.45 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 645.73 million and debt outstanding to lenders was ₹ 2,373.45 million.

DBL Wardha Butibori Highways Private Limited Project

Concession agreement

On June 9, 2017, the National Highways Authority of India and DWBHPL entered into a concession agreement (the "**DWBHPL Concession Agreement**"). DWBHPL was engaged on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from kilometer 28.800 to kilometer 85.374 (approximately 59.374 kilometer) on the Wardha – Butibori section of National Highway number 361 by four-laning, in accordance with the terms and conditions of the DWBHPL Concession Agreement. The DWBHPL was commissioned in and commenced operations from November 2019. The concession period includes 910 days of construction period and an operation period of 15 years. As consideration, DWBHPL shall receive the bid project cost of ₹ 10,655.1 million, in accordance with the payment mechanism described in the DWBHPL Concession Agreement. For further details on the DWBHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DWBHPL Project and the corridor it covers:



Salient Features

Salient features of the DWBHPL Project include:

Sr. No.	Particulars	As per Site
1.	Total Length of Main Carriageway 4 Lane with Rigid Pavement	59.19 Km
2.	Total length of Service Roads	8.80 Km
3.	Total length of Slip Roads	19.10 Km
4.	No of Toll Plazas	1 No.
5.	No of Bus Bays with Bus Shelters	28 Nos.
6.	Number of Truck Lay Bays	2 No
7.	No of Rest Areas	Nil
8.	No of Major Junctions	9 Nos.
9.	No of Minor Junctions	30 Nos.
10.	No of Vehicular underpasses	9 Nos.
11.	No of Light Vehicular underpasses	2 Nos.
12.	No of Pedestrian underpasses	1 Nos.
13.	No of Grade Separators	1 Nos.
14.	No of Major Bridges	2 Nos.
15.	No of Minor Bridges	16 Nos.
16.	No of ROBs	1 Nos.
17.	No of Hume Pipe Culverts	65 Nos.
18.	No of Box / Slab Culverts	28 Nos.

Operation and Maintenance

For details of the O&M obligations of DWBHPL under the DWBHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

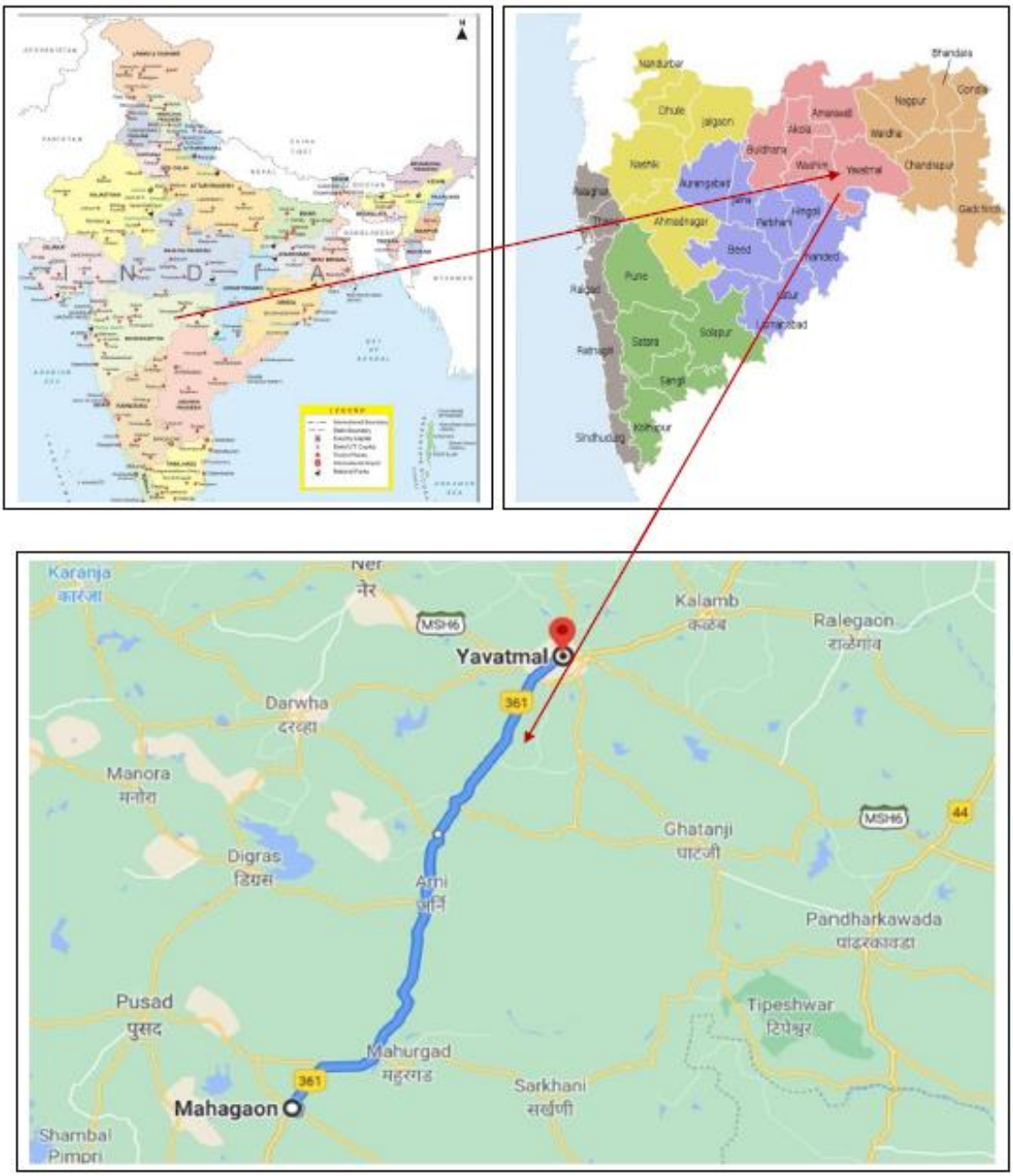
The cost of the DWBHPL Project net of grant / construction support received from NHAI during construction period (wherever applicable) is ₹ 2,669.68 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 935.56 million and debt outstanding to lenders was ₹ 2,466.39 million.

DBL Mahagaon Yavatmal Highways Private Limited Project

Concession agreement

On June 9, 2017, the National Highways Authority of India and DMYHPL entered into a concession agreement (the "**DMYHPL Concession Agreement**"). DMYHPL was engaged on a design, build, operate and transfer (annuity) or hybrid annuity (HAM) basis, to augment the existing road from kilometer 320.580 to kilometer 400.575 (approximately 80.195 kilometer) on the Mahagaon to Yavatmal section of National Highway number 361 by four-laning, in accordance with the terms and conditions of the DMYHPL Concession Agreement. The DMYHPL Project was commissioned in and commenced operations from May 2020. The concession period includes 910 days of construction period and an operation period of 15 years. As consideration, DMYHPL shall receive the bid project cost of ₹ 11,606.40 million, in accordance with the payment mechanism described in the DMYHPL Concession Agreement. For further details on the DMYHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DMYHPL Project and the corridor it covers:



Salient Features

Salient features of the DMYHPL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Main Carriageway	79.99 Km
2.	Total length of Service Roads	15.34 Km
3.	Total length of Slip Roads	10.54 Km
4.	No of Toll Plazas	1 No.
5.	No of Bus Bays with Bus Shelters	38 Nos.
6.	Number of Truck Lay Bays	1 No
7.	No of Rest Areas	1 No
8.	No of Major Junctions	07 Nos.
9.	No of Minor Junctions	45 Nos.
10.	No of Vehicular underpasses	5 Nos.
11.	No of Light Vehicular underpasses	5 Nos.
12.	No of Small Vehicular Underpass	1 No
13.	No of Pedestrian underpasses	3 Nos.
14.	No of Subways	Nil
15.	No of Flyovers	Nil
16.	No of Major Bridges	2 Nos.
17.	No of Minor Bridges	39 Nos.
18.	No of Hume Pipe Culverts	133 Nos.
19.	No of Box / Slab Culverts	24 Nos.

Operation and Maintenance

For details of the O&M obligations of DMYHPL under the DMYHPL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

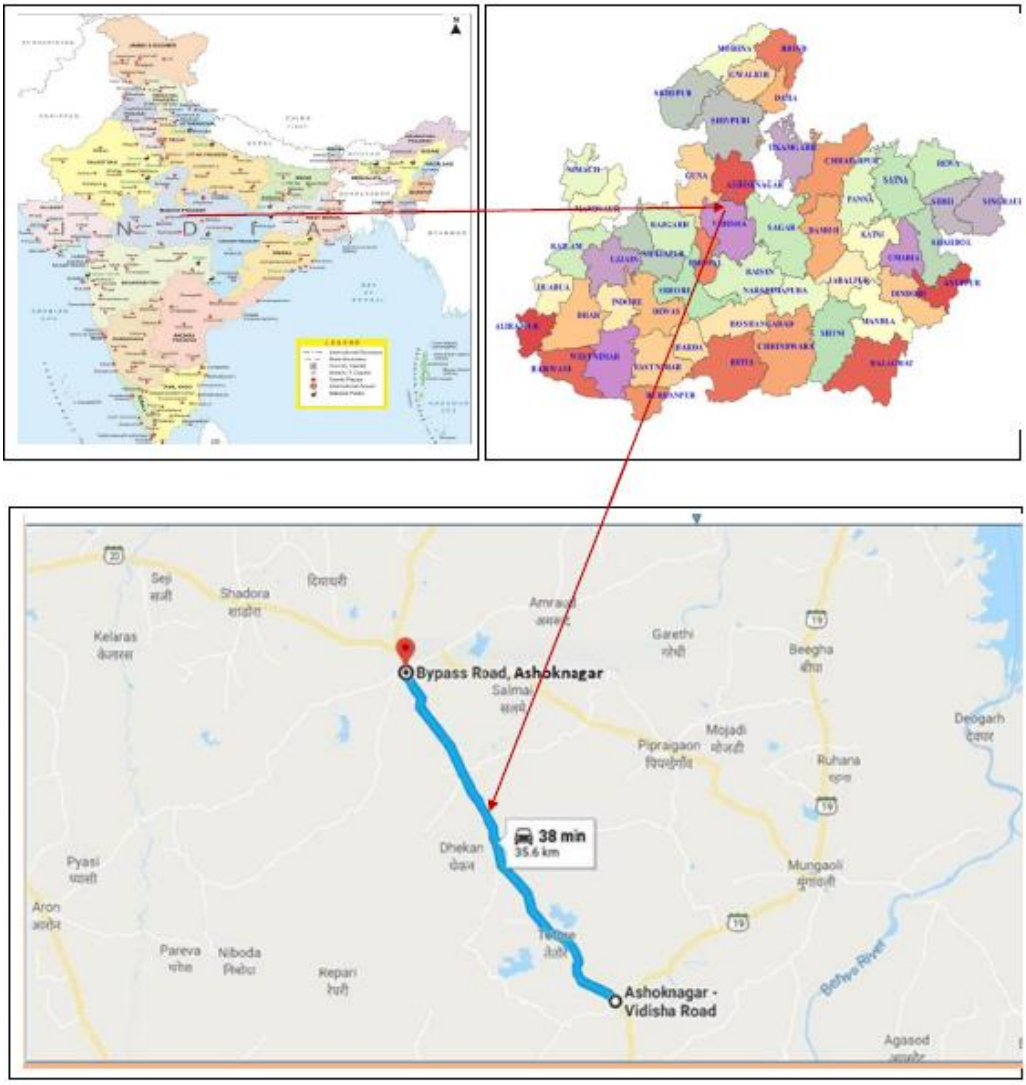
The cost of the DMYHPL Project net of grant / construction support received from NHAI during the construction period (wherever applicable) is ₹ 2,788.68 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 944.52 million and debt outstanding to lenders was ₹ 3,139.36 million.

DBL Ashoknagar Vidisha Tollways Limited Project

Concession agreement

On March 22, 2013, the Madhya Pradesh Road Development Corporation Limited and DAVTL entered into a concession agreement (the "**DAVTL Concession Agreement**"). DAVTL was engaged, on a build, operate and transfer (toll plus annuity) basis, to augment the existing road from bypass junction of Ashoknagar (kilometer 0/10) to Bangla Chauraha (kilometer 35.68) (approximately 35.68 kilometer), on the section of major district road in Madhya Pradesh by two-laning, in accordance with the terms and conditions of the DAVTL Concession Agreement. The DAVTL Project was commissioned in and commenced collection of tolls from July 2014. The DAVTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DAVTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DAVTL Concession Agreement, DAVTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 50.4 million. DAVTL pays per year, as concession fee, ₹ 1. For further details on the DAVTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DAVTL Project and the corridor it covers:



Salient Features

Salient features of the DAVTL Project include:

Sr. No.	Salient features	As per Site
1.	Total Length	35.57 Km
2.	Total Length of 2 Lane (Flexible)	33.77 Km
3.	Total Length of 4 Lane (Flexible)	1.80 Km
4.	Toll Plaza	1 No.
5.	Bus Shelters	16 Nos.
6.	Truck Lay Bays (Both sides)	2 Nos.
7.	Major Junction	2 Nos.
8.	Minor Junctions	9 Nos.
9.	ROB	Nil
10.	Major Bridges	1 No.
11.	Minor Bridges	10 Nos.
12.	Pipe Culverts	15 Nos.
13.	Slab/Box Culverts	19 Nos.

Operation and Maintenance

For details of the O&M obligations of DAVTL under the DAVTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

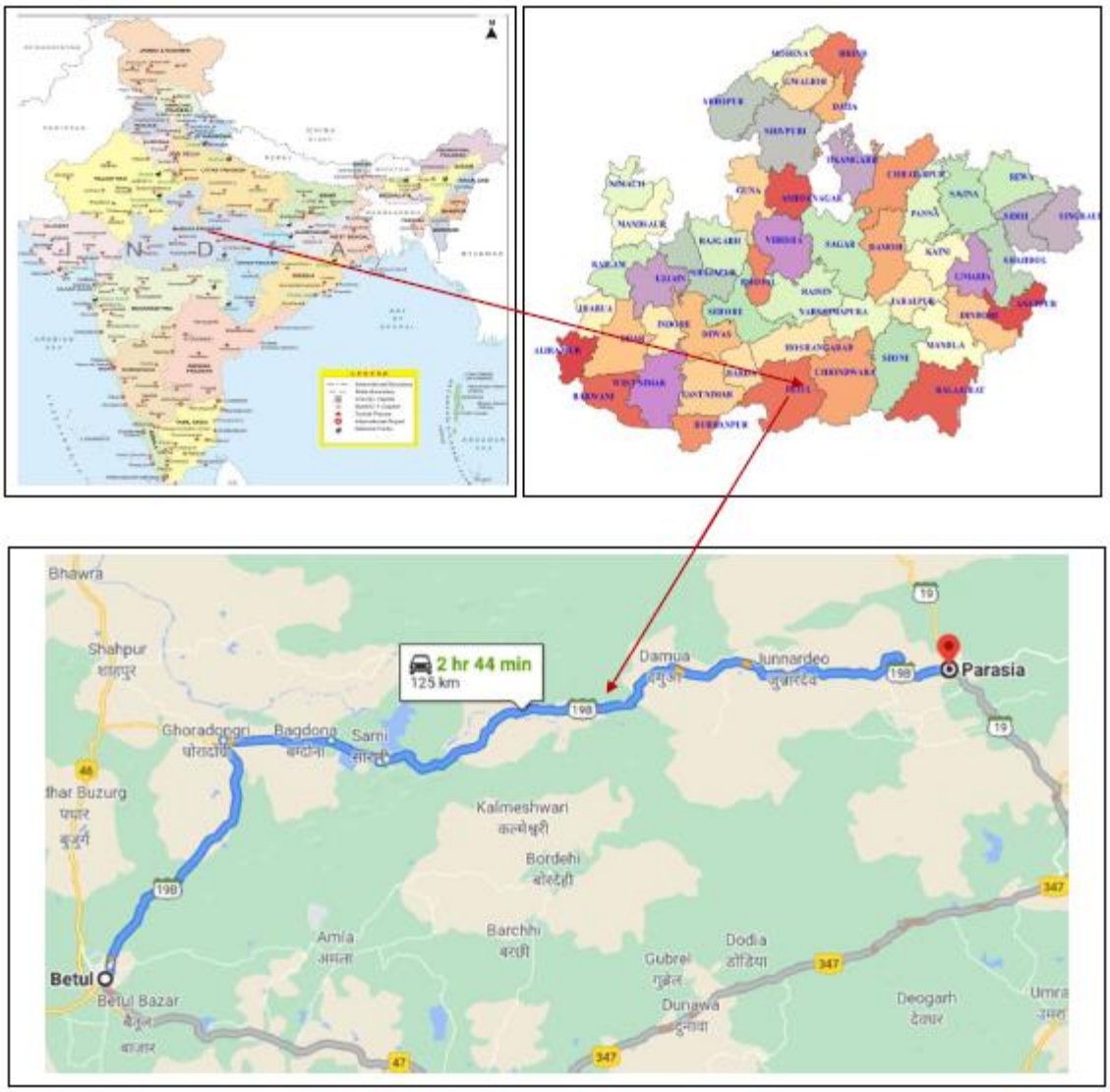
The cost of the DAVTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 778.67 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 216.61 million and debt outstanding to lenders was ₹ 483.19 million.

DBL Betul Sarni Tollways Limited Project

Concession agreement

On May 20, 2013, the Madhya Pradesh Road Development Corporation Limited and DBSTL entered into a concession agreement (the "**DBSTL Concession Agreement**"). DBSTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 0.00 (Kamani Gate Betul) to kilometer 124.10 (approximately 124.10 kilometer) on the section of State Highway number 43 by two-laning, in accordance with the terms and conditions of the DSBTL Concession Agreement. The DBSTL Project was commissioned in and commenced collection of tolls from May 2015. The DBSTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DBSTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBSTL Concession Agreement, DBSTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 154.80 million. DBSTL pays per year, as concession fee, ₹ 1. For further details on the DBSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DBSTL Project and the corridor it covers:



Salient features of the DBSTL Project include:

Sr. No.	Salient Features	As per Site
1.	Two lane length with earthen shoulder	86.66 Km
2.	Two lane with paved shoulder	27.51 Km
3.	Four Lane	5.25 Km
4.	Two lane Rigid Pavement	4.69 Km
5.	Bypasses	Nil
6.	Major Junctions / Minor Junctions	5 Nos. / 10 Nos.
7.	Toll Plaza	2 Nos.
8.	Bus Bays	22 Nos.
9.	Truck Lay bye	2 Nos.
10.	ROB	Nil
11.	Major Bridges	9 Nos.
12.	Minor Bridges	36 Nos.
13.	Pipe Culverts	245 Nos.
14.	Slab/Box Culverts	36 Nos.

Operation and Maintenance

For details of the O&M obligations of DBSTL under the DBSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

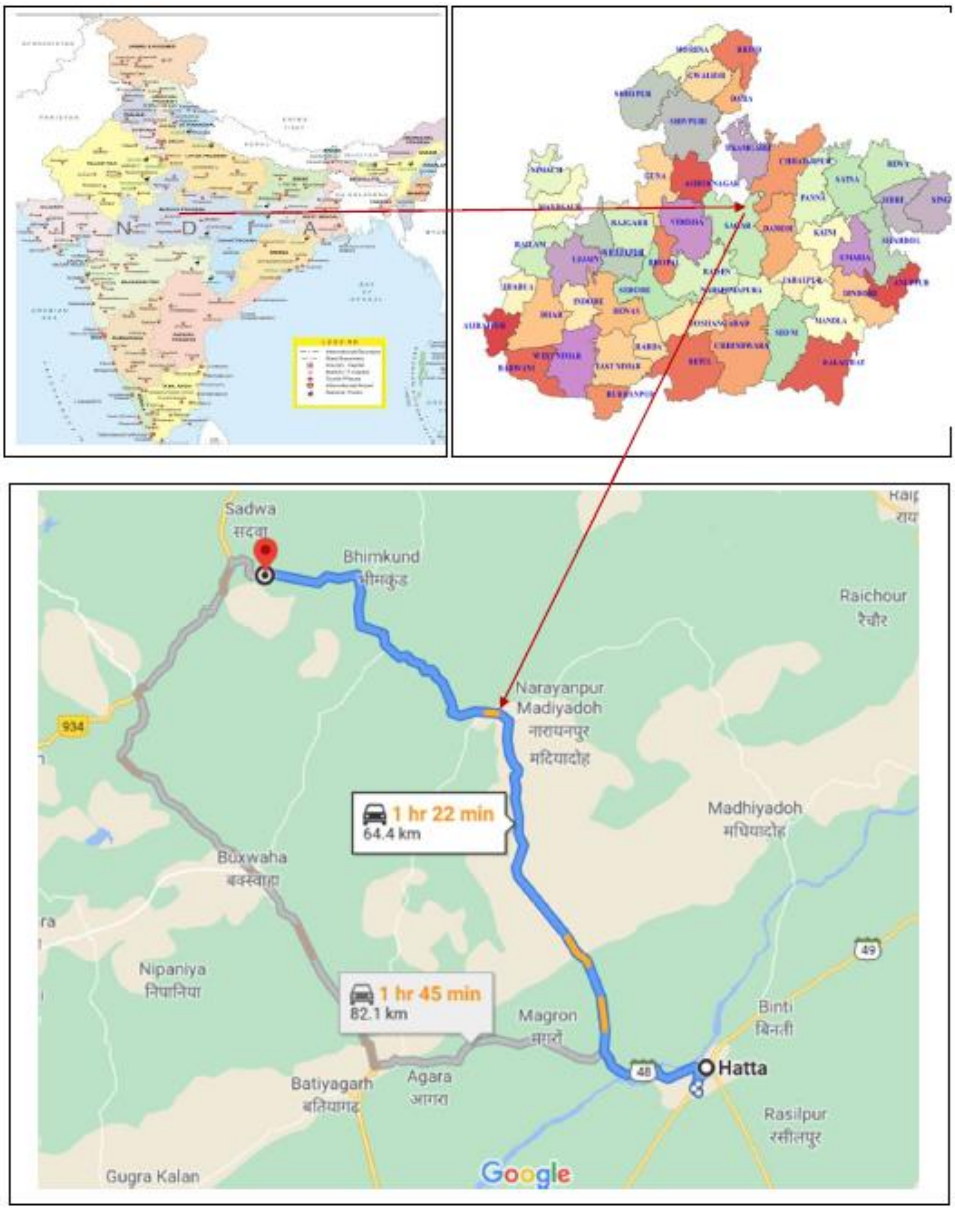
The cost of the DBSTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,594.78 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 869.46 million and debt outstanding to lenders was ₹ 1,736.03 million.

DBL Hata-Dargawan Tollways Limited Project

Concession agreement

On August 10, 2015, the Madhya Pradesh Road Development Corporation Limited and DHDTL entered into a concession agreement (the "**DHDTL Concession Agreement**"). DHDTL was engaged, on a build, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 0.00 (Damoh naka in Ilatta town) to kilometer 64.40 (at Dargawan Tiraha) (approximately 64.40 kilometer), section of the State Highway number 48, by intermediate-laning, in accordance with the terms and conditions of the DHDTL Concession Agreement. The DHDTL Project was commissioned in and commenced collection of tolls from March 2017. The DHDTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DHDTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHDTL Concession Agreement, DHDTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 70.2 million. DHDTL pays per year, as concession fee, ₹ 1. For further details on the DHDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DHDTL Project and the corridor it covers:



Salient features of the DHDTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of 2 Lane (Flexible)	64.40 Km.
2.	Toll Plaza	1 No.
3.	Bus Bays / Bus Shelters	14 Nos.
4.	Truck Lay Bays	Nil
5.	Major Junction	3 Nos.
6.	Minor Junctions	11 Nos.
7.	ROB	Nil
8.	Major Bridges	02Nos.
9.	Minor Bridges	15 Nos.
10.	Pipe Culverts	74 Nos.
11.	Slab/Box Culverts	20 Nos.

Operation and Maintenance

For details of the O&M obligations of DHDTL under the DHDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DHDTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 876.66 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 185.30 million and debt outstanding to lenders was ₹ 666.04 million.

DBL Silwani Sultanganj Tollways Limited Project

Concession agreement

On September 8, 2011, the Madhya Pradesh Road Development Corporation Limited and DBL Silwani entered into a concession agreement (the "**DBL Silwani Concession Agreement**"). DBL Silwani was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment Augmenting the existing road from kilometer 0.00 to kilometer 75.995 (approximately 76.00 kilometer) on the Silwani-Sultanganj-Jaisinghnagar-Sagar Road section of State Highway number 15 by intermediate-laning / two-laning, in accordance with the terms and conditions of the DBL Silwani Concession Agreement. The Section 1 of the DBL Silwani Project was commissioned in and commenced collection of tolls from November 2012, and the section 2 of the DBL Silwani Project was commissioned in and commenced collection of tolls from March 2013. The DBL Silwani concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DBL Silwani accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBL Silwani Concession Agreement, DBL Silwani shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 94.9 million. DBL Silwani pays per year, as concession fee, ₹ 1. For further details on the DBL Silwani Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DBL Silwani Project and the corridor it covers:

Salient features of the DBL Silwani Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length (Flexible)	75.99 Km
2.	Two lanes with Paved Shoulder	3.70 Km
3.	Two lanes with Granular Shoulder	72.30 Km
4.	Reconstruction	75.10 Km
5.	Realignment/Bypass	Nil
6.	Toll Plaza	2 Nos.
7.	Bus Bays / Bus Shelters	6 Nos.
8.	Truck Lay Bays	Nil
9.	Major Junction	3 Nos.
10.	Minor Junctions	15 Nos.
11.	ROB	Nil
12.	Level Crossing	Nil
13.	Major Bridges	1 No.
14.	Minor Bridges	17 Nos.
15.	Box/ Slab Culverts	11 Nos.
16.	Pipe Culverts	134 Nos.

Operation and Maintenance

For details of the O&M obligations of DBL Silwani under the DBL Silwani Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

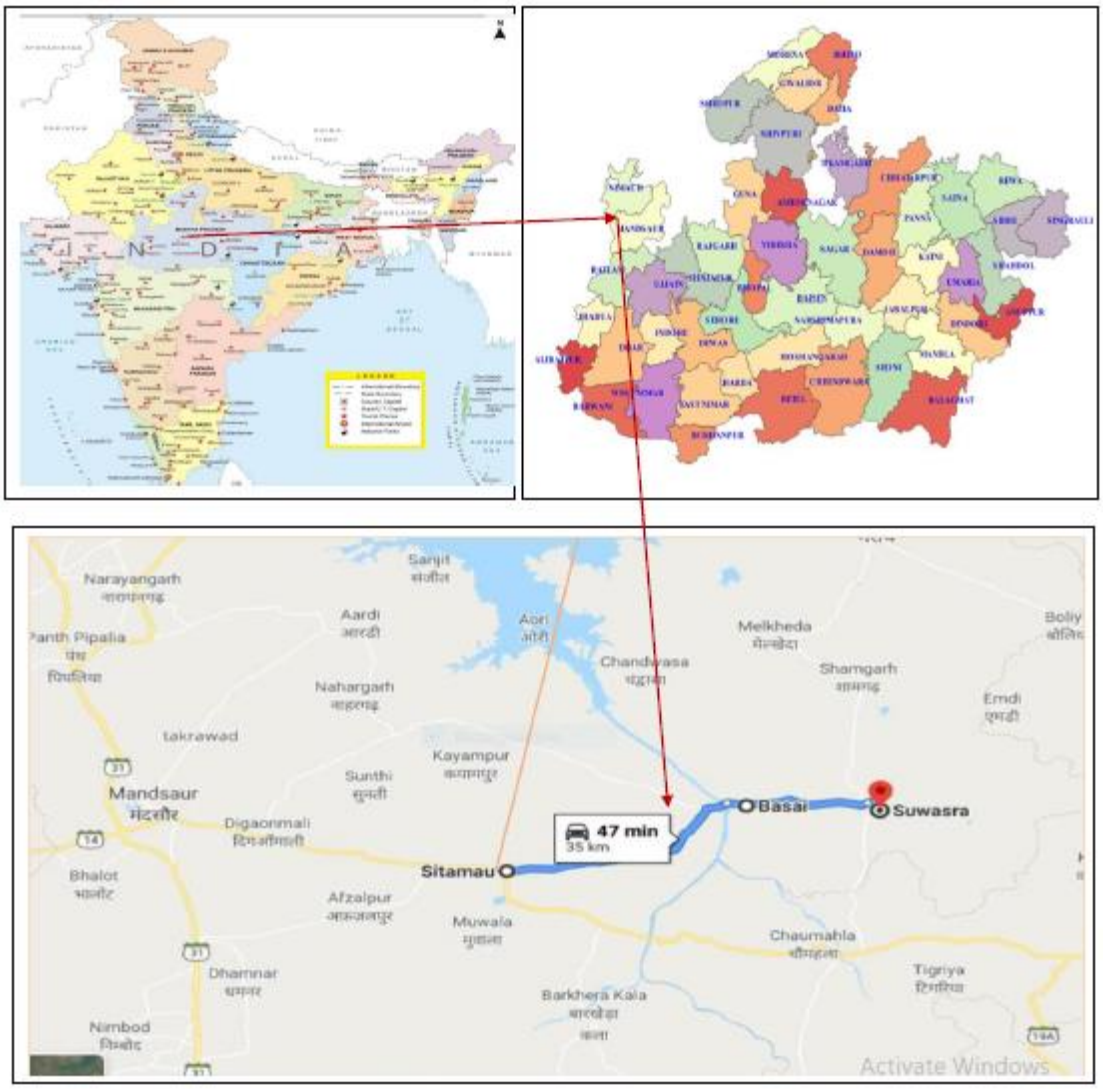
The cost of the DBL Silwani Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,166 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 210.45 million and debt outstanding to lenders was ₹ 479.80 million.

DBL Sitamau Suwasara Tollways Limited Project

Concession agreement

On December 5, 2011, the Madhya Pradesh Road Development Corporation Limited and DSSTL entered into a concession agreement (the "**DSSTL Concession Agreement**"). DSSTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 0/00 to kilometer 34/000 (approximately 34.97 kilometer) on the Sitamau-Basai-Suwasara section of major district road by two-laning, in accordance with the terms and conditions of the DSSTL Concession Agreement. The DSSTL Project was commissioned in and commenced collection of tolls from March 2013. The DSSTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DSSTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DSSTL Concession Agreement, DSSTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 36.9 million. DSSTL pays per year, as concession fee, ₹ 1. For further details on the DSSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DSSTL Project and the corridor it covers:



Salient Features

Salient features of the DSSTL Project include:

Sr. No.	Particulars	As per Site
1.	Total project length	34.96 Km
2.	Four lane divided carriageway	0.55 Km
3.	Two lane with paved shoulder	2.56 Km
4.	Bypass realignment	0.20 Km
5.	Intermediate lane with granular shoulder	31.65 Km
6.	Rigid pavement-two lane with paved shoulder	2.11 Km
7.	Flexible pavement	32.85 Km
8.	Toll plaza	1 No.
9.	Bus bays / Bus shelters	24 Nos.
10.	Truck lay bays	--
11.	Major junction	1 No.
12.	Minor Junctions	11 no.
13.	Major Bridges	2 No.
14.	Minor Bridges	7 No.
15.	Pipe Culverts	25 Nos.
16.	Slab/Box Culverts	5 Nos.

Operation and Maintenance

For details of the O&M obligations of DSSTL under the DSSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

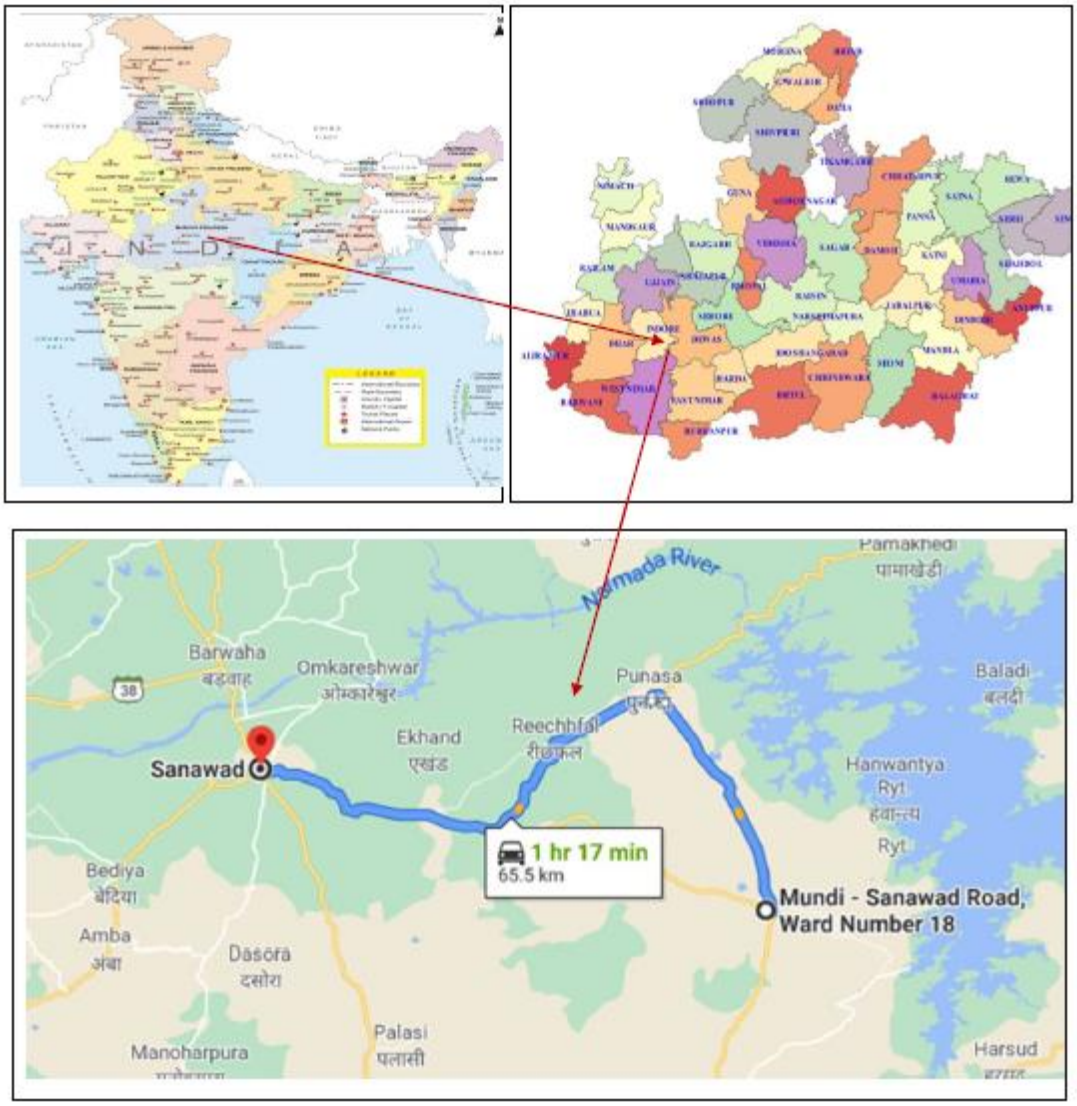
The cost of the DSSTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 562.76 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 91.10 million and debt outstanding to lenders was ₹ 269.58 million.

DBL Mundi-Sanawad Tollways Limited Project

Concession agreement

On December 5, 2011, the Madhya Pradesh Road Development Corporation Limited and DMSTL entered into a concession agreement (the "**DMSTL Concession Agreement**"). DMSTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 0.00 (at Mundi) to kilometer 64.400 (at Sanawad town) (approximately 67.63 kilometer) on the Mundi-Punasa-Sulgaon- Sanawad section of the major district road by two-laning, in accordance with the terms and conditions of the DMSTL Concession Agreement. The DMSTL Project was commissioned in and commenced collection of tolls from May 2013. The DMSTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DMSTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DMSTL Concession Agreement, DMSTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 82.8 million. DMSTL pays per year, as concession fee, ₹ 1. For further details on the DMSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DMSTL Project and the corridor it covers:



Salient features of the DMSTL Project include:

Sr. No.	Particulars	As per Site
1.	Total Project Length	67.63 Km
2.	Total Length of 2 Lane (Flexible)	65.40 Km
3.	Total Length of 4 Lane (Flexible)	2.24 Km
4.	Rigid Pavement	1.09 Km
5.	Bypass/ Realignment	2.920Km./1.35 Km
6.	Toll Plaza	1 No.
7.	Bus Bays / Bus Shelters	56 nos.
8.	Truck Lay Bays	Nil
9.	Major Junction	1 No.
10.	Minor Junctions	20 Nos.
11.	ROB	Nil
12.	Major Bridges	1 No.
13.	Minor Bridges	24 Nos.
14.	Pipe Culverts	88 Nos
15.	Slab/Box Culverts	16 Nos

Operation and Maintenance

For details of the O&M obligations of DMSTL under the DMSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

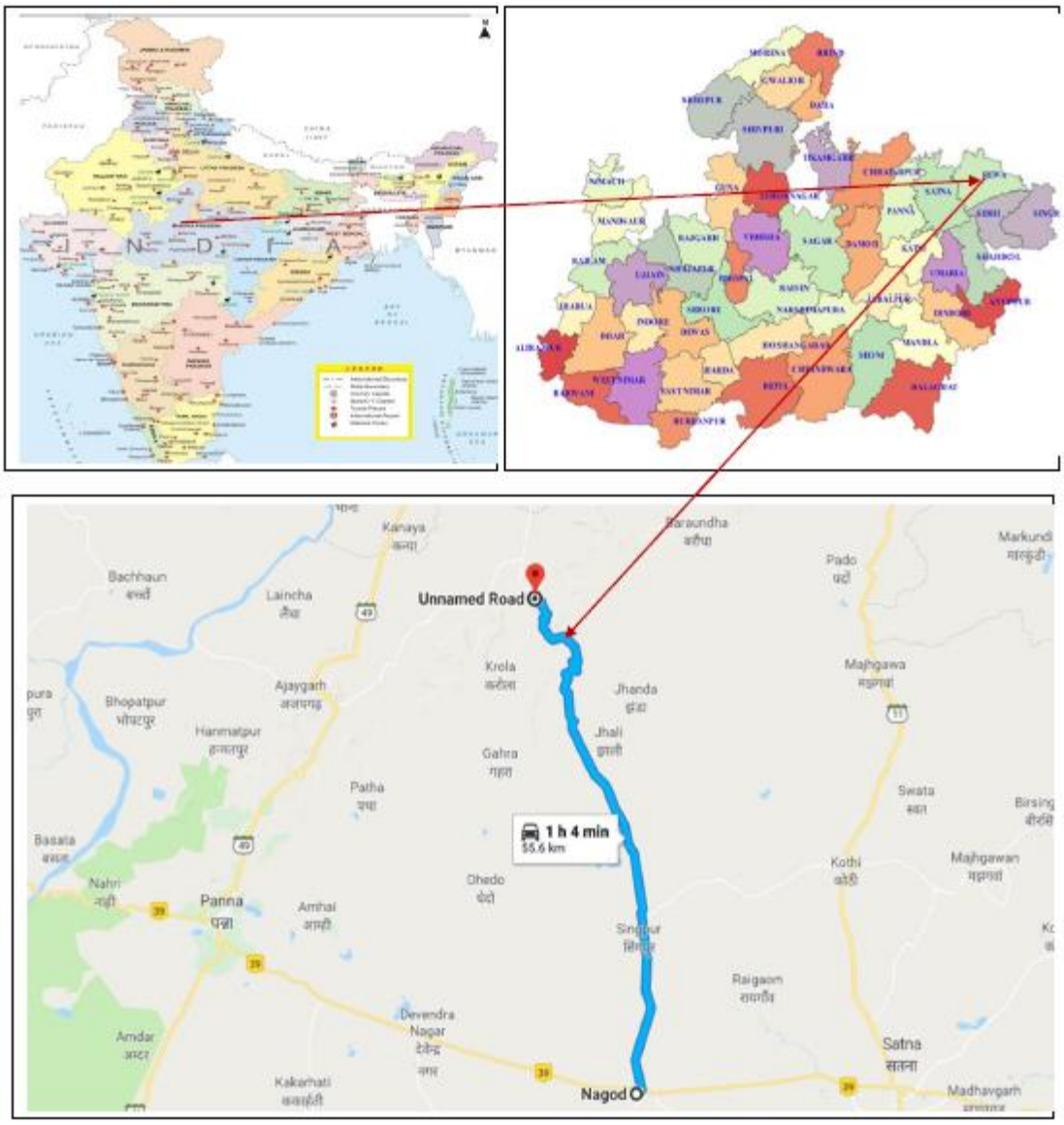
The cost of the DMSTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,187.08 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 351.15 million and debt outstanding to lenders was ₹ 558.69 million.

DBL Uchera-Nagod Tollways Limited Project

Concession agreement

On September 24, 2012, the Madhya Pradesh Road Development Corporation Limited and DUNTL entered into a concession agreement (the "**DUNTL Concession Agreement**"). DUNTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 32.00 (near Nagod National Highway number 75) to kilometer 87.00 (near Uttar Pradesh Border) including 1.70 kilometer Nagod bypass (approximately 55.60 kilometer) on the section of State Highway number 56 by two-laning, in accordance with the terms and conditions of the DUNTL Concession Agreement. The DUNTL Project was commissioned in and commenced collection of tolls from May 2014. The DUNTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DUNTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DUNTL Concession Agreement, DUNTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 84.6 million. DUNTL pays per year, as concession fee, ₹ 1. For further details on the DUNTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DUNTL Project and the corridor it covers:



Salient features of the DUNTL Project include:

Sr. No.	Salient Features	As per Site
1.	Length of 2-Lane without paved shoulder	51.80 Km
2.	Length of 2-Lane with paved shoulder	3.80 Km
3.	Length of Nagod Bypass	1.70 Km
4.	Toll Plaza	1 No.
5.	Bus Bays / Bus Shelters	7 Nos.
6.	Truck Lay Bays	1 No.
7.	Major Junction	4 Nos.
8.	Minor Junctions	9 Nos.
9.	Major Bridges	2 Nos.
10.	Minor Bridges	10 Nos.
11.	Box/Slab Culverts	30 Nos.
12.	Pipe Culverts	92 Nos.

Operation and Maintenance

For details of the O&M obligations of DUNTL under the DUNTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

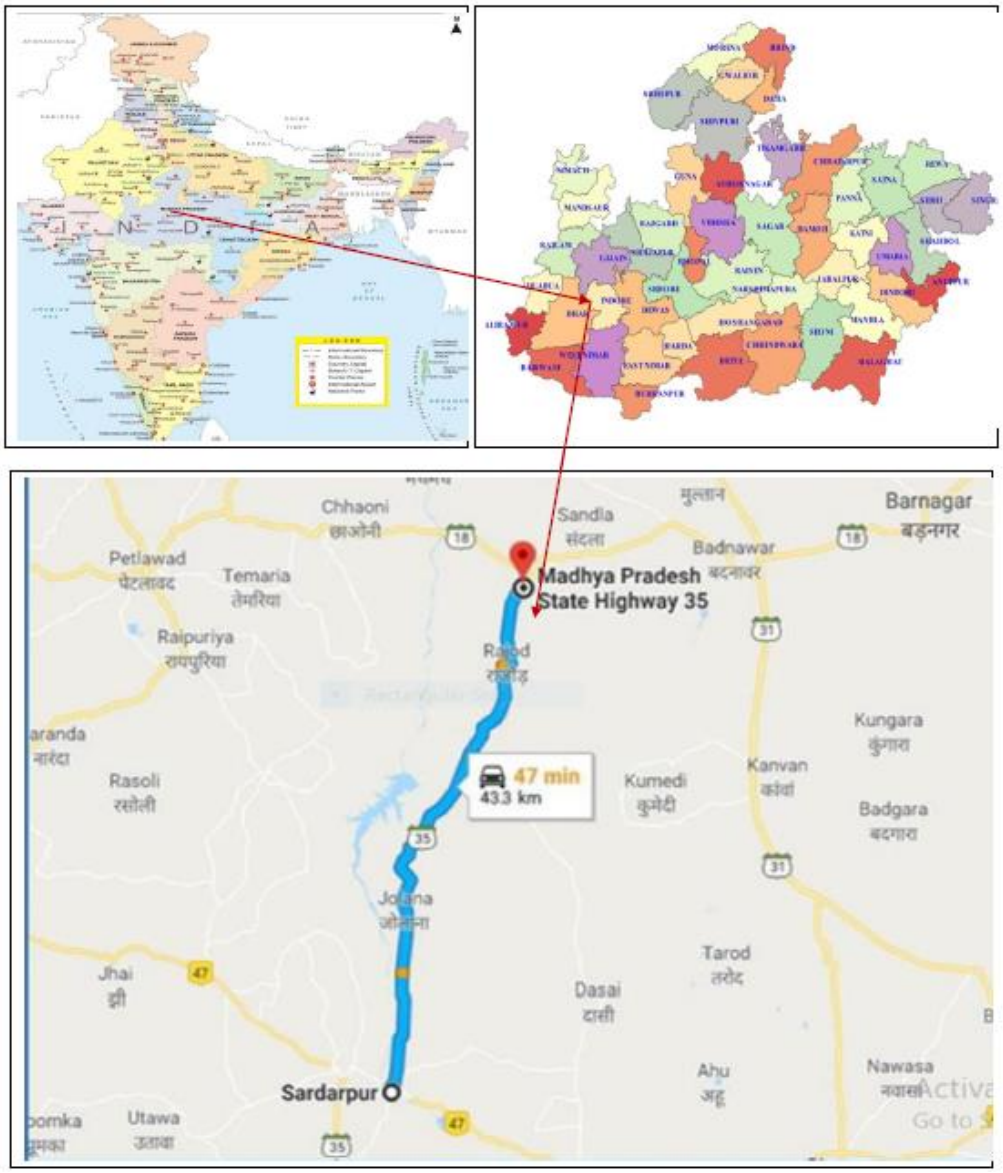
The cost of the DUNTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 987.43 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 320 million and debt outstanding to lenders was ₹ 525.67 million.

DBL Sardarpur Badnawar Tollways Limited Project

Concession agreement

On June 29, 2011, the Madhya Pradesh Road Development Corporation Limited and DSBTL entered into a concession agreement (the "**DSBTL Concession Agreement**"). DSBTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 0/00 to kilometer 43/300 (approximately 43.00 kilometer) on the Sardarpur-Badnawar Road section of State Highway number 34 by two-laning, in accordance with the terms and conditions of the DSBTL Concession Agreement. The DSBTL Project was commissioned in and commenced collection of tolls from June 2012. The DSBTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DSBTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DSBTL Concession Agreement, DSBTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 47.1 million. DSBTL pays per year, as concession fee, ₹ 1. For further details on the DSBTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DSBTL Project and the corridor it covers:



Salient features of the DSBTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of 2 Lane with earthen shoulder (Flexible)	38.73 Km
2.	Total Length of 2 Lane with paved shoulder	4.245 Km
3.	Widening	Nil
4.	Reconstruction	31.242 Km
5.	Realignment/Bypass	11.734 Km
6.	Toll Plaza	Km8+600
7.	Bus Bays / Bus Shelters	16 Nos.
8.	Truck Lay Bays	1 No.
9.	Rest Areas	Nil
10.	Major Junction	2 Nos.
11.	Minor Junctions	12 Nos.
12.	ROB/RUB	Nil
13.	Under Passes (VUP/PUP/FO)	Nil
14.	Major Bridges Retained	1 No.
15.	Total Minor Bridges	17 Nos.
16.	Total Pipe Culverts	22 Nos.
17.	Total Slab Culverts	24 Nos.

Operation and Maintenance

For details of the O&M obligations of DSBTL under the DSBTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

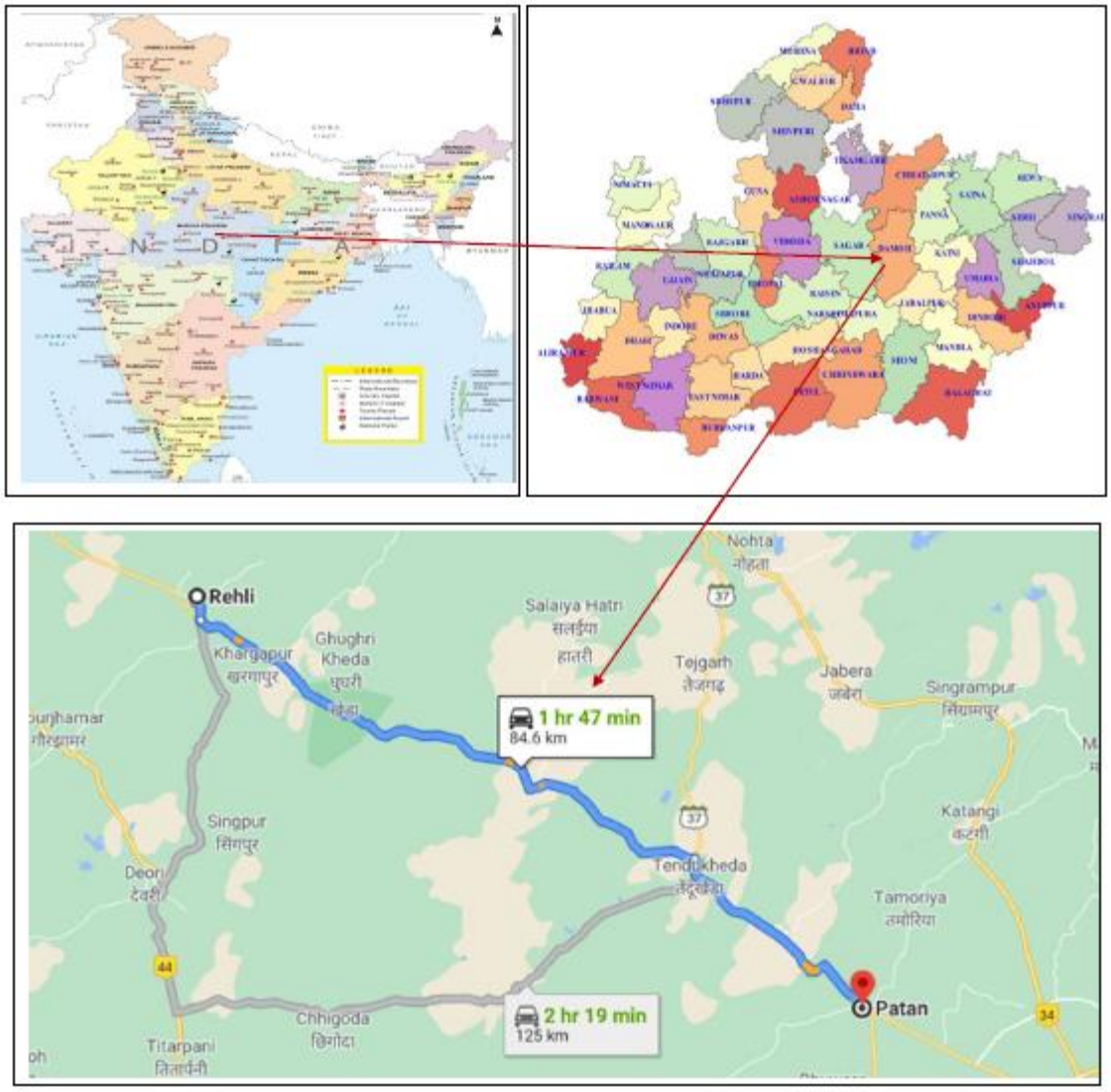
The cost of the DSBTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 895.21 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 178.42 million and debt outstanding to lenders was ₹ 304.75 million.

DBL Patan Rehli Tollways Limited Project

Concession agreement

On September 1, 2015, the Madhya Pradesh Road Development Corporation Limited and DPRTL entered into a concession agreement (the "**DPRTL Concession Agreement**"). DPRTL was engaged, on a design, build, finance, operate and transfer (toll plus annuity) basis, to augment the existing road from kilometer 31/10 of State Highway number 15 Rehli-Gorjhamar-Patan Chok and cross the junction of kilometer 113/00 of Rehli Gourjhamar State Highway number 15 including bypass of Rehli which is about 4.4 kilometer and terminated at kilometer 38/10 (approximately 86.60 kilometer) on the section of State Highway number 15 by two-laning, in accordance with the terms and conditions of the DPRTL Concession Agreement. The DPRTL Project was commissioned in and commenced collection of tolls from March 2017. The DPRTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DPRTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DPRTL Concession Agreement, DPRTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 176.4 million. DPRTL pays per year, as concession fee, ₹ 1. For further details on the DPRTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DPRTL Project and the corridor it covers:



Salient features of the DPRTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Stretch	86.60 Km
	Four lane divided carriageway	2.20 Km
	Two lane with paved shoulder	4.30 Km
	Single Lane with granular shoulder	21.40 Km
	Two Lane with Granular Shoulder	53.40 Km
	Bypass	4.40 Km
3.	Toll Plaza	02 Nos.
4.	Bus Bays / Bus Shelters	16 Nos.
5.	Truck Lay Bays	Nil
6.	Major Junction	06 Nos.
7.	Minor Junctions	14 Nos.
8.	ROB	Nil
9.	Major Bridges	05 Nos.
10.	Minor Bridges	19 Nos.
11.	Box/Slab Culverts	20 Nos.
12.	Pipe Culverts	78 Nos.
13.	CUP	4 Nos.

Operation and Maintenance

For details of the O&M obligations of DPRTL under the DPRTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

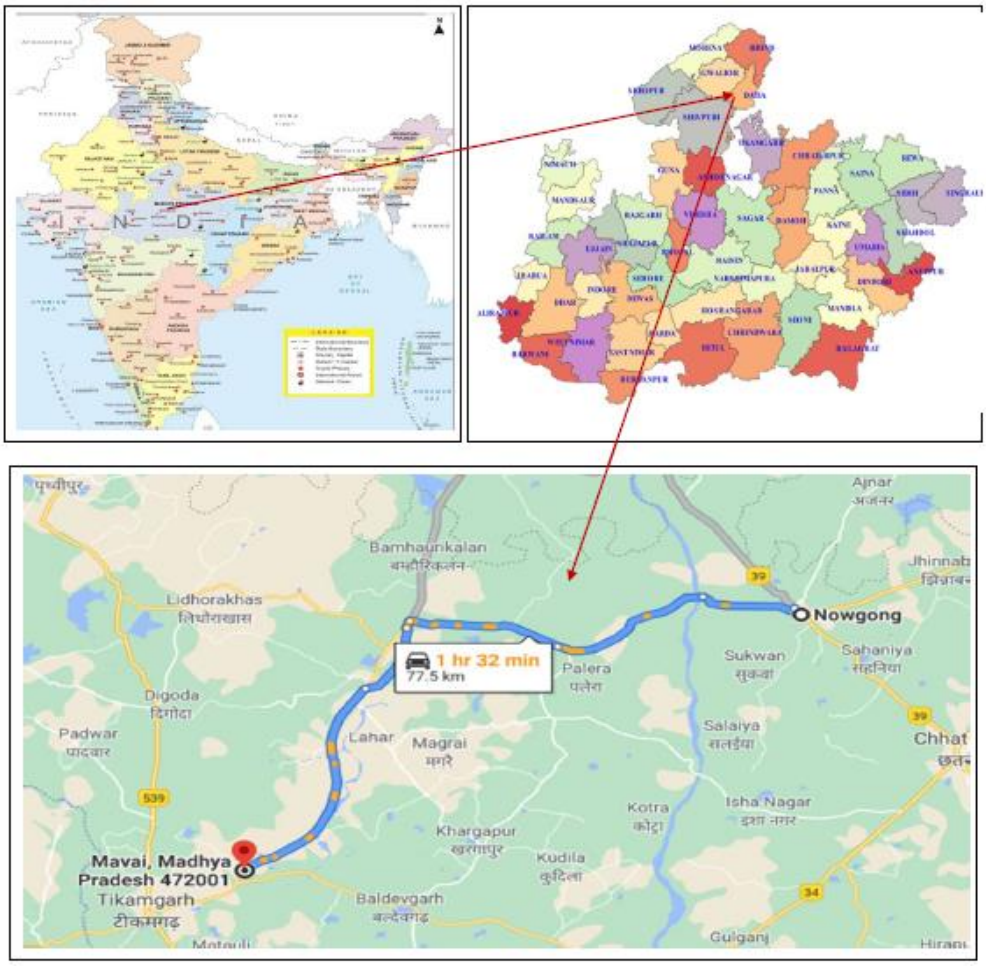
The cost of the DPRTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 2,342.92 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 733.90 million and debt outstanding to lenders was ₹ 1,530.63 million.

DBL Tikamgarh-Nowgaon Tollways Limited Project

Concession agreement

On November 12, 2013, the Madhya Pradesh Road Development Corporation Limited and DTNTL entered into a concession agreement (the "**DTNTL Concession Agreement**"). DTNTL was engaged, on a build, operate and transfer (toll plus annuity) basis, to augment the existing road from Y-junction in kilometer 10/8 at Tikamgarh-Malehra road (State Highway number 10) to kilometer 107 of Jhansi-Nowgaon (National Highway number 76) (approximately 76.40 kilometer), the section of major district road by two-laning, in accordance with the terms and conditions of the DTNTL Concession Agreement. The DTNTL Project was commissioned in and commenced collection of tolls from May 2015. The DTNTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DTNTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DTNTL Concession Agreement, DTNTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 89.1 million. DTNTL pays per year, as concession fee, ₹ 1. For further details on the DTNTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DTNTL Project and the corridor it covers:



Salient features of the DTNTL Project include:

Sr. No.	Particulars	As per Site
1.	Total Length	77.52 km
2.	Length of 2-Lane with granular shoulder	64.12 km
3.	Length of 2-Lane with paved shoulder	10.00 Km
4.	Length of 4-Lane road	3.40 Km
5.	Length of Jatara Bypass	8.40 Km
6.	Toll Plaza	2 Nos.
7.	Bus Shelters	8 No
8.	Truck Lay Bays	Nil
9.	Major Junction	6 Nos.
10.	Minor Junctions	14 Nos.
11.	Major Bridges	3 Nos.
12.	Minor Bridges	12 Nos.
13.	Box/Slab Culverts	36 Nos.
14.	Pipe Culverts	60 Nos.

Operation and Maintenance

For details of the O&M obligations of DTNTL under the DTNTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

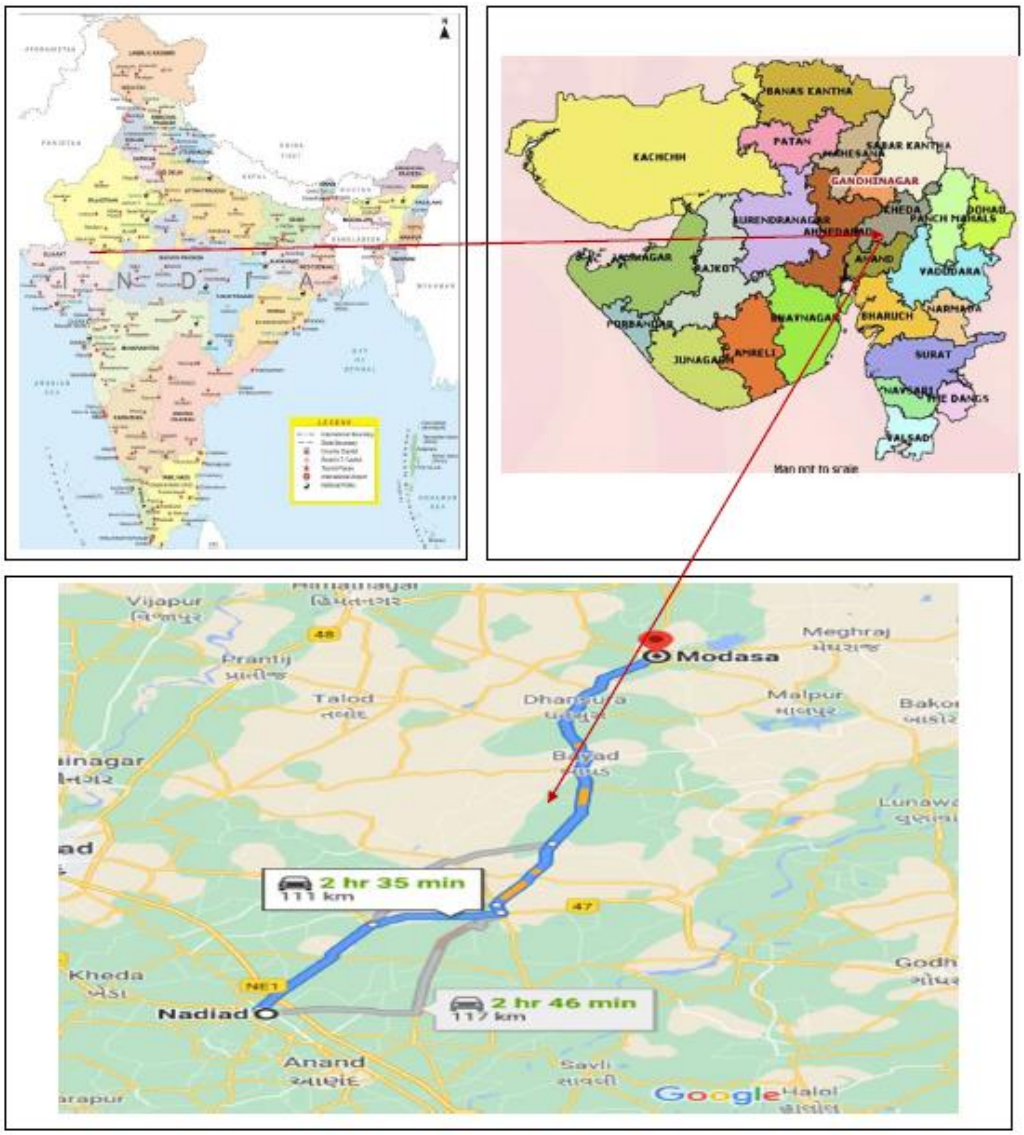
The cost of the DTNTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,132.37 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 321.77 million and debt outstanding to lenders was ₹ 683.80 million.

DBL Nadiad Modasa Tollways Limited Project

Concession agreement

On January 05, 2012, the Governor of State of Gujarat, represented by Executive Engineer, Roads and Buildings Department and DNMTL entered into a concession agreement (the "**DNMTL Concession Agreement**"). DNMTL was engaged, on a design, build, finance, operate and transfer (annuity) basis, to improve of the section Nadiad-Madhudha-Kathlal-Kapadwanj-Bayad-Modasa from kilometer 0.60 to kilometer 109.00 on State Highway number 59 by strengthening and widening to two-laning, in accordance with the terms and conditions of the DNMTL Concession Agreement. The DNMTL Project was commissioned in and commenced operations from December 2013. The DNMTL concession was granted for 14 years. As consideration, for DNMTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DNMTL Concession Agreement, DNMTL shall receive, on each annuity payment date, the sum of ₹ 174.60 million. DNMTL pays per year, as concession fee, ₹ 1. For further details on the DNMTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DNMTL Project and the corridor it covers:



Salient features of the DNMTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of 2 Lane Road	101.03 Km
2.	Total Length of 4 Lane Road	7.37 Km.
3.	Length of Project Highway in Widening	Nil
4.	Length of Realignment/Bypass	Nil
5.	Number of Toll Plazas	1 No.
6.	Number of Bus Shelters	36 Nos.
7.	Number of Truck Lay Bays	0 Nos.
8.	Number of Major Junction	9 Nos.
9.	Number of Minor Junctions	58 Nos.
10.	Number of ROB structures	Nil
11.	Number of Bypasses	Nil
12.	Number of Major Bridges (Retain & Repair)	7 Nos.
13.	Number of Minor Bridges	14 Nos.
14.	Number of Box/Slab Culverts	32 Nos.
15.	Number of Pipe Culverts	72 Nos.

Operation and Maintenance

For details of the O&M obligations of DNMTL under the DNMTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

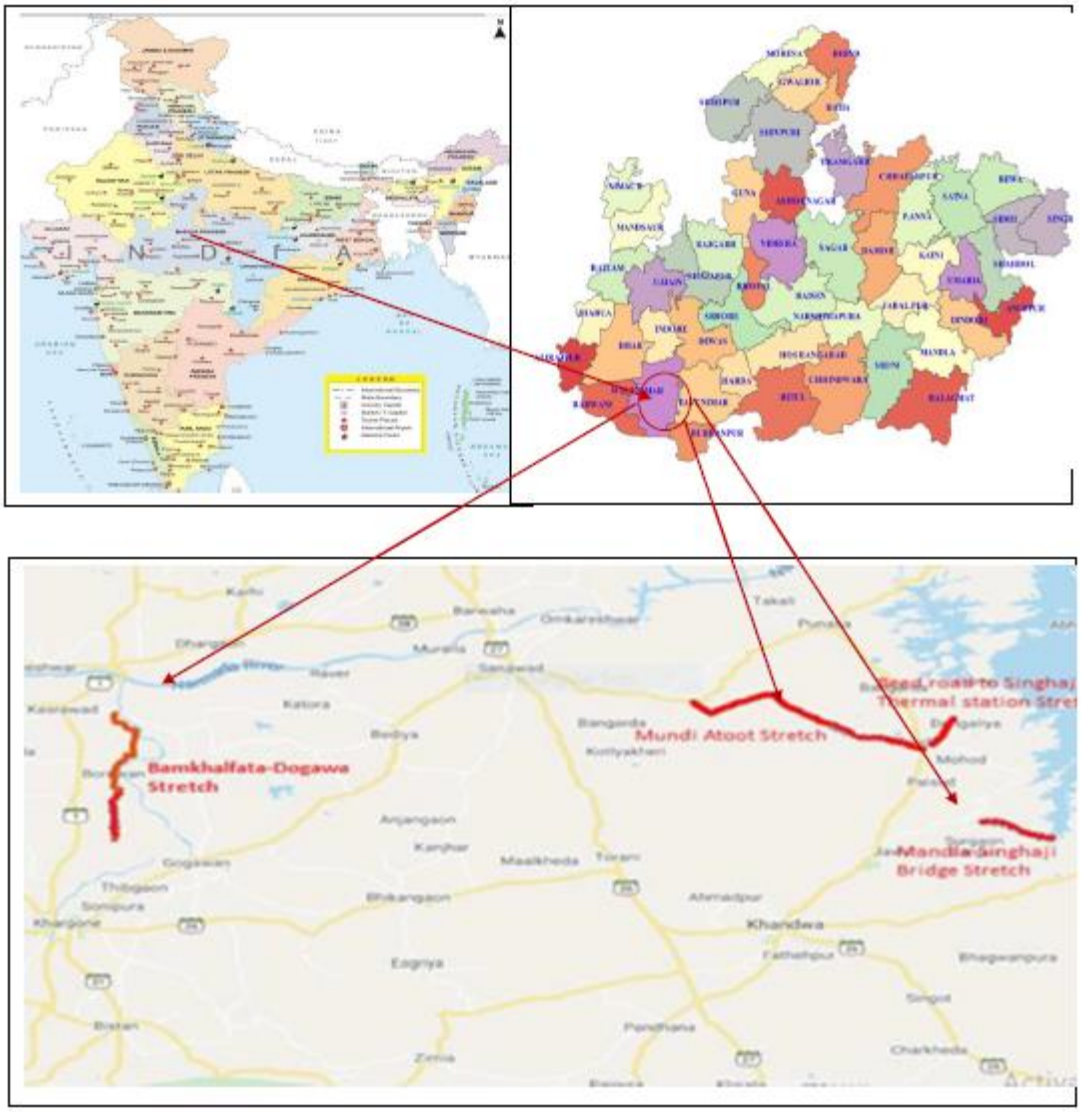
The cost of the DNMTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,838.89 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 397.78 million and debt outstanding to lenders was ₹ 745.02 million.

DBL Bankhalafata-Dogawa Tollways Limited Project

Concession agreement

On January 28, 2013, the Madhya Pradesh Road Development Corporation Limited and DBDTL entered into a concession agreement (the "**DBDTL Concession Agreement**"). DBDTL was engaged, on a design, build, finance, operate and transfer (annuity) basis, to augment the existing three major district roads under package-I comprising (i) Bankhalafata-Dogawa-via-Borawa-Savardevala (23.67 kilometer); (ii) Punasa-Mundi-Singhaji (thermal power plant) and Singhaji bridge approach road (13.30 kilometer); and (iii) Beed-Mundi-Devala-Khutala-Attoot-NVDA (28.43 kilometer) (total length of 65.40 kilometer) by intermediate-laning / two-laning, in accordance with the terms and conditions of the DBDTL Concession Agreement. The DBDTL Project was commissioned in, and commenced operations from, March 2014. The DBDTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DBDTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBDTL Concession Agreement, DBDTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 99 million. DBDTL pays per year, as concession fee, ₹ 1. For further details on the DBDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DBDTL Project and the corridor it covers:



Salient Features

Salient features of the DBDTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Project	65.40 Kms.
2.	Total Length of 2 Lane(Flexible)	60.71 Kms
3.	Total Length of 2 Lane (Rigid)	4.69 Kms.
4.	Toll Plaza	Nil
5.	Bus Bays / Bus Shelters	48 Nos.
6.	Truck Lay Bays	Nil
7.	Major Junction	7 Nos.
8.	Minor Junctions	25 Nos.
9.	ROB	Nil
10.	Major Bridges	3 Nos.
11.	Minor Bridges	13 Nos.
12.	Pipe Culverts	96 Nos.
13.	Slab/Box Culverts	12 Nos.

Operation and Maintenance

For details of the O&M obligations of DBDTL under the DBDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

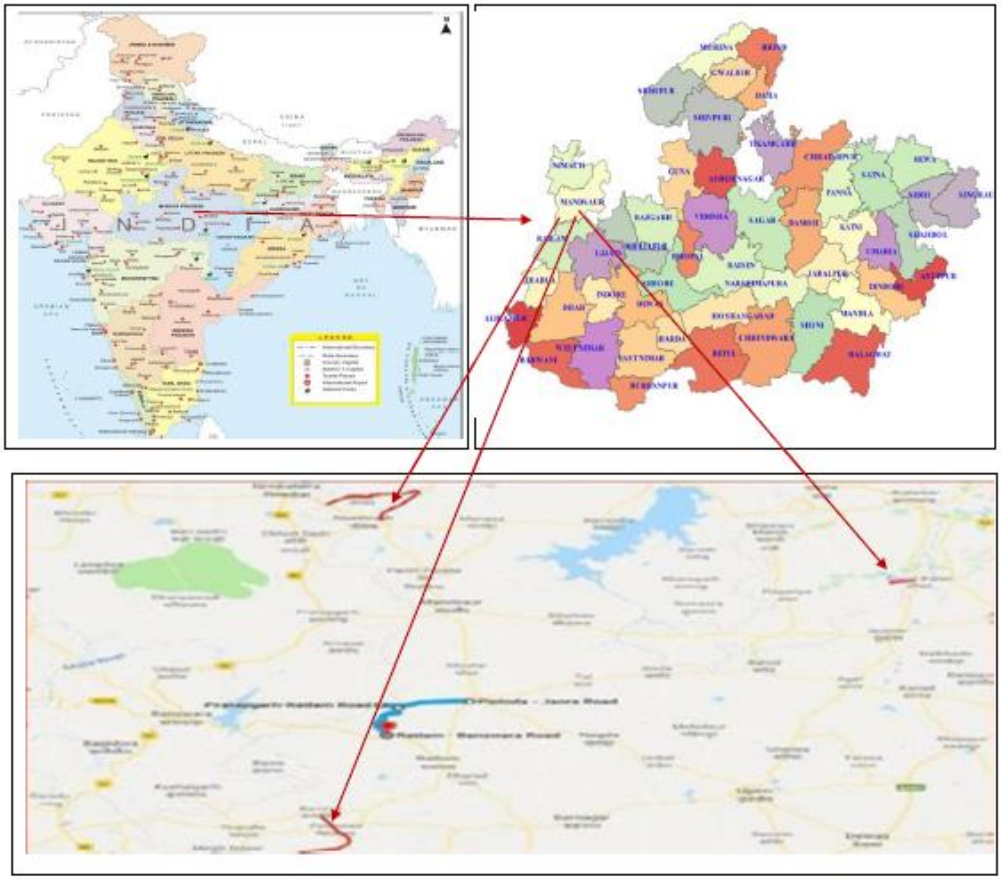
The cost of the DBDTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,022.97 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 180.10 million and debt outstanding to lenders was ₹ 542.11 million.

DBL Jaora-Sailana Tollways Limited Project

Concession agreement

On December 24, 2012, the Madhya Pradesh Road Development Corporation Limited and DJSTL entered into a concession agreement (the "**DJSTL Concession Agreement**"). DJSTL was engaged, on a design, build, finance, operate and transfer (annuity) basis, to augment the existing four major district roads under package-IV comprising (i) Jaora-Piplodha-Jalandharkheda and Piploda-Sailana (42.27 kilometer); (ii) Raipururiya-Petlabad-Bamniya (18.18 kilometer); (iii) Jawad-Khoh (21.07 kilometer); and (iv) Soyat-Pidawa (6.25 kilometer) (total length of 87.77 kilometer) by intermediate-laning / two-laning, in accordance with the terms and conditions of the DJSTL Concession Agreement. The DJSTL Project was commissioned in, and commenced operations from, May 2014. The DJSTL concession was granted for 15 years. As consideration, upon achieving commercial operation date for the project highway and DJSTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DJSTL Concession Agreement, DJSTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 120.6 million. DJSTL pays per year, as concession fee, ₹ 1. For further details on the DJSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DJSTL Project and the corridor it covers:



Salient Features

Salient features of the DJSTL Project include:

Sr. No.	Salient Features	As per Site
Jaora-Piplodha-Jalandharkheda and Piploda-Sailana - SH-31		
1.	Total Project Length	42.24 km.
2.	Rigid Pavement	2.62 Km
3.	Bypass/ Realignment	0.00 Km / 0.995 Km
4.	Toll Plaza	-
5.	Bus Bays / Bus Shelters	36
6.	Truck Lay Bays	-
7.	Major Junction	2
8.	Minor Junctions	14
9.	ROB	-
10.	Major Bridges	-
11.	Minor Bridges	04
12.	Pipe Culverts Slab/Box Culverts Total Culverts	35 17 52
Raipururiya-Petlabad-Bamniya		
1.	Total Project Length	18.40 km
2.	Rigid Pavement	
3.	Bypass/ Realignment	0.00 Km/0.770 Km
4.	Toll Plaza	
5.	Bus Bays / Bus Shelters	18
6.	Truck Lay Bays	--
7.	Major Junction	1
8.	Minor Junctions	10
9.	ROB	--

Sr. No.	Salient Features	As per Site
10.	Major Bridges	--
11.	Minor Bridges	3
12.	Pipe Culverts Slab/Box Culverts Total Culverts	33 09 42
Neemuch – Jawad – Khoh – Nayagaon		
1.	Total Project Length	21.03 kms
2.	Rigid Pavement	-
3.	Bypass/ Realignment	-
4.	Toll Plaza	-
5.	Bus Bays / Bus Shelters	10
6.	Truck Lay Bays	-
7.	Major Junction	2
8.	Minor Junctions	11
9.	ROB	-
10.	Major Bridges	-
11.	Minor Bridges	3
12.	Pipe Culverts Slab/Box Culverts Total Culverts	12 7 19
Soyat – Pidawa – SH-27		
1.	Total Project Length	6.30 Kms
2.	Rigid Pavement	-
3.	Bypass/ Realignment	-
4.	Toll Plaza	-
5.	Bus Bays / Bus Shelters	1
6.	Truck Lay Bays	-
7.	Major Junction	-
8.	Minor Junctions	1
9.	ROB	-
10.	Major Bridges	-
11.	Minor Bridges	-
12.	Pipe Culverts Slab/Box Culverts Total Culverts	9 - 9

Operation and Maintenance

For details of the O&M obligations of DJSTL under the DJSTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DJSTL Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 1,144.09 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 222.60 million and debt outstanding to lenders was ₹ 697.90 million.

DBL Mundargi Harapanahalli Tollways Limited Project

Concession agreement

On December 16, 2015, the Karnataka Road Development Corporation Limited and DMHTL entered into a concession agreement (the "**DMHTL Concession Agreement**"). DMHTL was engaged, on a design, build, finance, operate, maintain and transfer (annuity) basis, to augment the existing State Highway from Mundargi-Hadagali-Harapanahalli (approximate length 51.21 kilometer), in accordance with the terms and conditions of the DMHTL Concession Agreement. The DMHTL Project was commissioned in and commenced operations from February 2018. The DMHTL concession was granted for 10 years. As consideration, upon achieving commercial operation date for the project highway and DMHTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DMHTL Concession Agreement, DMHTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 177.3 million. DMHTL pays per year, as concession fee, ₹ 1. For further details on the DMHTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DMHTL Project and the corridor it covers:

Salient features of the DMHTL Project include:

Sr. No.	Salient Features	As per Site
1.	1. Length of 2-Lane with paved and earthen shoulder 2. Length of 2-Lane with paved shoulder 3. Length of 4-Lane road	1)42.90 Km 2) 5.12 Km 3) 3.18 Km Total- 51.20 Km
2.	Toll Plaza	SH:45-Km.7+900 SH:47-Km.24+200
3.	Bus Bays / Bus Shelters	1 Nos. & 2 Nos. not constructed due to LA issue
4.	Truck Lay Bays	0 No.
5.	Major Junction	10 Nos.
6.	Minor Junctions	20 Nos.
7.	RUB/ROB	Nil
8.	Level Crossing	Nil
9.	Bypass	Nil
10.	Length of the Bypass	-
11.	Major Bridges	1 Nos.
12.	Minor Bridges	11 Nos.
13.	Causeway	0 Nos.
14.	Box/Slab Culverts	19 Nos.
15.	Pipe Culverts	65 Nos.

Operation and Maintenance

For details of the O&M obligations of DMHTL under the DMHTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DMHTL Project net of grant / construction support received from KRDCL during the construction period (wherever applicable) is ₹ 841.47 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 284.47 million and debt outstanding to lenders was ₹ 433.11 million.

DBL Hassan Periyapatna Tollways Limited Project

Concession agreement

On December 16, 2015, the Karnataka Road Development Corporation Limited and DHPTL entered into a concession agreement (the "**DHPTL Concession Agreement**"). DHPTL was engaged, on a design, build, finance, operate, maintain and transfer (annuity) basis, to augment the existing State Highway from Hassan-Ramanathapura-Periyapatna (approximate length of 73.69 kilometer), in accordance with the terms and conditions of the DHPTL Concession Agreement. The DHPTL Project was commissioned in and commenced operations from February 2018. The DHPTL concession was granted for 10 years. As consideration, upon achieving commercial operation date for the project highway and DHPTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHPTL Concession Agreement, DHPTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 262.80 million. DHPTL pays per year, as concession fee, ₹ 1. For further details on the DHPTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DHPTL Project and the corridor it covers:

Salient Features

Salient features of the DHPTL Project include:

Sr. No.	Salient features	As per Site
1.	Total Length of 2 Lane (Flexible)	71.08 Km
2.	Total Length of 4 Lane (Flexible)	2.61 Km
3.	Toll Plaza	3 Nos.
4.	Bus Bays	24 Nos
5.	Bus Shelters	21 Nos
6.	Truck Lay Bays	Nil
7.	Major Junction	5 Nos.
8.	Minor Junctions	57 Nos.
9.	Total Major Bridges	1 Nos.
10.	Total Minor Bridges	13 Nos.
11.	Total Pipe Culverts	139 Nos.
12.	Total Box/ Slab Culverts	53 Nos.

Operation and Maintenance

For details of the O&M obligations of DHPTL under the DHPTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

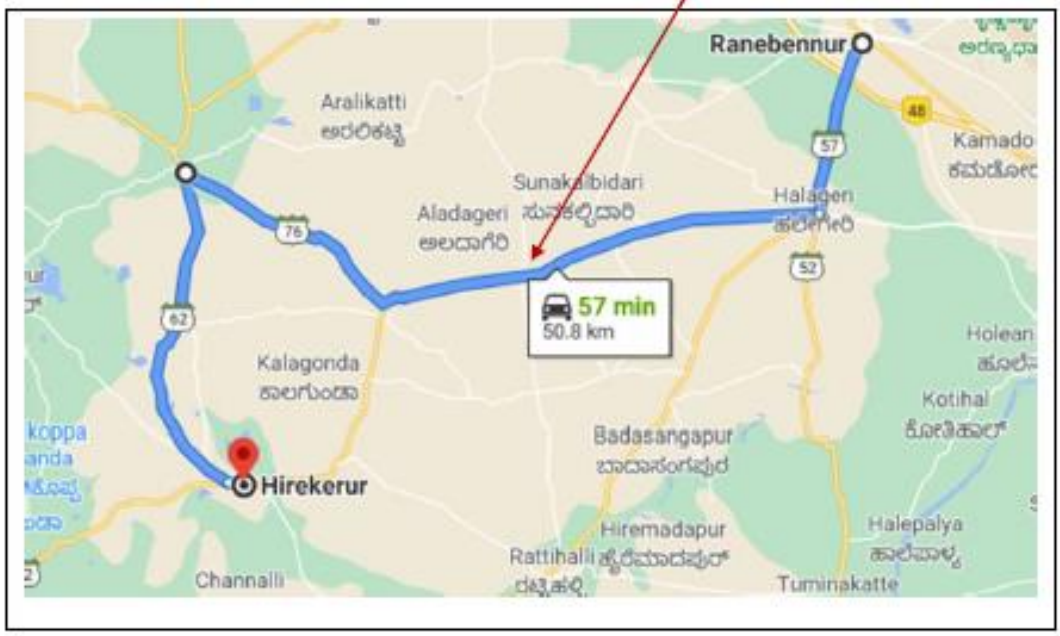
The cost of the DHPTL Project net of grant / construction support received from KRDCL during the construction period (wherever applicable) is ₹ 1431.18 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 245.28 million and debt outstanding to lenders was ₹ 916.68 million.

DBL Hirekerur Ranibennur Tollways Limited Project

Concession agreement

On December 16, 2015, the Karnataka Road Development Corporation Limited and DHRTL entered into a concession agreement (the "**DHRTL Concession Agreement**"). DHRTL was engaged, on a design, build, finance, operate, maintain and transfer (annuity) basis, to augment the existing State Highway from Hirekerur-Ranibennur (approximate length 55.69 kilometers), in accordance with the terms and conditions of the DHRTL Concession Agreement. The DHRTL Project was commissioned in and commenced operations from February 2018. The DHRTL concession was granted for 10 years. As consideration, upon achieving commercial operation date for the project highway and DHRTL accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHRTL Concession Agreement, DHRTL shall receive, for each annuity payment period, on each annuity payment date, the sum of ₹ 196.2 million. DHRTL pays per year, as concession fee, ₹ 1. For further details on the DHRTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the DHRTL Project and the corridor it covers:



Salient Features

Salient features of the DHRTL Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of 2-Lane with paved & earthen shoulder	47.30 Kms.
2.	Length of 2-Lane with paved shoulder	9.1 Kms
3.	Length of 4-Lane road	0.0 Kms
4.	Toll Plaza	1. Km. 19+050 (SH:76 Km.153+900) 2. Km. 43+660) (SH:62 Km.32+300)
5.	Bus Bays / Bus Shelters	8 Nos both Bus shelters and Bus bays completed. 6Nos only bus bays completed. 8 Nos descoped.
6.	Truck Lay Bays	Nil
7.	Major Junction	9 Nos.
8.	Minor Junctions	22 Nos.
9.	RUB/ROB	Nil
10.	Level Crossing	Nil
11.	Bypass	1.992 Km
12.	Realignment	Km.14+246 to Km 14+366(0.120Kms)
		Km.15+000 to Km 15+120(0.120Kms)
13.	Major Bridges	0 Nos.
14.	Minor Bridges	11
15.	Causeway	0 Nos.
16.	Box/Slab Culverts	18 Nos.
17.	Pipe Culverts	76 Nos.

Operation and Maintenance

For details of the O&M obligations of DHRTL under the DHRTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the DHRTL Project net of grant / construction support received from KRDCL during the construction period (wherever applicable) is ₹ 975.34 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 370.53 million and debt outstanding to lenders was ₹ 518.45 million.

Jalpa Devi Tollways Limited Project

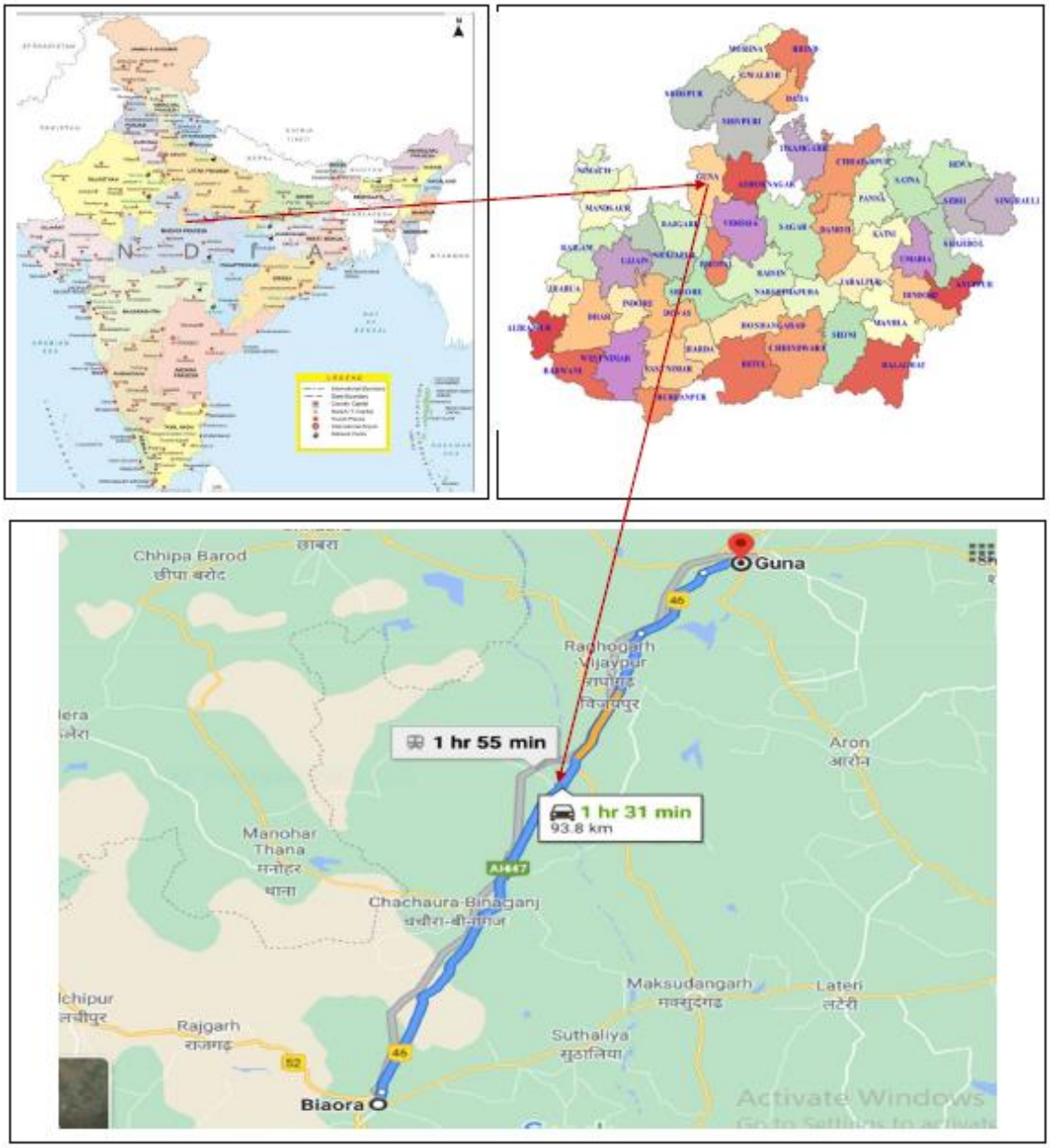
Concession agreement

On September 21, 2015, the National Highways Authority of India and JDTL entered into a concession agreement (the "**JDTL Concession Agreement**"). JDTL was engaged, on a design, build, finance, operate and transfer (toll) basis, to augment the existing road National Highway number 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of National Highway number 3 by four-laning, in accordance with the terms and conditions of the JDTL Concession Agreement. The JDTL Project was provisionally commissioned in and commenced collection of tolls from June 2018. The JDTL concession was granted for 26 years. JDTL shall receive cash support by way of an outright grant of ₹ 270 million. Further, JDTL shall have the sole and exclusive right to demand, collect and appropriate fee from the users of the project highway, in accordance with the JDTL Concession Agreement. JDTL pays per year, as concession fee, ₹ 1. For further details on the JDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Corridor description

The corridor forms a part of the existing National Highway number 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of National Highway number 3. The NH-3 connects the city of Agra with Mumbai, the financial capital of India. This 1,161 Km long road spans across the states of Uttar Pradesh, Madhya Pradesh and Maharashtra. It acts as a major connection between economic centres falling on and around the corridor such as New Delhi, Agra, Gwalior, Bhopal, Indore, Nashik, Mumbai and Pune. Further, the project road has presence of two large scale industries in the vicinity which influences the traffic on the corridor, being National Fertilizer Limited (largest in the state) and GAIL (India) Limited.

The map below illustrates the location of the JDTL Project and the corridor it covers:



Salient Features

Salient features of the JDTL Project include:

Sr. No.	Salient Features	As per Site
1.	Length of 4-Lane road	93.50 km
2.	Service Road	2*9.800 Km
3.	No and Length of Bypass	2 Nos., 7.95 Km
4.	Toll Plaza	2 Nos.
5.	Bus Bays / Bus Shelters	22 Nos.
6.	Truck Lay Bays	2 Nos.
7.	Rest Area	Nil
8.	Major Junction	7 Nos.
9.	Minor Junctions	34 Nos.
10.	Major Bridges	4 Nos.
11.	Minor Bridges	34 Nos.
12.	Box/Slab Culverts	18 Nos.
13.	Pipe Culverts	77 Nos.
14.	Flyovers	2 Nos.
15.	Foot Over Bridge	2 Nos.
16.	Public Under Pass/ Covered Under Pass / Vehicle Under Pass	12 Nos

Operation and Maintenance

For details of the O&M obligations of JDTL under the JDTL Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

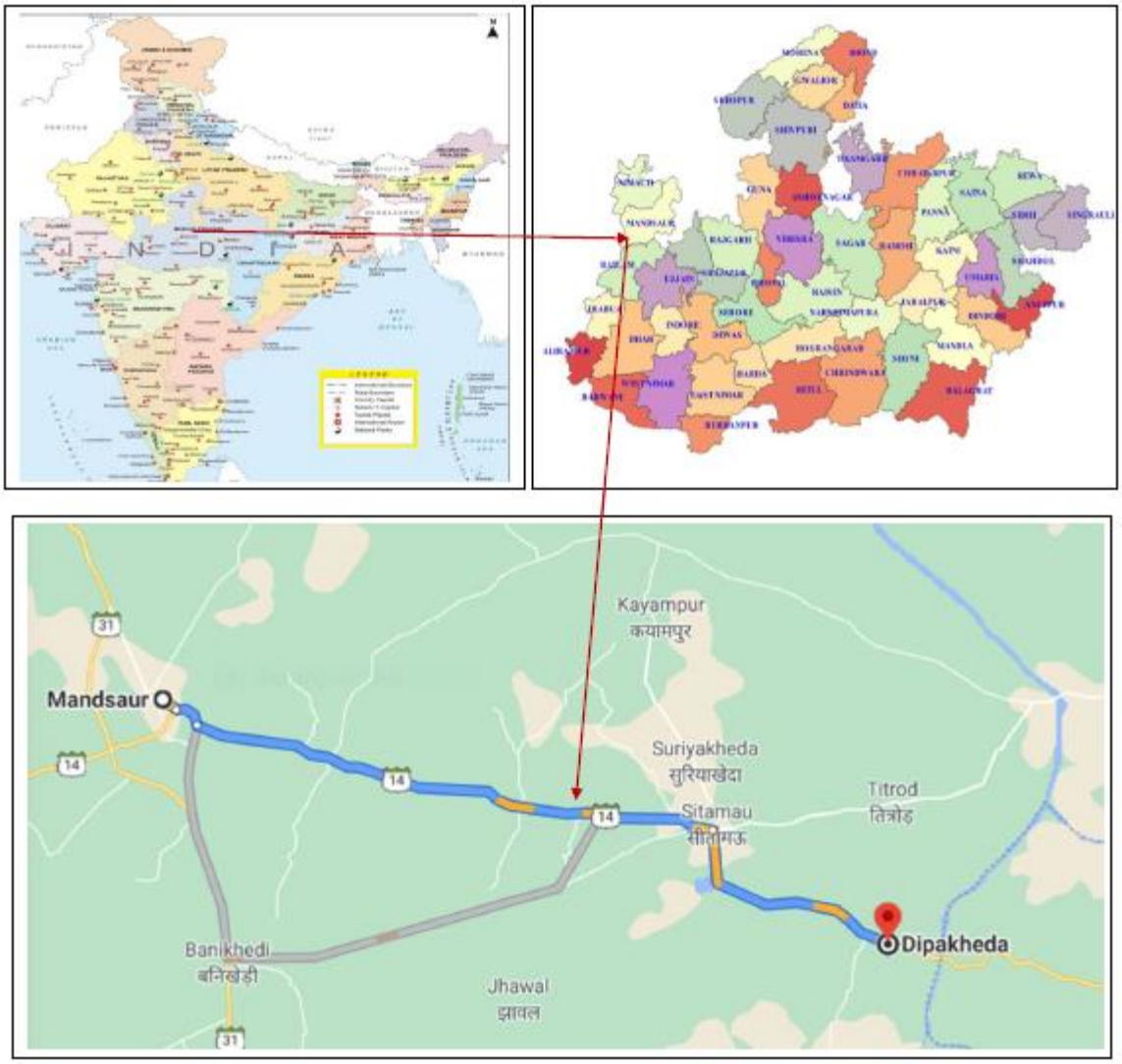
The cost of the JDTL Project net off grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 7,782.11 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 2,200 million and debt outstanding to lenders was ₹ 6,460.20 million.

Suryavanshi Infrastructure Private Limited Project

Concession agreement

On July 10, 2007, the Madhya Pradesh Road Development Corporation Limited and Suryavanshi Infra entered into a concession agreement (the "**Suryavanshi Infra Concession Agreement**"). Suryavanshi Infra was engaged, on a build, operate and transfer basis, to reconstruct, strengthen, widen and rehabilitate Mandsaur-Sitamau section from existing kilometer stone 18 and ending at the existing kilometer stone 62 at Chambal River (Rajasthan border) (total 44 kilometer) on State Highway number 14 section, and its operation and maintenance, in accordance with the terms and conditions of the Suryavanshi Infra Concession Agreement. The Suryavanshi Infra Project was commissioned in and commenced collection of tolls from February 2009. The Suryavanshi Infra concession was granted for 25 years. Suryavanshi Infra shall receive cash support by way of an outright grant of ₹ 99 million from MPRDC. Suryavanshi Infra shall be entitled to levy, collect and appropriate fee from users of the project highway, in accordance with the Suryavanshi Infra Concession Agreement. Suryavanshi Infra pays per year, as concession fee, ₹ 1. For further details on the Suryavanshi Infra Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

The map below illustrates the location of the Suryavanshi Infra Project and the corridor it covers:



Salient Features

Salient features of the Suryavanshi Infra Project include:

Sr. No.	Salient Features	As per Site
1.	Total Length of Intermediate (Flexible)	43 Km
2.	Total Length of 5.5 to 7m wide (Flexible)	1 Km
3.	Toll Plaza	1 No.
4.	Bus Shelters	Nil
5.	Truck Lay Bays (Both sides)	Nil
6.	Major/Minor Junction	13 Nos.
7.	ROB	Nil
8.	Major Bridges	1 No.
9.	Minor Bridges	4 Nos.
10.	Pipe Culverts	27 Nos.
11.	Slab Culverts	15 Nos.

Operation and Maintenance

For details of the O&M obligations of Suryavanshi Infra under the Suryavanshi Infra Concession Agreement, please see the section entitled "*Summary of Key Agreements*" on page 216.

Project cost and financing

The cost of the Suryavanshi Infra Project net of grant / construction support received from MPRDC during the construction period (wherever applicable) is ₹ 348.62 million. This cost does not include non-EPC expenditure. As of December 31, 2020, equity invested (including subordinated debt) was ₹ 132.57 million and debt outstanding to lenders was nil.

Operation and Maintenance

At present, the operation and maintenance activities in relation to each Project is carried out by the O&M Contractor (as a sub-contractor of the Holdcos). Pursuant to the present arrangements, the O&M Contractor is responsible for:

(i). operation and maintenance of the Projects in accordance with the specifications and standards set out in the relevant concession agreements;
(ii). operation and maintenance of the Project highways in accordance with the provisions of the O&M Agreements and the relevant concession agreements;
(iii). performance and fulfilment of all other obligations of the O&M Contractor in accordance with the provisions of the O&M Agreements and matters incidental thereto or necessary for the performance of any or all of the obligations of the O&M Contractor under the O&M Agreements and the concession agreements in relation to operation and maintenance; and
(iv). performing all activities, for ensuring timely release of the annuity to the Project SPVs in accordance with the provisions of the concession agreements, including coordination with the relevant Concessioning Authorities, conducting site visits, undertaking requisite tests at the relevant Project sites, liaisoning with relevant officials and submission of test reports.

The present operation and maintenance arrangements are proposed to be replaced, and the operation and maintenance activities in relation to each Project shall be carried out by the O&M Contractor pursuant to the terms of the O&M Agreements. Under the terms of the O&M Agreements, the O&M Contractor shall be responsible for the obligations listed above.

Environment, health and safety

The Project SPVs are required to meet certain health, safety and environmental specifications and standards in the operation and maintenance of the Projects, and are subject to a number of laws and regulations relating to health, safety and environmental protection. The Project SPVs are also required to adhere to various labour and workplace related laws and regulations in India. For more details on the applicable labour and workplace related laws, please see the section entitled "*Regulations and Policies*" on page 417.

Competition

The Trust faces competition from other road operators, financial investors, private equity funds and from other InvITs, in acquiring lucrative concessions for existing and future projects. While service quality, technological capacity and performance, health and safety records and personnel, as well as reputation and experience, are important considerations in client decisions, price is a major factor in most tender awards.

Insurance

The Project SPVs maintain project-specific insurance coverage with leading insurers in India. Some of the major risks covered in their all-risk policies for their assets are against risk of fire and natural calamities, such as earthquakes. Some of the project-specific insurance policies also generally cover the Project SPVs against material damage, and debris removal. Further, most of the Project SPVs also maintain insurance policies relating to any employees' compensation liability.

Employees

We have appointed KMPs in certain Project SPVs. Further, employees of the Investment Manager will be engaged in managing the Trust. For further details, please see section entitled "*Parties to the Trust*" on page 94.

Properties

Under the terms of the Concession Agreements, title to the roads and related infrastructure such as toll plazas and monitoring posts remains with the relevant Concessioning Authority for the duration of the relevant concession period. During the concession period, the Project SPVs are licensed to use the roads and the related infrastructure which constitute the concession assets and in case of toll-based projects, the Project SPVs are entitled to an income from the collection of tolls. Upon the expiration of the relevant concession period, each Project SPV is required to transfer possession of its concession assets to the relevant Concessioning Authority.

Seasonality

In relation to our toll projects, we experience an increase at the beginning and end of holiday seasons, but decrease during the monsoon season and on the day of a holiday.

Month-wise revenue of the Project SPVs since December 31, 2020

Project SPV	January 2021 (₹ in million)
DBL Lucknow Sultanpur Highways Limited	125.73
DBL Kalmath Zarap Highways Limited	66.08
DBL-Yavatmal Wardha Highways Private Limited	76.63
DBL Tuljapur Ausa Highways Limited	60.26
DBL-Wardha Butibori Highways Private Limited	167.12
DBL Mahagaon Yavatmal Highways Private Limited	81.62
DBL Ashoknagar Vidisha Tollways Limited	6.34
DBL Betul Sarni Tollways Limited	25.25
DBL Hata Dargawon Tollways Limited	11.20
DBL Silwani Sultanganj Tollways Limited	12.57
DBL Sitamau Suwasara Tollways Limited	6.93
DBL Mundi Sanawad Tollways Limited	11.67
DBL Uchera Nagod Tollways Limited	13.12
DBL Sardarpur Badnawar Tollways Limited	4.61
DBL Patan Rehli Tollways Limited	30.15
DBL Tikamgarh Nowgaon Tollways Limited	13.37
DBL Nadiad Modasa Tollways Limited	16.20
DBL Bankhlafata Dogawa Tollways Limited	11.23
DBL Jaora Sailana Tollways Limited	14.27
DBL Mundargi Harapanahalli Tollways Limited	27.91
DBL Hassan Periyapatna Tollways Limited	39.04
DBL Hirekerur Ranibennur Tollways Limited	30.37
Jalpa Devi Tollways Limited	111.57
Suryavanshi Infrastructure Private Limited	4.81

SUMMARY OF KEY AGREEMENTS

A. Summary of the SASHAs and SHA

Summary of the DBL Ashoknagar-Vidisha Tollways Limited SASHA

SRPL, DBL and DBL Ashoknagar-Vidisha Tollways Limited ("**DAVTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Ashoknagar-Vidisha SASHA**"). The key terms of the DBL Ashoknagar-Vidisha SASHA are as follows:

Sale and Purchase: Subject to the DBL Ashoknagar-Vidisha SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DAVTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Ashoknagar-Vidisha SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Ashoknagar-Vidisha SASHA. All amounts invested by the SRPL in the DAVTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing major district road of Ashoknagar-Ishagarh from bypass junction of Ashoknagar to Bangla Chauraha in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer on toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Ashoknagar-Vidisha SASHA, DBL has acknowledged that SRPL has entered into the DBL Ashoknagar-Vidisha SASHA based on the purchase warranties, as defined in the DBL Ashoknagar-Vidisha SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Ashoknagar-Vidisha SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and Damages, as defined in the DBL Ashoknagar-Vidisha SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the Second Closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DAVTL of any of their respective covenants and obligations under the DBL Ashoknagar-Vidisha SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DAVTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Ashoknagar-Vidisha SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DAVTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Ashoknagar-Vidisha SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Ashoknagar-Vidisha SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DAVTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DAVTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 62,079.30 million ("**Identified Liabilities**");

(b). In the event the DAVTL suffers a shortfall in the cash flows, then the Parties to DBL Ashoknagar-Vidisha SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DAVTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DAVTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DAVTL without being first offered to SRPL, *pro rata* to its shareholding in DAVTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DAVTL without being first offered to DBL, *pro rata* to its shareholding in DAVTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DAVTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DAVTL or any legal or beneficial interest therein, except in compliance with the DBL Ashoknagar-Vidisha SASHA, the Concession Agreement and the financing documents, as defined in the DBL Ashoknagar-Vidisha SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DAVTL other than in the manner set out in the DBL Ashoknagar-Vidisha SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Ashoknagar-Vidisha SASHA, shall be null and void. DAVTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Ashoknagar-Vidisha SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other Shareholders of DAVTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Ashoknagar-Vidisha SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DAVTL shall jointly procure such Drag-Along transfer by all the shareholders of DAVTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DAVTL shall not grant rights, to any other holder of DAVTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DAVTL, whether in the capacity of a Shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Ashoknagar-Vidisha SASHA agree that in the event that DBL possesses any rights in DAVTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Ashoknagar-Vidisha SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DAVTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DAVTL and/ or SRPL the cost of funds that may be dedicated by the DAVTL/ SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DAVTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DAVTL.

However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DAVTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DAVTL as on the Execution date.

Summary of the DBL Bankhalafata-Dogawa Tollways Limited SASHA

SRPL, DBL and DBL Bankhalafata-Dogawa Tollways Limited ("**DBDTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Bankhalafata-Dogawa SASHA**"). The key terms of the DBL Bankhalafata-Dogawa SASHA are as follows:

Sale and Purchase: Subject to the DBL Bankhalafata-Dogawa SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DBDTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Bankhalafata-Dogawa SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Bankhalafata-Dogawa SASHA. All amounts invested by the SRPL in the DBDTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing three roads comprising of (i) Bankhalafata-Dogawa-via-Borawa-Savardevala; (ii) Punasa-Mundi-Singhaji (Thermal Power Plant) & Singhaji bridge approach road; (iii) Beed- Mundi-Devala-Khutala-Attool-NVDA in the State of Madhya Pradesh by two- laning on design, build, finance, operation and transfer annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Bankhalafata-Dogawa SASHA, DBL has acknowledged that SRPL has entered into the DBL Bankhalafata-Dogawa SASHA based on the purchase warranties, as defined in the DBL Bankhalafata-Dogawa SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Bankhalafata-Dogawa SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Bankhalafata-Dogawa SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DBDTL of any of their respective covenants and obligations under the DBL Bankhalafata-Dogawa SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DBDTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Bankhalafata-Dogawa SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DBDTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Bankhalafata-Dogawa SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Bankhalafata-Dogawa SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DBDTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DBDTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 88,082.40 million ("**Identified Liabilities**");

(b). In the event the DBDTL suffers a shortfall in the cash flows, then the Parties to DBL Bankhalafata-Dogawa SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall;

(c). If DBDTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DBDTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DBDTL without being first offered to SRPL, *pro rata* to its shareholding in DBDTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DBDTL without being first offered to DBL, *pro rata* to its shareholding in DBDTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DBDTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DBDTL or any legal or beneficial interest therein, except in compliance with the DBL Bankhalafata-Dogawa SASHA, the Concession Agreement and the financing documents, as defined in the DBL Bankhalafata-Dogawa SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DBDTL other than in the manner set out in the DBL Bankhalafata-Dogawa SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Bankhalafata-Dogawa SASHA, shall be null and void. DBDTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Bankhalafata-Dogawa SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DBDTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Bankhalafata-Dogawa SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DBDTL shall jointly procure such Drag-Along transfer by all the shareholders of DBDTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DBDTL shall not grant rights, to any other holder of DBDTL's securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DBDTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Bankhalafata-Dogawa SASHA agree that in the event that DBL possesses any rights in DBDTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Bankhalafata-Dogawa SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DBDTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DBDTL and/ or SRPL the cost of funds that may be dedicated by the DBDTL/ SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DBDTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DBDTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DBDTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DBDTL as on the Execution date.

Summary of the DBL Betul Sarni Tollways Limited SASHA

SRPL, DBL and DBL Betul Sarni Tollways Limited ("**DBSTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Betul Sarni SASHA**"). The key terms of the DBL Betul Sarni SASHA are as follows:

Sale and Purchase: Subject to the DBL Betul Sarni SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DBSTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Betul Sarni SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Betul Sarni SASHA. All amounts invested by the SRPL in the DBSTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing roads comprising of km 0/00 from Kamani Gate at Betul to 124.10 km at Parasia bus stand on State Highway-43 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Betul Sarni SASHA, DBL has acknowledged that SRPL has entered into the DBL Betul Sarni SASHA based on the purchase warranties, as defined in the DBL Betul Sarni SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Betul Sarni SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Betul Sarni SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DBSTL of any of their respective covenants and obligations under the DBL Betul Sarni SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DBSTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Betul Sarni SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DBSTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Betul Sarni SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Betul Sarni SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DBSTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DBSTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 2,63,382 million ("**Identified Liabilities**");

(b). In the event the DBSTL suffers a shortfall in the cash flows, then the Parties to DBL Betul Sarni SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall;

(c). If DBSTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DBSTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DBSTL without being first offered to SRPL, *pro rata* to its shareholding in DBSTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DBSTL without being first offered to DBL, *pro rata* to its shareholding in DBSTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DBSTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DBSTL or any legal or beneficial interest therein, except in compliance with the DBL Betul Sarni SASHA, the Concession Agreement and the financing documents, as defined in the DBL Betul Sarni SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DBSTL other than in the manner set out in the DBL Betul Sarni SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Betul Sarni SASHA, shall be null and void. DBSTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Betul Sarni SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DBSTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Betul Sarni SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DBSTL shall jointly procure such Drag-Along transfer by all the shareholders of DBSTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DBSTL shall not grant rights, to any other holder of DBSTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DBSTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Betul Sarni SASHA agree that in the event that DBL possesses any rights in DBSTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Betul Sarni SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DBSTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DBSTL and/ or SRPL the cost of funds that may be dedicated by the DBSTL/ SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DBSTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DBSTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DBSTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DBSTL as on the Execution date.

Summary of the DBL Hata-Dargawan Tollways Limited SASHA

SRPL, DBL and DBL Hata-Dargawan Tollways Limited ("**DHDTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Hata-Dargawan SASHA**"). The key terms of the DBL Hata-Dargawan SASHA are as follows:

Sale and Purchase: Subject to the DBL Hata-Dargawan SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DHDTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Hata-Dargawan SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Hata-Dargawan SASHA. All amounts invested by the SRPL in the DHDTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing State Highway-48 from 0.00 km (Damoh Naka in Hatta Town) to km 64.40 (at Dargawan Tiraha) on Hata-Fatchpur- Rajpuria- Solapuri- Bajna- Dargawan in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer annuity basis. ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Hata-Dargawan SASHA, DBL has acknowledged that SRPL has entered into the DBL Hata-Dargawan SASHA based on the purchase warranties, as defined in the DBL Hata-Dargawan SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Hata-Dargawan SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Hata-Dargawan SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DHDTL of any of their respective covenants and obligations under the DBL Hata-Dargawan SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DHDTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Hata-Dargawan SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DHDTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Hata-Dargawan SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Hata-Dargawan SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DHDTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DHDTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to ₹ 91,664.10 million ("**Identified Liabilities**");

(b). In the event the DHDTL suffers a shortfall in the cash flows, then the Parties to DBL Hata-Dargawan SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall;

(c). If DHDTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DHDTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DHDTL without being first offered to SRPL, *pro rata* to its shareholding in DHDTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DHDTL without being first offered to DBL, *pro rata* to its shareholding in DHDTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DHDTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DHDTL or any legal or beneficial interest therein, except in compliance with the DBL Hata-Dargawan SASHA, the Concession Agreement and the financing documents, as defined in the DBL Hata-Dargawan SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DHDTL other than in the manner set out in the DBL Hata-Dargawan SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Hata-Dargawan SASHA, shall be null and void. DHDTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Hata-Dargawan SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DHDTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Hata-Dargawan SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DHDTL shall jointly procure such Drag-Along transfer by all the shareholders of DHDTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DHDTL shall not grant rights, to any other holder of DHDTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DHDTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Hata-Dargawan SASHA agree that in the event that DBL possesses any rights in DHDTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Hata-Dargawan SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DHDTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DHDTL and/ or SRPL the cost of funds that may be dedicated by the DHDTL/ SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DHDTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DHDTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DHDTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DHDTL as on the Execution date.

Summary of the DBL Kalmath Zarap Highways Limited SASHA

SIPL, DBL and DBL Kalmath Zarap Highways Limited ("**DKZHL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Kalmath Zarap SASHA**"). The key terms of the DBL Kalmath Zarap SASHA are as follows:

Issue of Securities: Subject to the DBL Kalmath Zarap SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Kalmath Zarap SASHA. All amounts invested by the SIPL in the DKZHL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing roads NH-17 (New NH 66) including section km 406.030 to km 450.170 in the State of Maharashtra on hybrid annuity mode. ("**Project**").

Infusion of Further Capital: DKZHL agrees that in the event there is a requirement for additional capital by DKZHL, DKZHL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DKZHL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DKZHL then the other party **("Subscribing Party")** shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DKZHL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DKZHL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DKZHL shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DKZHL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DKZHL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DKZHL for subscribing all the securities in DKZHL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to repay the loan amount. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DKZHL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DKZHL.

Indemnification:

(a). The parties to the DBL Kalmath Zarap SASHA acknowledge that SIPL has entered into the DBL Kalmath Zarap SASHA based on subscription warranties set out in the DBL Kalmath Zarap SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Kalmath Zarap SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Kalmath Zarap SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five

years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DKZHL of any of their respective covenants and obligations under the DBL Kalmath Zarap SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DKZHL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MoRTH, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the Second closing date, as defined in the DBL Kalmath Zarap SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DKZHL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DKZHL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DKZHL. No part of the annuity payment shall be utilised by DBL for settlement of liabilities of DKZHL;

(b). In the event the DKZHL suffers a shortfall in the cash flows, then the Parties to DBL Kalmath Zarap SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall;

Issuance of Further Shares: From the first closing date as provided in the DBL Kalmath Zarap SASHA, DKZHL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DKZHL without being first offered to SIPL, *pro rata* to its shareholding in DKZHL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DKZHL without being first offered to DBL, *pro rata* to its shareholding in DKZHL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SIPL is a shareholder in DKZHL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has further agreed that it shall not transfer any securities of DKZHL or any legal or beneficial interest therein, except in compliance with the DBL Kalmath Zarap SASHA, the Concession Agreement and the financing documents, as defined in the DBL Kalmath Zarap SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DKZHL other than in the manner set out in the DBL Kalmath Zarap SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Kalmath Zarap SASHA, shall be null and void. DKZHL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Kalmath Zarap SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DKZHL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Kalmath Zarap SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DKZHL shall jointly procure such Drag-Along transfer by all the shareholders of DKZHL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Kalmath Zarap SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Kalmath Zarap SASHA, SIPL shall have the first right of refusal over such proposed investment or divestment.

DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DKZHL shall not grant rights, to any other holder of DKZHL's securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DKZHL, whether in the capacity of a shareholder or through its representatives on the board of DKZHL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Kalmath Zarap SASHA agree that in the event that DBL possesses any rights in DKZHL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Kalmath Zarap SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DKZHL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DKZHL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DKZHL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DKZHL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DKZHL.

Summary of the DBL Lucknow Sultanpur Highways Limited SASHA

SIPL, DBL and DBL Lucknow Sultanpur Highways Limited ("**DLSHL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Lucknow Sultanpur SASHA**"). The key terms of the DBL Lucknow Sultanpur SASHA are as follows:

Issue of Securities: Subject to the DBL Lucknow Sultanpur SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Lucknow Sultanpur SASHA. All amounts invested by the SIPL in the DLSHL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing roads comprising of NH-56 (New NH 731) from km 11.500 to km 134.700 in the State of Uttar Pradesh under NHDP Phase-IV on hybrid annuity mode ("**Project**").

Infusion of Further Capital: DLSHL agrees that in the event there is a requirement for additional capital by DLSHL, DLSHL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DLSHL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DLSHL then the other party (**"Subscribing Party"**) shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DLSHL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DLSHL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DLSHL shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DLSHL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole

responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DLSHL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DLSHL for subscribing all the securities in DLSHL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to refund the loan granted. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DLSHL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DLSHL.

Indemnification:

(a). The parties to the DBL Lucknow Sultanpur SASHA acknowledge that SIPL has entered into the DBL Lucknow Sultanpur SASHA based on subscription warranties set out in the DBL Lucknow Sultanpur SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Lucknow Sultanpur SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Lucknow Sultanpur SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DLSHL of any of their respective covenants and obligations under the DBL Lucknow Sultanpur SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DLSHL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MoRTH, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the Second closing date, as defined in the DBL Lucknow Sultanpur SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DLSHL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DLSHL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DLSHL. No part of the annuity payment shall be utilised by DBL for settlement of liabilities of DLSHL;

(b). In the event the DLSHL suffers a shortfall in the cash flows, then the Parties to DBL Lucknow Sultanpur SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall.

Issuance of Further Shares: From the first closing date as provided in the DBL Lucknow Sultanpur SASHA, DLSHL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DLSHL without being first offered to SIPL, *pro rata* to its shareholding in DLSHL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DLSHL without being first offered to DBL, *pro rata* to its shareholding in DLSHL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SIPL is a shareholder in DLSHL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has further agreed that it shall not transfer any securities of DLSHL or any legal or beneficial interest therein, except in compliance with the DBL Lucknow Sultanpur SASHA, the Concession Agreement and the financing documents, as defined in the DBL Lucknow Sultanpur SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DLSHL other than in the manner set out in the DBL Lucknow Sultanpur SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Lucknow Sultanpur SASHA, shall be null and void. DLSHL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Lucknow Sultanpur SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DLSHL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Lucknow Sultanpur SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DLSHL shall jointly procure such Drag-Along transfer by all the shareholders of DLSHL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Lucknow Sultanpur SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Lucknow Sultanpur SASHA, SIPL shall have the first right of refusal over such proposed investment or divestment. DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DLSHL shall not grant rights, to any other holder of DLSHL securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DLSHL, whether in the capacity of a shareholder or through its representatives on the board of DLSHL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Lucknow Sultanpur SASHA agree that in the event that DBL possesses any rights in DLSHL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Lucknow Sultanpur SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DLSHL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DLSHL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DLSHL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DLSHL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DLSHL.

Summary of the DBL Mahagaon Yavatmal Highways Private Limited SASHA

SIPL, DBL and DBL Mahagaon Yavatmal Highways Private Limited ("**DMYHPL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Mahagaon Yavatmal SASHA**"). The key terms of the DBL Mahagaon Yavatmal SASHA are as follows:

Issue of Securities: Subject to the DBL Mahagaon Yavatmal SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Mahagaon Yavatmal SASHA. All amounts invested by the SIPL in the DMYHPL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing roads comprising of NH-361 including the section from km 320.580 to km 400.575 on Mahagaon to Yavatmal section of National Highway- 361 on hybrid annuity mode ("**Project**").

Infusion of Further Capital: DMYHPL agrees that in the event there is a requirement for additional capital by DMYHPL, DMYHPL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DMYHPL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DMYHPL then the other party ("**Subscribing Party**") shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DMYHPL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DMYHPL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DMYHPL shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DMYHPL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DMYHPL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DMYHPL for subscribing all the securities in DMYHPL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to repay the loan granted. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DMYHPL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DMYHPL.

Indemnification:

(a). The parties to the DBL Mahagaon Yavatmal SASHA acknowledge that SIPL has entered into the DBL Mahagaon Yavatmal SASHA based on subscription warranties set out in the DBL Mahagaon Yavatmal SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Mahagaon Yavatmal SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Mahagaon Yavatmal SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DMYHPL of any of their respective covenants and obligations under the DBL Mahagaon Yavatmal SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DMYHPL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or

any claim/ penalties/ damages that was or is raised by NHAI, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the Second closing date, as defined in the DBL Mahagaon Yavatmal SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DMYHPL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DMYHPL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DMYHPL. No part of the annuity payment shall be utilised by DBL for settlement of liabilities of DMYHPL;

(b). In the event the DMYHPL suffers a shortfall in the cash flows, then the Parties to DBL Mahagaon Yavatmal SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall

Issuance of Further Shares: From the first closing date as provided in the DBL Mahagaon Yavatmal SASHA, DMYHPL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DMYHPL without being first offered to SIPL, *pro rata* to its shareholding in DMYHPL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DMYHPL without being first offered to DBL, *pro rata* to its shareholding in DMYHPL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SIPL is a shareholder in DMYHPL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has further agreed that it shall not transfer any securities of DMYHPL or any legal or beneficial interest therein, except in compliance with the DBL Mahagaon Yavatmal SASHA, the Concession Agreement and the financing documents, as defined in the DBL Mahagaon Yavatmal SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DMYHPL other than in the manner set out in the DBL Mahagaon Yavatmal SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Mahagaon Yavatmal SASHA, shall be null and void. DMYHPL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Mahagaon Yavatmal SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DMYHPL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Mahagaon Yavatmal SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DMYHPL shall jointly procure such Drag-Along transfer by all the shareholders of DMYHPL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Mahagaon Yavatmal SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Mahagaon Yavatmal SASHA, SIPL shall have the first right of refusal over such proposed investment or divestment. DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DMYHPL shall not grant rights, to any other holder of DMYHPL securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DMYHPL, whether in the capacity of a shareholder or through its representatives on the board of DMYHPL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Mahagaon Yavatmal SASHA agree that in the event that DBL possesses any rights in DMYHPL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Mahagaon Yavatmal SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DMYHPL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DMYHPL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DMYHPL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DMYHPL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DMYHPL.

Summary of the DBL Nadiad Modasa Tollways Limited SASHA

SRPL, DBL and DBL Nadiad Modasa Tollways Limited ("**DNMTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Nadiad Modasa SASHA**"). The key terms of the DBL Nadiad Modasa SASHA are as follows:

Sale and Purchase: Subject to the DBL Nadiad Modasa SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DNMTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Nadiad Modasa SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties. All amounts invested by the SRPL in the DNMTL shall be utilized solely for the purposes of the construction, operation and maintenance for redevelopment of section Nadiad – Madhudha – Muthlal – Kapadwanj - Bayad - Modasa from km 0.60 to km 109.00 on State highway number 59 in the State of Gujarat by two-laning on design, build, finance, operation and transfer annuity basis ("**Project**").

Loan extended to DBL: Upon request of loan from DBL, the SRPL shall grant loan, subject to DBL pledging its remaining shareholding which constitutes 26% of the issued and paid-up share capital of the DNMTL. In case, DBL fails to repay the loan, SRPL shall invoke pledge over the pledged securities and initiate transfer process. The SRPL Investor shall have the absolute discretion whether to transfer the pledged securities in its own name and shall not be required to refund/repay to DBL any part of consideration and the loan amount payable by DBL to SRPL shall stand satisfied.

Indemnification:

(a). Notwithstanding anything contained in the DBL Nadiad Modasa SASHA, DBL has acknowledged that SRPL has entered into the DBL Nadiad Modasa SASHA based on the purchase warranties, as defined in the DBL Nadiad Modasa SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Nadiad Modasa SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Nadiad Modasa SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i)

and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DNMTL of any of their respective covenants and obligations under the DBL Nadiad Modasa SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SIPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DNMTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by State Government of Gujarat, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Nadiad Modasa SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DNMTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Nadiad Modasa SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Nadiad Modasa SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DNMTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DNMTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 1,65,955.90 million ("**Identified Liabilities**");

(b). In the event the DNMTL suffers a shortfall in the cash flows, then the Parties to DBL Nadiad Modasa SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall.

Issuance of Further Shares: From the first closing date, DNMTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DNMTL without being first offered to SRPL, *pro rata* to its shareholding in DNMTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DNMTL without being first offered to DBL, *pro rata* to its shareholding in DNMTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DNMTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DNMTL or any legal or beneficial interest therein, except in compliance with the DBL Nadiad Modasa SASHA, the Concession Agreement and the financing documents, as defined in the DBL Nadiad Modasa SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DNMTL other than in the manner set out in the DBL Nadiad Modasa SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Nadiad Modasa SASHA, shall be null and void. DNMTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Nadiad Modasa SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DNMTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Nadiad Modasa SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DNMTL shall jointly procure such Drag-Along transfer by all the shareholders of DNMTL (other than SRPL and their assignees), including any employee

shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DNMTL shall not grant rights, to any other holder of DNMTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DNMTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Nadiad Modasa SASHA agree that in the event that DBL possesses any rights in DNMTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Nadiad Modasa SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DNMTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DNMTL and/ or SRPL the cost of funds that may be dedicated by the DNMTL / the SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DNMTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DNMTL. However, if any point of time, 'capacity augmentation' exercise by the State Government of Gujarat then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DNMTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DNMTL as on the execution date.

Summary of the DBL Silwani Sultanganj Tollways Limited SASHA

SRPL, DBL and DBL Silwani Sultanganj Tollways Limited ("**DSSTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Silwani Sultanganj SASHA**"). The key terms of the DBL Silwani Sultanganj SASHA are as follows:

Sale and Purchase: Subject to the DBL Silwani Sultanganj SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DSSTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Silwani Sultanganj SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties. All amounts invested by the SRPL in the DSSTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing road to 0.00 km to 75.996 on the Silwani- Sultanganj- Jaisinghnagar- Sagar road section of the State Highway number 15 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Silwani Sultanganj SASHA, DBL has acknowledged that SRPL has entered into the DBL Silwani Sultanganj SASHA based on the purchase warranties, as defined in the DBL Silwani Sultanganj SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Silwani Sultanganj SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Silwani Sultanganj SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DSSTL of any of their respective covenants and obligations under the DBL Silwani Sultanganj SASHA; failure by DBL to obtain NOC from the

Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SIPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DSSTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Silwani Sultanganj SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DSSTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Silwani Sultanganj SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Silwani Sultanganj SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DSSTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DSSTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 98,567.70 million ("**Identified Liabilities**");

(b). In the event the DSSTL suffers a shortfall in the cash flows, then the Parties to DBL Silwani Sultanganj SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DSSTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DSSTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DSSTL without being first offered to SRPL, *pro rata* to its shareholding in DSSTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DSSTL without being first offered to DBL, *pro rata* to its shareholding in DSSTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DSSTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DSSTL or any legal or beneficial interest therein, except in compliance with the DBL Silwani Sultanganj SASHA, the Concession Agreement and the financing documents, as defined in the DBL Silwani Sultanganj SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DSSTL other than in the manner set out in the DBL Silwani Sultanganj SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Silwani Sultanganj SASHA, shall be null and void. DSSTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Silwani Sultanganj SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DSSTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Silwani Sultanganj SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DSSTL shall jointly procure such Drag-Along transfer by all the shareholders of DSSTL (other than SRPL and their assignees), including any employee

shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DSSTL shall not grant rights, to any other holder of DSSTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DSSTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Silwani Sultanganj SASHA agree that in the event that DBL possesses any rights in DSSTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Silwani Sultanganj SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DSSTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DSSTL and/ or SRPL the cost of funds that may be dedicated by the DSSTL / the SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DSSTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DSSTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DSSTL

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DSSTL as on the execution date.

Summary of the Suryavanshi Infrastructure Private Limited SASHA

SRPL, DBL and Suryavanshi Infrastructure Private Limited ("**Suryavanshi Infrastructure**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**Suryavanshi Infrastructure SASHA**"). The key terms of the Suryavanshi Infrastructure SASHA are as follows:

Sale and Purchase: Subject to the Suryavanshi Infrastructure SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of Suryavanshi Infrastructure on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the Suryavanshi Infrastructure SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties. All amounts invested by the SRPL in the Suryavanshi Infrastructure shall be utilized solely for the purposes of the construction, operation and maintenance of Mandsaur- Sitamau section from existing km. stone 18 and ends at the existing Km. stone 62 at Chambal river (Rajasthan Border) on State Highway-14 section in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the Suryavanshi Infrastructure SASHA, DBL has acknowledged that SRPL has entered into the Suryavanshi Infrastructure SASHA based on the purchase warranties, as defined in the Suryavanshi Infrastructure SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the Suryavanshi Infrastructure SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the Suryavanshi Infrastructure SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or Suryavanshi Infrastructure of any of

their respective covenants and obligations under the Suryavanshi Infrastructure SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SIPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the Suryavanshi Infrastructure due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the Suryavanshi Infrastructure SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from Suryavanshi Infrastructure in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the Suryavanshi Infrastructure SASHA on the ground of disclosures being made to SRPL, in the manner provided under the Suryavanshi Infrastructure SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the Suryavanshi Infrastructure shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of Suryavanshi Infrastructure. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 32,500.65 million ("**Identified Liabilities**");

(b). In the event the Suryavanshi Infrastructure suffers a shortfall in the cash flows, then the Parties to DBL Suryavanshi Infrastructure SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

Issuance of Further Shares: From the first closing date, Suryavanshi Infrastructure shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by Suryavanshi Infrastructure without being first offered to SRPL, *pro rata* to its shareholding in Suryavanshi Infrastructure. Similarly, till the time DBL is a shareholder, no new shares shall be issued by Suryavanshi Infrastructure without being first offered to DBL, *pro rata* to its shareholding in Suryavanshi Infrastructure.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in Suryavanshi Infrastructure, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of Suryavanshi Infrastructure or any legal or beneficial interest therein, except in compliance with the Suryavanshi Infrastructure SASHA, the Concession Agreement and the financing documents, as defined in the Suryavanshi Infrastructure SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of Suryavanshi Infrastructure other than in the manner set out in the Suryavanshi Infrastructure SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the Suryavanshi Infrastructure SASHA, shall be null and void. Suryavanshi Infrastructure shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the Suryavanshi Infrastructure SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of Suryavanshi Infrastructure, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the Suryavanshi Infrastructure SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and Suryavanshi Infrastructure shall jointly procure such Drag-Along transfer by all the shareholders of Suryavanshi Infrastructure (other than SRPL and their

assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, Suryavanshi Infrastructure shall not grant rights, to any other holder of Suryavanshi Infrastructure securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in Suryavanshi Infrastructure, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the Suryavanshi Infrastructure SASHA agree that in the event that DBL possesses any rights in Suryavanshi Infrastructure that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the Suryavanshi Infrastructure SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the Suryavanshi Infrastructure on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the Suryavanshi Infrastructure and/ or SRPL the cost of funds that may be dedicated by the Suryavanshi Infrastructure / the SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the Suryavanshi Infrastructure apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the Suryavanshi Infrastructure. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the Suryavanshi Infrastructure.

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the Suryavanshi Infrastructure as on the Execution date.

Summary of the DBL Tikamgarh-Nowgaon Tollways Limited SASHA

SRPL, DBL and DBL Tikamgarh-Nowgaon Tollways Limited ("**DTNTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Tikamgarh-Nowgaon SASHA**"). The key terms of the DBL Tikamgarh-Nowgaon SASHA are as follows:

Sale and Purchase: Subject to the DBL Tikamgarh-Nowgaon SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DTNTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Tikamgarh-Nowgaon SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties. All amounts invested by the SRPL in the DTNTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing major district from Y-Junction in km 10/8 at Tikamgarh- Malchra road (SH-10) to km, 107 of Jhansi- Nowgaon (NH-76) in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Tikamgarh-Nowgaon SASHA, DBL has acknowledged that SRPL has entered into the DBL Tikamgarh-Nowgaon SASHA based on the purchase warranties, as defined in the DBL Tikamgarh-Nowgaon SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Tikamgarh-Nowgaon SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Tikamgarh-Nowgaon SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation

mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DTNTL of any of their respective covenants and obligations under the DBL Tikamgarh-Nowgaon SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DTNTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Tikamgarh-Nowgaon SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DTNTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Tikamgarh-Nowgaon SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Tikamgarh-Nowgaon SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DTNTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DTNTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 1,13,792.50 million ("**Identified Liabilities**");

(b). In the event the DTNTL suffers a shortfall in the cash flows, then the Parties to DBL Tikamgarh-Nowgaon SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DTNTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DTNTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DTNTL without being first offered to SRPL, *pro rata* to its shareholding in DTNTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DTNTL without being first offered to DBL, *pro rata* to its shareholding in DTNTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DTNTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DTNTL or any legal or beneficial interest therein, except in compliance with the DBL Tikamgarh-Nowgaon SASHA, the Concession Agreement and the financing documents, as defined in the DBL Tikamgarh-Nowgaon SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DTNTL other than in the manner set out in the DBL Tikamgarh-Nowgaon SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Tikamgarh-Nowgaon SASHA, shall be null and void. DTNTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Tikamgarh-Nowgaon SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DTNTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Tikamgarh-Nowgaon SASHA, (a). on the same terms at which SRPL is transferring its shares to such

third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DTNTL shall jointly procure such Drag-Along transfer by all the shareholders of DTNTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DTNTL shall not grant rights, to any other holder of DTNTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DTNTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Tikamgarh-Nowgaon SASHA agree that in the event that DBL possesses any rights in DTNTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Tikamgarh-Nowgaon SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DTNTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DTNTL and/ or SRPL the cost of funds that may be dedicated by the DTNTL / the SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DTNTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DTNTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DTNTL.

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DTNTL as on the Execution date.

Summary of the DBL Yavatmal Wardha Highways Private Limited SASHA

SIPL, DBL and DBL Yavatmal Wardha Highways Private Limited ("**DYWHPL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Yavatmal Wardha SASHA**"). The key terms of the DBL Yavatmal Wardha SASHA are as follows:

Issue of Securities: Subject to the DBL Yavatmal Wardha SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Yavatmal Wardha SASHA. All amounts invested by the SIPL in the DYWHPL shall be utilized solely for the purposes of the development, maintenance and management of National Highway No. 361 including the section from km 400.575 to km 465.500 of Yavatmal-Wardha section of NH-361 on hybrid annuity mode in state of Maharashtra subsequent augmentation of the existing road from km 400.575 to km 465.500 of Yavatmal - Wardha section of NH-361 ("**Project**").

Infusion of Further Capital: DYWHPL agrees that in the event there is a requirement for additional capital by DYWHPL, DYWHPL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DYWHPL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DYWHPL then the other party ("**Subscribing Party**") shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DYWHPL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DYWHPL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DYWHPL

shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DYWHPL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DYWHPL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DYWHPL for subscribing all the securities in DYWHPL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to refund the loan granted. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DYWHPL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DYWHPL.

Indemnification:

(a). The parties to the DBL Yavatmal Wardha SASHA acknowledge that SIPL has entered into the DBL Yavatmal Wardha SASHA based on subscription warranties set out in the DBL Yavatmal Wardha SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Yavatmal Wardha SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Yavatmal Wardha SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DYWHPL of any of their respective covenants and obligations under the DBL Yavatmal Wardha SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DYWHPL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by NHAI, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the Second closing date, as defined in the DBL Yavatmal Wardha SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DYWHPL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DYWHPL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DYWHPL. No part of the annuity payment shall be utilised by DBL for settlement of liabilities of DYWHPL;

(b). In the event the DYWHPL suffers a shortfall in the cash flows, then the Parties to DBL Yavatmal Wardha SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall.

Issuance of Further Shares: From the first closing date as provided in the DBL Yavatmal Wardha SASHA, DYWHPL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DYWHPL without being first offered to SIPL, *pro rata* to its shareholding in DYWHPL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DYWHPL without being first offered to DBL, *pro rata* to its shareholding in DYWHPL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SIPL is a shareholder in DYWHPL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has further agreed that it shall not transfer any securities of DYWHPL or any legal or beneficial interest therein, except in compliance with the DBL Yavatmal Wardha SASHA, the Concession Agreement and the financing documents, as defined in the DBL Yavatmal Wardha SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DYWHPL other than in the manner set out in the DBL Yavatmal Wardha SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Yavatmal Wardha SASHA, shall be null and void. DYWHPL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Yavatmal Wardha SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DYWHPL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Yavatmal Wardha SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DYWHPL shall jointly procure such Drag-Along transfer by all the shareholders of DYWHPL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Yavatmal Wardha SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Yavatmal Wardha SASHA, SIPL shall have the first right of refusal over such proposed investment or divestment. DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DYWHPL shall not grant rights, to any other holder of DYWHPL securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DYWHPL, whether in the capacity of a shareholder or through its representatives on the board of DYWHPL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Yavatmal Wardha SASHA agree that in the event that DBL possesses any rights in DYWHPL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Yavatmal Wardha SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DYWHPL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DYWHPL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DYWHPL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DYWHPL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DYWHPL.

Summary of the DBL Jaora-Sailana Tollways Limited SASHA

SRPL, DBL and DBL Jaora-Sailana Tollways Limited ("**DJSTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Jaora-Sailana SASHA**"). The key terms of the DBL Jaora-Sailana SASHA are as follows:

Sale and Purchase: Subject to the DBL Jaora-Sailana SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DJSTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Jaora-Sailana SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Jaora-Sailana SASHA. All amounts invested by the SRPL in the DJSTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of existing four roads: (i) Jaora Piploadha- Jalandharkheda & Piploda-Sailana (42.27 km) (ii) Raipururiya- Petlabad Bamniya (18.18 Km) (iii) Jawad-Kholi (21.07 Km) (iv) Soyat-Pidawa (km. 6.25) in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Jaora-Sailana SASHA, DBL has acknowledged that SRPL has entered into the DBL Jaora-Sailana SASHA based on the purchase warranties, as defined in the DBL Jaora-Sailana SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Jaora-Sailana SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Jaora-Sailana SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the Second Closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DJSTL of any of their respective covenants and obligations under the DBL Jaora-Sailana SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DJSTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Jaora-Sailana SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DJSTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Jaora-Sailana SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Jaora-Sailana SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DJSTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DJSTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 1,06,025.30 million ("**Identified Liabilities**");

(b). In the event the DJSTL suffers a shortfall in the cash flows, then the Parties to DBL Jaora-Sailana SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DJSTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DJSTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DJSTL without being first offered to SRPL, *pro rata* to its shareholding in DJSTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DJSTL without being first offered to DBL, *pro rata* to its shareholding in DJSTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DJSTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DJSTL or any legal or beneficial interest therein, except in compliance with the DBL Jaora-Sailana SASHA, the Concession Agreement and the financing documents, as defined in the DBL Jaora-Sailana SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DJSTL other than in the manner set out in the DBL Jaora-Sailana SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Jaora-Sailana SASHA, shall be null and void. DJSTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Jaora-Sailana SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DJSTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Jaora-Sailana SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DJSTL shall jointly procure such Drag-Along transfer by all the shareholders of DJSTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DJSTL shall not grant rights, to any other holder of DJSTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DJSTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Jaora-Sailana SASHA agree that in the event that DBL possesses any rights in DJSTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Jaora-Sailana SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DJSTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DJSTL and/ or SRPL the cost of funds that may be dedicated by the DJSTL / SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DJSTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DJSTL. However,

if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DJSTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DJSTL as on the Execution date.

Summary of the DBL Patan-Rehli Tollways Limited SASHA

SRPL, DBL and DBL Patan-Rehli Tollways Limited ("**DPRTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Patan-Rehli SASHA**"). The key terms of the DBL Patan-Rehli SASHA are as follows:

Sale and Purchase: Subject to the DBL Patan-Rehli SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DPRTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Patan-Rehli SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Patan-Rehli SASHA. All amounts invested by the SRPL in the DPRTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of existing road comprising from Km. 31/10 of State Highway- 15 (Rehli- Gorjhamar -Patan Chowk and cross the junction of Km. 113/00 of Rehli Gourjhamar including bypass of Rehli which is about 4.4 km to 38.10 km) on the section of State Highway - 15 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Patan-Rehli SASHA, DBL has acknowledged that SRPL has entered into the DBL Patan-Rehli SASHA based on the purchase warranties, as defined in the DBL Patan-Rehli SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Patan-Rehli SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Patan-Rehli SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL any default or breach by DBL or DPRTL of any of their respective covenants and obligations under the DBL Patan-Rehli SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DPRTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Patan-Rehli SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DPRTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Patan-Rehli SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Patan-Rehli SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DPRTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DPRTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 2,49,215.80 million ("**Identified Liabilities**");

(b). In the event the DPRTL suffers a shortfall in the cash flows, then the Parties to DBL Patan-Rehli SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DPRTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DPRTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DPRTL without being first offered to SRPL, *pro rata* to its shareholding in DPRTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DPRTL without being first offered to DBL, *pro rata* to its shareholding in DPRTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DPRTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DPRTL or any legal or beneficial interest therein, except in compliance with the DBL Patan-Rehli SASHA, the Concession Agreement and the financing documents, as defined in the DBL Patan-Rehli SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DPRTL other than in the manner set out in the DBL Patan-Rehli SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Patan-Rehli SASHA, shall be null and void. DPRTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Patan-Rehli SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DPRTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Patan-Rehli SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DPRTL shall jointly procure such Drag-Along transfer by all the shareholders of DPRTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DPRTL shall not grant rights, to any other holder of DPRTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DPRTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Patan-Rehli SASHA agree that in the event that DBL possesses any rights in DPRTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Patan-Rehli SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DPRTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DPRTL and/ or SRPL the cost of funds that may be dedicated by the DPRTL / SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DPRTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DPRTL. However,

if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DPRTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DPRTL as on the Execution date.

Summary of the DBL Mundi Sanavad Tollways Limited SASHA

SRPL, DBL and DBL Mundi Sanavad Tollways Limited ("**DMSTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Mundi Sanavad SASHA**"). The key terms of the DBL Mundi Sanavad SASHA are as follows:

Sale and Purchase: Subject to the DBL Mundi Sanavad SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DMSTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Mundi Sanavad SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Mundi Sanavad SASHA. All amounts invested by the SRPL in the DMSTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of Mundi- Punasa-Sulgaon- Sanawad section of major district road from km 0.00 to km 634.400 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Mundi Sanavad SASHA, DBL has acknowledged that SRPL has entered into the DBL Mundi Sanavad SASHA based on the purchase warranties, as defined in the DBL Mundi Sanavad SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Mundi Sanavad SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Mundi Sanavad SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DMSTL of any of their respective covenants and obligations under the DBL Mundi Sanavad SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DMSTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Mundi Sanavad SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DMSTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Mundi Sanavad SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Mundi Sanavad SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DMSTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DMSTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 78,511.80 million ("**Identified Liabilities**");

(b). In the event the DMSTL suffers a shortfall in the cash flows, then the Parties to DBL Mundi Sanavad SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DMSTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DMSTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DMSTL without being first offered to SRPL, *pro rata* to its shareholding in DMSTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DMSTL without being first offered to DBL, *pro rata* to its shareholding in DMSTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DMSTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DMSTL or any legal or beneficial interest therein, except in compliance with the DBL Mundi Sanavad SASHA, the Concession Agreement and the financing documents, as defined in the DBL Mundi Sanavad SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DMSTL other than in the manner set out in the DBL Mundi Sanavad SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Mundi Sanavad SASHA, shall be null and void. DMSTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Mundi Sanavad SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DMSTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Mundi Sanavad SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DMSTL shall jointly procure such Drag-Along transfer by all the shareholders of DMSTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DMSTL shall not grant rights, to any other holder of DMSTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DMSTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Mundi Sanavad SASHA agree that in the event that DBL possesses any rights in DMSTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Mundi Sanavad SASHA, including but not limited to default in payment.

Role and Responsibility:

(i) Any adverse effect on the DMSTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DMSTL and/ or SRPL the cost of funds that may be dedicated by the DMSTL / SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(ii) In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DMSTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DMSTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DMSTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DMSTL as on the Execution date.

Summary of the DBL Sardarpur Badnawar Tollways Limited SASHA

SRPL, DBL and DBL Sardarpur Badnawar Tollways Limited ("**DSBTL**") entered into a share acquisition cum shareholders agreement dated March 18, 2018 (the "**DBL Sardarpur Badnawar SASHA**"). The key terms of the DBL Sardarpur Badnawar SASHA are as follows:

Sale and Purchase: Subject to the DBL Sardarpur Badnawar SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DSBTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Sardarpur Badnawar SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Sardarpur Badnawar SASHA. All amounts invested by the SRPL in the DSBTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of road from km 0/00 to km 43/300 (approximately 43.00 km) on the Sardarpur - Badnawar Road section of the State Highway Number 34 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Sardarpur Badnawar SASHA, DBL has acknowledged that SRPL has entered into the DBL Sardarpur Badnawar SASHA based on the purchase warranties, as defined in the DBL Sardarpur Badnawar SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Sardarpur Badnawar SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Sardarpur Badnawar SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL any default or breach by DBL or DSBTL of any of their respective covenants and obligations under the DBL Sardarpur Badnawar SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DSBTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Sardarpur Badnawar SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DSBTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Sardarpur Badnawar SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Sardarpur Badnawar SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DSBTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DSBTL. No part of the annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 80,359.10 million ("**Identified Liabilities**");

(b). In the event the DSBTL suffers a shortfall in the cash flows, then the Parties to DBL Sardarpur Badnawar SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DSBTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DSBTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DSBTL without being first offered to SRPL, *pro rata* to its shareholding in DSBTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DSBTL without being first offered to DBL, *pro rata* to its shareholding in DSBTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DSBTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DSBTL or any legal or beneficial interest therein, except in compliance with the DBL Sardarpur Badnawar SASHA, the Concession Agreement and the financing documents, as defined in the DBL Sardarpur Badnawar SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DSBTL other than in the manner set out in the DBL Sardarpur Badnawar SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Sardarpur Badnawar SASHA, shall be null and void. DSBTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Sardarpur Badnawar SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DSBTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Sardarpur Badnawar SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DSBTL shall jointly procure such Drag-Along transfer by all the shareholders of DSBTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DSBTL shall not grant rights, to any other holder of DSBTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DSBTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Sardarpur Badnawar SASHA agree that in the event that DBL possesses any rights in DSBTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Sardarpur Badnawar SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DSBTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DSBTL and/ or SRPL the cost of funds that may be dedicated by the DSBTL / SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project,

the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DSBTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DSBTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DSBTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DSBTL as on the Execution date.

Summary of the DBL Uchera-Nagod Tollways Limited SASHA

SRPL, DBL and DBL Uchera-Nagod Tollways Limited ("**DUNTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Uchera-Nagod SASHA**"). The key terms of the DBL Uchera-Nagod SASHA are as follows:

Sale and Purchase: Subject to the DBL Uchera-Nagod SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DUNTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Uchera-Nagod SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Uchera-Nagod SASHA. All amounts invested by the SRPL in the DUNTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of the existing road comprising from km 32.00 (near Nagod-NH-75) to km 87.00 including 1.70 km Nagod bypass (approx. 55.60 km) on the section of the State Highway Number 56 in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Uchera-Nagod SASHA, DBL has acknowledged that SRPL has entered into the DBL Uchera-Nagod SASHA based on the purchase warranties, as defined in the DBL Uchera-Nagod SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Uchera-Nagod SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Uchera-Nagod SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DUNTL of any of their respective covenants and obligations under the DBL Uchera-Nagod SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DUNTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Uchera-Nagod SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DUNTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Uchera-Nagod SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Uchera-Nagod SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DUNTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DUNTL. No part of the

annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 81,317.60 million ("**Identified Liabilities**");

(b). In the event the DUNTL suffers a shortfall in the cash flows, then the Parties to DBL Uchera-Nagod SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DUNTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DUNTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DUNTL without being first offered to SRPL, *pro rata* to its shareholding in DUNTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DUNTL without being first offered to DBL, *pro rata* to its shareholding in DUNTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DUNTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DUNTL or any legal or beneficial interest therein, except in compliance with the DBL Uchera-Nagod SASHA, the Concession Agreement and the financing documents, as defined in the DBL Uchera-Nagod SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DUNTL other than in the manner set out in the DBL Uchera-Nagod SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Uchera-Nagod SASHA, shall be null and void. DUNTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Uchera-Nagod SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DUNTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Uchera-Nagod SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DUNTL shall jointly procure such Drag-Along transfer by all the shareholders of DUNTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DUNTL shall not grant rights, to any other holder of DUNTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DUNTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Uchera-Nagod SASHA agree that in the event that DBL possesses any rights in DUNTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Uchera-Nagod SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DUNTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DUNTL and/ or SRPL the cost of funds that may be dedicated by the DUNTL / SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project,

the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DUNTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DUNTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DUNTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DUNTL as on the Execution date.

Summary of the DBL Sitamau Suswara Tollways Limited SASHA

SRPL, DBL and DBL Sitamau Suswara Tollways Limited ("**DSSTL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Sitamau Suswara SASHA**"). The key terms of the DBL Sitamau Suswara SASHA are as follows:

Sale and Purchase: Subject to the DBL Sitamau Suswara SASHA, SRPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of DSSTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Sitamau Suswara SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to DBL Sitamau Suswara SASHA. All amounts invested by the SRPL in the DSSTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site comprising of 0/00 to 34/000 on Sitamau- Basai- Suwasara section in the State of Madhya Pradesh by two-laning on design, build, finance, operation and transfer toll plus annuity basis ("**Project**").

Indemnification:

(a). Notwithstanding anything contained in the DBL Sitamau Suswara SASHA, DBL has acknowledged that SRPL has entered into the DBL Sitamau Suswara SASHA based on the purchase warranties, as defined in the DBL Sitamau Suswara SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Sitamau Suswara SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Sitamau Suswara SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DSSTL of any of their respective covenants and obligations under the DBL Sitamau Suswara SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the SRPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DSSTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by MPRDC, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the DBL Sitamau Suswara SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DSSTL in this regard.

(c). Notwithstanding anything contained hereinabove, DBL shall not be absolved of its indemnity obligation as contained under the DBL Sitamau Suswara SASHA on the ground of disclosures being made to SRPL, in the manner provided under the DBL Sitamau Suswara SASHA. However, SRPL shall not have the right to claim indemnity from DBL twice for the same loss or damages suffered by it.

Utilization of Annuity Payment:

(a). Annuity payments received by the DSSTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DSSTL. No part of the

annuity payment shall be utilised by DBL for settlement of identified liabilities amounting to Rs. 45,548.90 million ("**Identified Liabilities**");

(b). In the event the DSSTL suffers a shortfall in the cash flows, then the Parties to DBL Sitamau Suswara SASHA shall, to the extent permitted by applicable law and the financing documents, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

(c). If DSSTL and/ or DBL procures additional annuity payment over and above the annuity payment, then DBL shall be entitled to receive from the SRPL an additional amount plus interest at the rate of 16.5% on such amount from the execution of master term sheet until the date of receipt of the additional annuity payment.

Issuance of Further Shares: From the first closing date, DSSTL shall not, without the prior written consent of SRPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SRPL becoming a shareholder, no new shares shall be issued by DSSTL without being first offered to SRPL, *pro rata* to its shareholding in DSSTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DSSTL without being first offered to DBL, *pro rata* to its shareholding in DSSTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SRPL is a shareholder in DSSTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DSSTL or any legal or beneficial interest therein, except in compliance with the DBL Sitamau Suswara SASHA, the Concession Agreement and the financing documents, as defined in the DBL Sitamau Suswara SASHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DSSTL other than in the manner set out in the DBL Sitamau Suswara SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Sitamau Suswara SASHA, shall be null and void. DSSTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Sitamau Suswara SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DSSTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Sitamau Suswara SASHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DSSTL shall jointly procure such Drag-Along transfer by all the shareholders of DSSTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, DSSTL shall not grant rights, to any other holder of DSSTL securities, superior to those granted to SRPL, without the prior approval of SRPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in DSSTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of SRPL. The parties to the DBL Sitamau Suswara SASHA agree that in the event that DBL possesses any rights in DSSTL that are superior to those granted to SRPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SRPL breaches the terms of the DBL Sitamau Suswara SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the DSSTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DSSTL and/ or SRPL the cost of funds that may be dedicated by the DSSTL/ SRPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants:

(a). SRPL shall not be liable to infuse any additional capital into the DSSTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DSSTL. However, if any point of time, 'capacity augmentation' exercise by the MPRDC then it shall be the sole responsibility of SRPL to infuse the capital/ additional capital in the DSSTL;

(b). DBL shall be solely responsible to settle the Identified Liabilities and provide proof of such settlement to the SRPL. DBL further covenants that apart from the Identified Liabilities, there are no other liabilities in the DSSTL as on the Execution date.

Summary of the Jalpa-Devi Tollways Limited SASHA

STPL, DBL and Jalpa Devi Tollways Limited ("**JDTL**") entered into a share acquisition cum shareholders agreement dated July 18, 2018 (the "**Jalpa Devi SASHA**"). The key terms of the Jalpa Devi SASHA are as follows:

Sale and Purchase: Subject to the Jalpa Devi SASHA, STPL shall purchase, and DBL shall sell and transfer, and cause to be sold and transferred, 100% of the share capital of JDTL on a fully-diluted basis ("**Sale Securities**"), free and clear of all encumbrances and together with all right, title and interests, in accordance with the Jalpa Devi SASHA. Sale consideration may be adjusted on account of agreed adjustments i.e. financial liabilities or adjustments as are identified by mutual agreement in writing between the parties to Jalpa Devi SASHA. All amounts invested by the STPL in the JDTL shall be utilized solely for the purposes of the construction, operation and maintenance of the site at existing road NH- 3 from km 332.100 to km 426.00 (approximately 93.500 km) on the Guna - Biaora section of the National Highway no. 3, in the state of Madhya Pradesh by four - laning on DBFOMT basis ("**Project**").

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, STPL shall transfer an amount equal to amount invested by DBL in the JDTL for subscribing all the securities in JDTL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the STPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, STPL shall have a right to call upon DBL to refund the loan granted. In case, DBL fails to repay the loan, STPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then STPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the JDTL; (iii) Post achievement of commercial operation date, STPL shall hold 100% shares of the JDTL.

Indemnification:

(a). Notwithstanding anything contained in the Jalpa Devi SASHA, DBL has acknowledged that STPL has entered into the Jalpa Devi SASHA based on the purchase warranties, as defined in the Jalpa Devi SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold STPL and/ or its Affiliates, as defined in the Jalpa Devi SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the Jalpa Devi SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the purchase warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or JDTL of any of their respective covenants and obligations under the Jalpa Devi SASHA; failure by DBL to obtain NOC from the Income Tax Authorities issued under Section 281 of the Income Tax Act, 1961 permitting transfer of the Sale Securities by DBL to the STPL; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the JDTL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by NHAI, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the first closing date, as defined in the Jalpa Devi SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from JDTL in this regard.

Collection and utilisation of toll payment: Toll payments received by the JDTL shall be deposited in the Escrow Account as provided for under the Escrow Agreement and the utilisation of the same shall be in accordance with the terms of the Escrow Agreement.

Issuance of Further Shares: From the first closing date, JDTL shall not, without the prior written consent of STPL, issue any further shares/ securities. Without prejudice to the foregoing, upon STPL becoming a shareholder, no new shares shall be issued by JDTL without being first offered to STPL, *pro rata* to its shareholding in JDTL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by JDTL without being first offered to DBL, *pro rata* to its shareholding in JDTL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that STPL is a shareholder in JDTL, it shall not transfer any of its shares to any person other than STPL or its nominee, unless otherwise agreed in writing by STPL. DBL has further agreed that it shall not transfer any securities of JDTL or any legal or beneficial interest therein, except in compliance with the Jalpa Devi SASHA, the Concession Agreement and the financing documents, as defined in the Jalpa Devi SASHA, unless otherwise agreed in writing by STPL.

(ii). Any agreement or arrangements to transfer any of the securities of JDTL other than in the manner set out in the Jalpa Devi SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the Jalpa Devi SASHA, shall be null and void. JDTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the Jalpa Devi SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that STPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of JDTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by STPL, transfer such number of their shares as may be notified by STPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the Jalpa Devi SASHA, (a). on the same terms at which STPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of STPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by STPL, DBL and JDTL shall jointly procure such Drag-Along transfer by all the shareholders of JDTL (other than STPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Superior Right: From the first closing date, JDTL shall not grant rights, to any other holder of JDTL securities, superior to those granted to STPL, without the prior approval of STPL. DBL has represented and warranted that on and from the first closing it shall not possess any rights in JDTL, whether in the capacity of a shareholder or through its representatives on the board or by any other means, which would be superior to the rights of STPL. The parties to the Jalpa Devi SASHA agree that in the event that DBL possesses any rights in JDTL that are superior to those granted to STPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case STPL breaches the terms of the Jalpa Devi SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). Any adverse effect on the JDTL on account of non-maintenance of debt service reserve account ("**DSRA**") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the JDTL and/ or STPL the cost of funds that may be dedicated by the JDTL / STPL for the purpose of maintaining the DSRA or for DSRA Collateral.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL.

However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of the SRPL to deal with such adverse impact.

Other Covenants: STPL shall not be liable to infuse any additional capital into the JDTL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the JDTL. However, if any point of time, 'capacity augmentation' exercise by the NHAI then it shall be the sole responsibility of STPL to infuse the capital/ additional capital in the JDTL;

Summary of the DBL Tuljapur Ausa Highways Limited SASHA

SIPL, DBL and DBL Tuljapur Ausa Highways Limited ("**DTAHL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Tuljapur Ausa SASHA**"). The key terms of the DBL Tuljapur Ausa SASHA are as follows:

Issue of Securities: Subject to the DBL Tuljapur Ausa SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Tuljapur Ausa SASHA. All amounts invested by the SIPL in DTAHL shall be utilized solely for the purposes of the development, maintenance and management of National Highway No. 361 including the section from km 0.000 to km 55.835 of Tuljapur - Ausa section of NH-361 on hybrid annuity mode in State of Maharashtra subsequent augmentation of the existing road from km 0.000 to km 55.835 of Tuljapur - Ausa section of NH-361 ("**Project**").

Infusion of Further Capital: DTAHL agrees that in the event there is a requirement for additional capital by DTAHL, DTAHL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DTAHL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DTAHL then the other party (**"Subscribing Party"**) shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DTAHL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DTAHL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DTAHL shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DTAHL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DTAHL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DTAHL for subscribing all the securities in DTAHL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to refund the loan granted. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DTAHL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DTAHL.

Indemnification:

(a). The parties to the DBL Tuljapur Ausa SASHA acknowledge that SIPL has entered into the DBL Tuljapur Ausa SASHA based on subscription warranties set out in the DBL Tuljapur Ausa SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Tuljapur Ausa SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Tuljapur Ausa SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the

second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DTAHL of any of their respective covenants and obligations under the DBL Tuljapur Ausa SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DTAHL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by NHAI, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the second closing date, as defined in the DBL Tuljapur Ausa SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DTAHL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DTAHL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DTAHL. No part of the annuity payment shall be utilised by DBL for settlement of liabilities of DTAHL;

(b). In the event the DTAHL suffers a shortfall in the cash flows, then the Parties to DBL Tuljapur Ausa SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall

Issuance of Further Shares: From the first closing date as provided in the DBL Tuljapur Ausa SASHA, DTAHL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DTAHL without being first offered to SIPL, *pro rata* to its shareholding in DTAHL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DTAHL without being first offered to DBL, *pro rata* to its shareholding in DTAHL.

Transfer Rights

(a). *Restriction on Transfer*:

(i). DBL has agreed that till such time that SIPL is a shareholder in DTAHL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has further agreed that it shall not transfer any securities of DTAHL or any legal or beneficial interest therein, except in compliance with the DBL Tuljapur Ausa SASHA, the Concession Agreement and the financing documents, as defined in the DBL Tuljapur Ausa SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DTAHL other than in the manner set out in the DBL Tuljapur Ausa SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Tuljapur Ausa SASHA, shall be null and void. DTAHL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Tuljapur Ausa SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DTAHL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Tuljapur Ausa SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DTAHL shall jointly procure such Drag-Along transfer by all the shareholders of DTAHL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Tuljapur Ausa SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the

DBL Tuljapur Ausa SASHA, SIPL shall have the first right of refusal over such proposed investment or divestment. DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DTAHL shall not grant rights, to any other holder of DTAHL securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DTAHL, whether in the capacity of a shareholder or through its representatives on the board of DTAHL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Tuljapur Ausa SASHA agree that in the event that DBL possesses any rights in DTAHL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Tuljapur Ausa SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DTAHL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DTAHL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DTAHL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DTAHL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DTAHL.

Summary of the DBL Wardha Butibori Highways Private Limited SASHA

SIPL, DBL and DBL Wardha Butibori Highways Private Limited ("**DWBHPL**") entered into a share acquisition cum shareholders agreement dated March 26, 2018 (the "**DBL Wardha Butibori SASHA**"). The key terms of the DBL Wardha Butibori SASHA are as follows:

Issue of Securities: Subject to the DBL Wardha Butibori SASHA, SIPL shall subscribe to the second closing securities and DBL shall subscribe to the first closing securities, free and clear of all encumbrances and together with all right, title and interests, in accordance with the DBL Wardha Butibori SASHA. All amounts invested by the SIPL in the DWBHPL shall be utilized solely for the purposes of the construction, maintenance and management of National Highway No. 361 including the section from km 465.500 to km 524.690 of Wardha- Butibori section of NH-361 on Hybrid Annuity mode (HAM) in state of Maharashtra subsequent augmentation of the existing road from km 28.800 to km 85.374 of Wardha- Butibori section of NH-361 ("**Project**").

Infusion of Further Capital: DWBHPL agrees that in the event there is a requirement for additional capital by DWBHPL, DWBHPL shall raise the same through issue of further securities to SIPL and DBL, at the same terms and price, and pro-rata in accordance with the existing ratio of holding of the parties in the capital of DWBHPL at that relevant point of time. SIPL shall be entitles to subscribe to such additional securities through their affiliates also.

In the event either SIPL or DBL decides not to participate in such further issue of securities by DWBHPL then the other party (**"Subscribing Party"**) shall have the right but not the obligation to subscribe to the unsubscribed portion of the securities offered by DWBHPL. If the Subscribing Party expresses its willingness to subscribe the unsubscribed portion of the securities offered to the other party, it shall be the sole discretion of the Subscribing Party to decide the mode and manner of allotment of such additional securities to it by DWBHPL, including but not limited to the nature of securities to be issued, the value at which such securities are to be issued and all related aspects. The other party and DWBHPL shall have the obligation to accept such terms of subscription laid down by the Subscribing Party and undertaking necessary corporate actions to allot the unsubscribed portion of the securities to the Subscribing Party on such terms and conditions.

SIPL and DBL agree that in the event any loss or damage is suffered by the Subscribing Party due to failure of the other party to subscribe to its share of additional securities offered by DWBHPL, including but not limited to any loss or damage caused due to breach of any terms of the Concession Agreement and/or financing documents, it shall be the sole responsibility of the other party to refund the subscribing party all amounts invested by the Subscribing Party into DWBHPL till the relevant date along with an interest of 16.5% on the total amount from the date of occurrence of default giving rise to the loss or damages till the date of receipt of actual payment by the Subscribing Party.

Achievement of Commercial Operations Date: Upon achievement of the commercial operations date, on request of loan from DBL, SIPL shall transfer an amount equal to amount invested by DBL in the DWBHPL for subscribing all the securities in DWBHPL. In order to secure the loan, DBL has agreed to pledge its entire shareholding as well as by giving a call option right to the SIPL.

Post achievement of commercial operations date: (i) Upon the expiry of 25 months from the commercial operations date, SIPL shall have a right to call upon DBL to refund the loan granted. In case, DBL fails to repay the loan, SIPL shall invoke pledge over the pledged securities and initiate transfer process; (ii) In case DBL repays the loan within one day of receiving the intimation to repay the loan, then SIPL shall transfer the amount equals to the loan amount for subscribing to the entire shareholding of DBL in the DWBHPL; (iii) Post achievement of commercial operation date, SIPL shall hold 100% shares of the DWBHPL.

Indemnification:

(a). The parties to the DBL Wardha Butibori SASHA acknowledge that SIPL has entered into the DBL Wardha Butibori SASHA based on subscription warranties set out in the DBL Wardha Butibori SASHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SIPL and/ or its Affiliates, as defined in the DBL Wardha Butibori SASHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Wardha Butibori SASHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the subscription warranties; (i) breach of general representation made by DBL before the expiry of five years from the second closing date and (ii) tax warranties made by DBL before the expiry of eight years from the second closing date (ii) the limitation mentioned in (i) and (ii) does not apply to damages caused due to gross negligence, wilful misconduct and fraud arising out of any act or omission by DBL; any default or breach by DBL or DWBHPL of any of their respective covenants and obligations under the DBL Wardha Butibori SASHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue or loss of annuity payment (payable under the Concession Agreement) suffered by the DWBHPL due to any change in the legal and regulatory regime, including but not limited to the impact of levy of GST or any claim/ penalties/ damages that was or is raised by NHAI, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions prior to the second closing date, as defined in the DBL Wardha Butibori SASHA ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DWBHPL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DWBHPL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DWBHPL. No part of the annuity payment shall be utilised by DBL for settlement of any liabilities of the DWBHPL;

(b). In the event the DWBHPL suffers a shortfall in the cash flows, then the Parties to DBL Wardha Butibori SASHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SIPL has made investment, to cover such shortfall.

Issuance of Further Shares: From the first closing date as provided in the DBL Wardha Butibori SASHA, DWBHPL shall not, without the prior written consent of SIPL, issue any further shares/ securities. Without prejudice to the foregoing, upon SIPL becoming a shareholder, no new shares shall be issued by DWBHPL without being first offered to SIPL, *pro rata* to its shareholding in DWBHPL. Similarly, till the time DBL is a shareholder, no new shares shall be issued by DWBHPL without being first offered to DBL, *pro rata* to its shareholding in DWBHPL.

Transfer Rights

(a). <u>*Restriction on Transfer*</u>:

(i). DBL has agreed that till such time that SIPL is a shareholder in DWBHPL, it shall not transfer any of its shares to any person other than SIPL or its nominee, unless otherwise agreed in writing by SIPL. DBL has

further agreed that it shall not transfer any securities of DWBHPL or any legal or beneficial interest therein, except in compliance with the DBL Wardha Butibori SASHA, the Concession Agreement and the financing documents, as defined in the DBL Wardha Butibori SASHA, unless otherwise agreed in writing by SIPL.

(ii). Any agreement or arrangements to transfer any of the securities of DWBHPL other than in the manner set out in the DBL Wardha Butibori SASHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Wardha Butibori SASHA, shall be null and void. DWBHPL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Wardha Butibori SASHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SIPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DWBHPL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SIPL, transfer such number of their shares as may be notified by SIPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Wardha Butibori SASHA, (a). on the same terms at which SIPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SIPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SIPL, DBL and DWBHPL shall jointly procure such Drag-Along transfer by all the shareholders of DWBHPL (other than SIPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Right of First Refusal of SIPL: DBL agrees and undertakes that in the event DBL is desirous of bringing in investment into any hybrid annuity project of which DBL is the promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Wardha Butibori SASHA or DBL wishes to divest its shareholding in any hybrid annuity project of which DBL is promoter or shareholder, other than the identified hybrid annuity project as provided in the DBL Wardha Butibori SASHA. SIPL shall have the first right of refusal over such proposed investment or divestment. DBL agrees that in the event DBL desire to transfer its entire shareholding in any hybrid annuity project to any third party or DBL invites any third party to subscribe to shares of such hybrid annuity project then DBL shall be required to make the offer of purchase of its shareholding or the offer of investment into the hybrid annuity project (as the case maybe) first to SIPL on such terms and conditions in which offer of divestment or investment has been made to the third party.

Superior Right: From the second closing date, DWBHPL shall not grant rights, to any other holder of DWBHPL securities, superior to those granted to SIPL, without the prior approval of SIPL. DBL has represented and warranted that on and from the second closing it shall not possess any rights in DWBHPL, whether in the capacity of a shareholder or through its representatives on the board of DWBHPL or by any other means, which would be superior to the rights of SIPL. The parties to the DBL Wardha Butibori SASHA agree that in the event that DBL possesses any rights in DWBHPL that are superior to those granted to SIPL (whether in a meeting of the board or shareholders or any committees or otherwise), the same shall stand terminated forthwith and in perpetuity without the need of any further act, deed or thing. However, all such right shall be suspended in case SIPL breaches the terms of the DBL Wardha Butibori SASHA, including but not limited to default in payment.

Role and Responsibility:

(a). DBL agrees and undertakes that it shall be sole responsibility to ensure that the DWBHPL undertakes all possible steps to ensure that the commercial operations date of the Project shall be achieved within the time period mentioned in the Concession Agreement ("Scheduled Commercial Operation Date"). In the event the DWBHPL receives any bonus under the Concession Agreement due to early completion of the Project, then DBL being the promoter of the DWBHPL shall be solely entitled to such bonus amount and SIPL shall be liable to undertake all necessary actions to facilitate the receipt of such amount by DBL.

(b). In the event any circumstance arise due to a change in the legal and regulatory framework including but not limited to the impact of GST and which has an adverse impact on the operation and maintenance of the Project, the impact of the same so long it relates to the operation and maintenance of the Project shall be borne by DBL. However, if there is any adverse financial impact on the Project on account of change in the legal and regulatory framework, it shall be the responsibility of SIPL to deal with such adverse impact.

Other Covenants: SIPL shall not be liable to infuse any additional capital into the DWBHPL apart from the sale consideration and it shall be the sole responsibility of DBL to arrange for any additional funding requirement of the DWBHPL.

Summary of the DBL Mundargi Harapanahalli Tollways Limited SHA

SRPL, DBL and DBL Mundargi Harapanahalli Tollways Limited ("**DMHTL**") entered into an amended and restated shareholders agreement dated March 26, 2018 (the "**DBL Mundargi Harapanahalli SHA**"). The key terms of the DBL Mundargi Harapanahalli SHA are as follows:

Effective Date of the DBL Mundargi Harapanahalli SHA: the DBL Mundargi Harapanahalli SHA, SRPL shall come into force upon SRPL becoming shareholder of DMHTL pursuant to exercise of call option right by SRPL or invocation of the pledge by SRPL over the pledge securities.

Indemnification:

(a). DBL and DMHTL acknowledge that SRPL has entered into the DBL Mundargi Harapanahalli SHA based on the warranties in the DBL Mundargi Harapanahalli SHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Mundargi Harapanahalli SHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Mundargi Harapanahalli SHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the warranties; any default or breach by DBL or DMHTL of any of their respective covenants and obligations under the DBL Mundargi Harapanahalli SHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue of annuity payment (payable under the Concession Agreement) suffered by DMHTL due to any change in legal and regulatory regime, including but not limited to the impact of levy of GST; or any claim/ penalties/ damages that was or is raised by Karnataka Road Development Corporation Limited, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions of DBL and pertaining to the period when DBL is a shareholder of DMHTL ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DMHTL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DMHTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DMHTL.

(b). In the event the DMHTL suffers a shortfall in the cash flows, then the Parties to DBL Mundargi Harapanahalli SHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

Transfer Rights

(a). <u>*Restriction on Transfer*</u>:

(i). DBL has agreed that till such time that DBL is a shareholder in DMHTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DMHTL or any legal or beneficial interest therein, except in compliance with the DBL Mundargi Harapanahalli SHA, the Concession Agreement and the financing documents, as defined in the DBL Mundargi Harapanahalli SHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DMHTL other than in the manner set out in the DBL Mundargi Harapanahalli SHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Mundargi Harapanahalli SHA, shall be null and void. DMHTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Mundargi Harapanahalli SHA, the Concession Agreement and the financing documents.

(b). <u>*Drag-Along Right*</u>:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DMHTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Mundargi Harapanahalli SHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DMHTL shall jointly procure such Drag-Along transfer by all the shareholders of DMHTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Role and Responsibility of DBL: Any adverse effect on the DMHTL on account of non-maintenance of debt service reserve account ("DSRA") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DMHTL and/ or SRPL the cost of funds that may be dedicated by the DMHTL/ SRPL for the purpose of maintaining the DSRA.

Summary of the DBL Hirekerur Ranibennur Tollways Limited SHA

SRPL, DBL and DBL Hirekerur Ranibennur Tollways Limited ("**DHRTL**") entered into an amended and restated shareholders agreement dated March 26, 2018 (the "**DBL Hirekerur Ranibennur SHA**"). The key terms of the DBL Hirekerur Ranibennur SHA are as follows:

Effective Date of the DBL Hirekerur Ranibennur SHA: the DBL Hirekerur Ranibennur SHA, SRPL shall come into force upon SRPL becoming shareholder of DHRTL pursuant to exercise of call option right by SRPL or invocation of the pledge by SRPL over the pledge securities.

Indemnification:

(a). DBL and DHRTL acknowledge that SRPL has entered into the DBL Hirekerur Ranibennur SHA based on the warranties in the DBL Hirekerur Ranibennur SHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Hirekerur Ranibennur SHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Hirekerur Ranibennur SHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the warranties; any default or breach by DBL or DHRTL of any of their respective covenants and obligations under the DBL Hirekerur Ranibennur SHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue of annuity payment (payable under the Concession Agreement) suffered by DHRTL due to any change in legal and regulatory regime, including but not limited to the impact of levy of GST; or any claim/ penalties/ damages that was or is raised by Karnataka Road Development Corporation Limited, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions of DBL and pertaining to the period when DBL is a shareholder of DHRTL ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DHRTL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DHRTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DHRTL.

(b). In the event the DHRTL suffers a shortfall in the cash flows, then the Parties to DBL Hirekerur Ranibennur SHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

Transfer Rights

(a). <u>*Restriction on Transfer*</u>:

(i). DBL agrees that till such time that DBL is a shareholder in DHRTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DHRTL or any legal or beneficial interest therein, except in compliance with the DBL Hirekerur Ranibennur SHA, the Concession Agreement and the financing documents, as defined in the DBL Hirekerur Ranibennur SHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DHRTL other than in the manner set out in the DBL Hirekerur Ranibennur SHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Hirekerur Ranibennur SHA, shall be null and void. DHRTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Hirekerur Ranibennur SHA, the Concession Agreement and the financing documents.

(b). *Drag-Along Right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DHRTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Hirekerur Ranibennur SHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DHRTL shall jointly procure such Drag-Along transfer by all the shareholders of DHRTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons

Role and Responsibility of DBL: Any adverse effect on the DHRTL on account of non-maintenance of debt service reserve account ("DSRA") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DHRTL and/ or SRPL the cost of funds that may be dedicated by the DHRTL/ SRPL for the purpose of maintaining the DSRA.

Summary of the DBL Hassan Periyapatna Tollways Limited SHA

SRPL, DBL and DBL Hassan Periyapatna Tollways Limited ("**DHPTL**") entered into an amended and restated shareholders agreement dated March 26, 2018 (the "**DBL Hassan Periyapatna SHA**"). The key terms of the DBL Hassan Periyapatna SHA are as follows:

Effective date of the DBL Hassan Periyapatna SHA: The DBL Hassan Periyapatna SHA, shall come into force upon SRPL becoming shareholder of DHPTL pursuant to exercise of call option right by SRPL or invocation of the pledge by SRPL over the pledge securities.

Indemnification:

(a). DBL and DHPTL acknowledge that SRPL has entered into the DBL Hassan Periyapatna SHA based on the warranties in the DBL Hassan Periyapatna SHA. DBL ("**Indemnifying Party**") has agreed to indemnify and hold SRPL and/ or its Affiliates, as defined in the DBL Hassan Periyapatna SHA, all their directors, officers, employees and advisors ("**Indemnified Party**") harmless against all losses and damages, as defined in the DBL Hassan Periyapatna SHA, grossed up for taxes, which arise out of, or result from or may be payable by virtue of, among other things, any falsity, incomplete, default, breach or inaccuracy of any of the warranties; any default or breach by DBL or DHPTL of any of their respective covenants and obligations under the DBL Hassan Periyapatna SHA; any delay in receipt of the annuity payments under the Concession Agreement on account of breach of the O&M sub-contractor under the O&M subcontract; any loss of revenue of annuity payment (payable under the Concession Agreement) suffered by DHPTL due to any change in legal and regulatory regime, including but not limited to the impact of levy of GST; or any claim/ penalties/ damages that was or is raised by Karnataka Road Development Corporation Limited, EPC contractor, O&M subcontractor (if appointed) or any third party in relation to the project attributable to actions of DBL and pertaining to the period when DBL is a shareholder of DHPTL ("**Third Party Claim**").

(b). The Indemnifying Party had expressly acknowledged and agreed that it shall be solely responsible to fulfil its indemnity obligation towards the Indemnified Party and shall not be entitled to seek any contribution from DHPTL in this regard.

Utilization of Annuity Payment:

(a). Annuity payments received by the DHPTL shall be in accordance with the Concession Agreement and the financing documents and balance shall be utilized as per the directions of the Board of DHPTL.

(b). In the event the DHPTL suffers a shortfall in the cash flows, then the Parties to DBL Hassan Periyapatna SHA shall, to the extent permitted by applicable law and the financing agreements, endeavour to utilize the excess cash (if any) in the other group companies of DBL in which the SRPL has made investment, to cover such shortfall.

Transfer rights

(a). *Restriction on transfer*:

(i). DBL has agreed that till such time that DBL is a shareholder in DHPTL, it shall not transfer any of its shares to any person other than SRPL or its nominee, unless otherwise agreed in writing by SRPL. DBL has further agreed that it shall not transfer any securities of DHPTL or any legal or beneficial interest

therein, except in compliance with the DBL Hassan Periyapatna SHA, the Concession Agreement and the financing documents, as defined in the DBL Hassan Periyapatna SHA, unless otherwise agreed in writing by SRPL.

(ii). Any agreement or arrangements to transfer any of the securities of DHPTL other than in the manner set out in the DBL Hassan Periyapatna SHA, the Concession Agreement and the financing documents or as may be specifically agreed in writing by the parties to the DBL Hassan Periyapatna SHA, shall be null and void. DHPTL shall not record or recognize any such transfer or such agreement or arrangement on its books or register and shall not recognise or register any equitable or other claim to, or any interest in, such securities which have been transferred in any manner other than as permitted under the DBL Hassan Periyapatna SHA, the Concession Agreement and the financing documents.

(b). *Drag-along right*:

(i). In the event that SRPL is desirous of transferring its shares to a third party, it shall be entitled to call upon DBL and all the other shareholders of DHPTL, including any employee shareholders ("**Dragged Shareholders**") to also participate in such transfer. Each of DBL and all the other shareholders shall, if so required by SRPL, transfer such number of their shares as may be notified by SRPL to the same third party, provided such transfer gives DBL a return equivalent to the consideration as mentioned in the DBL Hassan Periyapatna SHA, (a). on the same terms at which SRPL is transferring its shares to such third party ("**Drag-Along**"); and (b). simultaneously with the transfer of the shares of SRPL to such third party purchaser.

(ii). Upon exercise of the Drag Along right by SRPL, DBL and DHPTL shall jointly procure such Drag-Along transfer by all the shareholders of DHPTL (other than SRPL and their assignees), including any employee shareholder, through appropriate representation, warranties and covenants, in the concerned documents with such other persons.

Role and Responsibility of DBL: Any adverse effect on the DHPTL on account of non-maintenance of debt service reserve account ("DSRA") Collateral or on account of default of DBL to maintain DSRA Collateral shall be the liability of DBL. DBL shall also, in such an event be liable to pay to the DHPTL and/ or SRPL the cost of funds that may be dedicated by the DHPTL/ SRPL for the purpose of maintaining the DSRA.

B. Summary of the Concession Agreements

- ***MPRDC Annuity Projects***

The DBL Bankhalafata-Dogawa Tollways Limited ("DBDTL") Concession Agreement ("DBDTL Concession Agreement")

Annuity: DBDTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBDTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 99 million.

Fee: DBDTL shall not levy, demand or collect from or in respect of any user, vehicle or person, for the use of project facilities, any sum whatsoever in the nature of a toll or fee. MPRDC shall have the right and authority to levy toll or fee on the users and vehicles using the project facilities ("**Fee**") and to demand, collect, retain and appropriate the Fee in accordance with the applicable laws.

Concession fee: In consideration of the grant of concession under the DBDTL Concession Agreement, the concession fee payable by DBDTL to MPRDC shall be ₹ 1.00 per year during the term of the DBDTL Concession Agreement.

Performance security: DBDTL shall, for the performance of its obligations under the DBDTL Concession Agreement, during the Construction Period, as defined in the DBDTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DBDTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 50 million in the form set forth in the DBDTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DBDTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DBDTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DBDTL Concession Agreement. MPRDC shall disburse to DBDTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DBDTL Concession Agreement,

shall be borne by DBDTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DBDTL shall operate and maintain the Project Highway, as defined in the DBDTL Concession Agreement, in accordance with the DBDTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DBDTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DBDTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- allowing authority or authority contractor in collecting and appropriating the Fee;
- disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the state;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- preventing, with the assistance of concerned law enforcement agencies, any unauthorised use of the Project Highway;
- preventing, with the assistance of concerned law enforcement agencies, any encroachments on the Project Highway;
- protection of the environment and provision of equipment and materials therefor;
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and
- complying with safety requirements in accordance with the DBDTL Concession Agreement.

Maintenance manual: DBDTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DBDTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DBDTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time)

Reduction in annuity on account of delayed project completion: In case DBDTL achieves commercial operation date after the scheduled date, as provided in the DBDTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Obligations relating to change in ownership: DBDTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DBDTL Concession Agreement, DBDTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DBDTL; or
- acquisition of any control directly or indirectly of the board of directors of DBDTL by any person either

by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DBDTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DBDTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DBDTL from any liability or obligation under the DBDTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "**DBDTL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DBDTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DBDTL Concession Agreement.

- During concession period: (i) all taxes due and payable by DBDTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- On termination: (i) all taxes due and payable by DBDTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii)incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DBDTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DBDTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DBDTL of any of its obligations under the DBDTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DBDTL to any user or from any negligence of DBDTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DBDTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DBDTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DBDTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DBDTL in respect of the income or other taxes of DBDTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DBDTL or any of its contractors which are payable by DBDTL or any of its contractors.
- DBDTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DBDTL or by DBDTL's contractors in performing the obligations of DBDTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DBDTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DBDTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DBDTL is unable to secure such licence within a reasonable time, DBDTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DBDTL's rights: Upon occurrence of a DBDTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DBDTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DBDTL under the DBDTL Concession Agreement including the DBDTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DBDTL Concession Agreement, shall be entitled to substitute DBDTL under and in accordance with the Substitution Agreement, as defined in the DBDTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DBDTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DBDTL Concession Agreement, prior to the Appointed Date, as defined in the DBDTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
    - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DBDTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists;

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DBDTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DBDTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DBDTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DBDTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DBDTL; and
    - upon occurrence of a Political Event, as defined in the DBDTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DBDTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DBDTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Upon occurrence of a DBDTL Default, MPRDC shall be entitled to terminate the DBDTL Concession Agreement by issuing a termination notice to DBDTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DBDTL of its intention to issue such termination notice and grant 15 days to DBDTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination for DBDTL Default: In the event that any of the defaults by DBDTL which it fails to cure within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 (sixty) days, DBDTL shall be deemed to be in default of the DBDTL Concession Agreement (the "**DBDTL Default**"). The DBDTL defaults include, among other things abandonment; change in Ownership has occurred in breach of the DBDTL Concession Agreement; non-replenishment of Performance Security; failure to fulfil conditions precedent or cure default for which Performance Security was encashed; non-achievement of project milestones; financial default; non-occurrence of COD or non-completion of punch-list items; failure to make payments to MPRDC; breach of maintenance requirements etc.

Termination Payments for DBDTL Default: Upon termination on account of DBDTL Default, MPRDC will pay

an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DBDTL may terminate the DBDTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DBDTL; (ii) the failure to make any payment due to DBDTL; (iii) repudiation of the DBDTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DBDTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DBDTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DBDTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DBDTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DBDTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DBDTL Concession Agreement.

The DBL Jaora-Sailana Tollways Limited ("DJSTL") Concession Agreement ("DJSTL Concession Agreement")

Annuity: DJSTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DJSTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 120.6 million.

Fee: DJSTL shall not levy, demand or collect from or in respect of any user, vehicle or person, for the use of project facilities, any sum whatsoever in the nature of a toll or fee. MPRDC shall have the right and authority to levy toll or fee on the users and vehicles using the project facilities ("**Fee**") and to demand, collect, retain and appropriate the Fee in accordance with the applicable laws.

Concession fee: In consideration of the grant of concession under the DJSTL Concession Agreement, the concession fee payable by DJSTL to MPRDC shall be ₹ 1.00 per year during the term of the DJSTL Concession Agreement.

Performance security: DJSTL shall, for the performance of its obligations under the DJSTL Concession Agreement, during the Construction Period, as defined in the DJSTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DJSTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 61.5 million in the form set forth in the DJSTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DJSTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DJSTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DJSTL Concession Agreement. MPRDC shall disburse to DJSTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DJSTL Concession Agreement, shall be borne by DJSTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DJSTL shall operate and maintain the Project Highway, as defined in the DJSTL Concession Agreement, in accordance with the DJSTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DJSTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DJSTL, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- allowing and assisting the authority in collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains,

embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DJSTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DJSTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, among other things, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DJSTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DJSTL achieves commercial operation date after the scheduled date, as provided in the DJSTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Obligations relating to change in ownership: DJSTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DJSTL Concession Agreement, DJSTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DJSTL; or
- acquisition of any control directly or indirectly of the board of directors of DJSTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DJSTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DJSTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DJSTL from any liability or obligation under the DJSTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "**DJSTL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DJSTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DJSTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DJSTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DJSTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects);

(vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DJSTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DJSTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DJSTL of any of its obligations under the DJSTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DJSTL to any user or from any negligence of DJSTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DJSTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DJSTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DJSTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DJSTL in respect of the income or other taxes of DJSTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DJSTL or any of its contractors which are payable by DJSTL or any of its contractors.
- DJSTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DJSTL or by DJSTL's contractors in performing the obligations of DJSTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DJSTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DJSTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DJSTL is unable to secure such licence within a reasonable time, DJSTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DJSTL's rights: Upon occurrence of a DJSTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DJSTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DJSTL under the DJSTL Concession Agreement including the DJSTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DJSTL Concession Agreement, shall be entitled to substitute DJSTL under and in accordance with the Substitution Agreement, as defined in the DJSTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DJSTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DJSTL Concession Agreement, prior to the Appointed Date, as defined in the DJSTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DJSTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DJSTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DJSTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DJSTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DJSTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DJSTL; and
    - upon occurrence of a Political Event, as defined in the DJSTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DJSTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DJSTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DJSTL Default: Subject to the provisions of the DJSTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DJSTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DJSTL shall be deemed to be in default of the DJSTL Concession Agreement (the "**DJSTL Default**"), unless the default has occurred solely as a result of any breach of the DJSTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DJSTL Concession Agreement and DJSTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DJSTL Concession Agreement, DJSTL fails to cure, within a cure period of 90 days, the DJSTL Default for which whole or part of the Performance Security was appropriated;
- DJSTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DJSTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DJSTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DJSTL fails to cure the default within the cure period specified;
- DJSTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DJSTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DJSTL has failed to make any payment to MPRDC within the period specified in the DJSTL Concession Agreement; and
- a change in ownership has occurred in breach of the DJSTL Concession Agreement.

Upon occurrence of a DJSTL Default, MPRDC shall be entitled to terminate the DJSTL Concession Agreement by issuing a termination notice to DJSTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DJSTL of its intention to issue such termination notice and grant 15 days to DJSTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DJSTL Default: Upon termination on account of DJSTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DJSTL may terminate the DJSTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DJSTL; (ii) the failure to make any payment due

to DJSTL; (iii) repudiation of the DJSTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DJSTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DJSTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DJSTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DJSTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DJSTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DJSTL Concession Agreement.

- ***MPRDC Annuity and Toll Projects***

The DBL Ashoknagar-Vidisha Tollways Limited ("DAVTL") Concession Agreement ("DAVTL Concession Agreement")

Annuity: DAVTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DAVTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 50.4 million.

Fee: On and from the commercial operation date till the transfer date, DAVTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DAVTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DAVTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DAVTL Concession Agreement, the concession fee payable by DAVTL to MPRDC shall be ₹ 1.00 per year during the term of the DAVTL Concession Agreement.

Performance security: DAVTL shall, for the performance of its obligations under the DAVTL Concession Agreement, during the Construction Period, as defined in the DAVTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DAVTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 42.7 million in the form set forth in the DAVTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DAVTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DAVTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DAVTL Concession Agreement. MPRDC shall disburse to DAVTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DAVTL Concession Agreement, shall be borne by DAVTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DAVTL shall operate and maintain the Project Highway in accordance with the DAVTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DAVTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DAVTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee, as defined in the DAVTL Concession Agreement;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;

- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DAVTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DAVTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway; and
- intervals at which DAVTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and scope thereof; and
- lane closure schedule for each type of maintenance (length and time)

Reduction in annuity on account of delayed project completion: In case DAVTL achieves commercial operation date after the scheduled date, as provided in the DAVTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DAVTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DAVTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Ashoknagar-Vidisha road on Major District Road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DAVTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Ashoknagar-Vidisha road Major District Road if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DAVTL shall, without prejudice to its other rights and remedies under the DAVTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DAVTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DAVTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DAVTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DAVTL in accordance with the DAVTL Concession Agreement, and such compensation shall be the sole remedy of DAVTL.

Obligations relating to change in ownership: DAVTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DAVTL Concession Agreement, DAVTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DAVTL; or
- acquisition of any control directly or indirectly of the board of directors of DAVTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DAVTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DAVTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DAVTL from any liability or obligation under the DAVTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DAVTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DAVTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DAVTL Concession Agreement.

- During concession period: (i) all taxes due and payable by DAVTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- On termination: (i) all taxes due and payable by DAVTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DAVTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DAVTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DAVTL of any of its obligations under the DAVTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DAVTL to any user or from any negligence of DAVTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DAVTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DAVTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DAVTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DAVTL in respect of the income or other taxes of DAVTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DAVTL or any of its contractors which are payable by DAVTL or any of its contractors.
- DAVTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DAVTL or by DAVTL's contractors in performing the obligations of DAVTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DAVTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DAVTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DAVTL is unable to secure such licence within a reasonable time, DAVTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DAVTL's rights: Upon occurrence of a DAVTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DAVTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DAVTL under the DAVTL Concession Agreement including the DAVTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DAVTL Concession Agreement, shall be entitled to substitute DAVTL under and in accordance with the Substitution Agreement, as defined in the DAVTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold

termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DAVTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DAVTL Concession Agreement, prior to the Appointed Date, as defined in the DAVTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DAVTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DAVTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DAVTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DAVTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DAVTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DAVTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DAVTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DAVTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DAVTL; and
  - upon occurrence of a Political Event, as defined in the DAVTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DAVTL.

  Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DAVTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DAVTL Default: Subject to the provisions of the DAVTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DAVTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DAVTL shall be deemed to be in default of the DAVTL Concession Agreement (the "**DAVTL Default**"), unless the default has occurred solely as a result of any breach of the DAVTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DAVTL Concession Agreement and DAVTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DAVTL Concession Agreement, DAVTL fails to cure, within a cure period of 90 days, the DAVTL Default for which whole or part of the Performance Security was appropriated;
- DAVTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DAVTL Concession Agreement and continues to be in default for 120 days;

- upon occurrence of a Financial Default, as defined in the DAVTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DAVTL fails to cure the default within the cure period specified;
- DAVTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DAVTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DAVTL has failed to make any payment to MPRDC within the period specified in the DAVTL Concession Agreement; and
- a change in ownership has occurred in breach of the DAVTL Concession Agreement.

Upon occurrence of a DAVTL Default, MPRDC shall be entitled to terminate the DAVTL Concession Agreement by issuing a termination notice to DAVTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DAVTL of its intention to issue such termination notice and grant 15 days to DAVTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DAVTL Default: Upon termination on account of DAVTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DAVTL may terminate the DAVTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DAVTL; (ii) the failure to make any payment due to DAVTL; (iii) repudiation of the DAVTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DAVTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DAVTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DAVTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DAVTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DAVTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DAVTL Concession Agreement.

The DBL Betul Sarni Tollways Limited ("DBSTL") Concession Agreement ("DBSTL Concession Agreement")

Annuity: DBSTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBSTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 154.80 million.

Fee: On and from the commercial operation date till the transfer date, DBSTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DBSTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DBSTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DBSTL Concession Agreement, the concession fee payable by DBSTL to MPRDC shall be ₹ 1.00 per year during the term of the DBSTL Concession Agreement.

Performance security: DBSTL shall, for the performance of its obligations under the DBSTL Concession Agreement, during the Construction Period, as defined in the DBSTL Concession Agreement, provide to MPRDC no later than 180 days from the date of the DBSTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 118.8 million in the form set forth in the DBSTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DBSTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DBSTL in a sum equal to 20% of the cost of Change of Scope, and in the event

of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DBSTL Concession Agreement. MPRDC shall disburse to DBSTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DBSTL Concession Agreement, shall be borne by DBSTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DBSTL shall operate and maintain the Project Highway in accordance with the DBSTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DBSTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DBSTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DBSTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DBSTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DBSTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DBSTL achieves commercial operation date after the scheduled date, as provided in the DBSTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DBSTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DBSTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Betul-Parasia (state highway number 43) road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DBSTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Betul-Parasia (state highway number 43) if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DBSTL shall, without prejudice to its other rights and remedies under the DBSTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DBSTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DBSTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DBSTL Concession Agreement. Upon

breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DBSTL in accordance with the DBSTL Concession Agreement, and such compensation shall be the sole remedy of DBSTL.

Obligations relating to change in ownership: DBSTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DBSTL Concession Agreement, DBSTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DBSTL; or
- acquisition of any control directly or indirectly of the board of directors of DBSTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DBSTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DBSTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DBSTL from any liability or obligation under the DBSTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DBSTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DBSTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DBSTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DBSTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DBSTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii)incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DBSTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DBSTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DBSTL of any of its obligations under the DBSTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DBSTL to any user or from any negligence of DBSTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DBSTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DBSTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DBSTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DBSTL in respect of the income or other taxes of DBSTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DBSTL or any of its contractors which are payable by DBSTL or any of its contractors.
- DBSTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DBSTL or by DBSTL's contractors in performing the obligations of DBSTL or

in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DBSTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DBSTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DBSTL is unable to secure such licence within a reasonable time, DBSTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DBSTL's rights: Upon occurrence of a DBSTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DBSTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DBSTL under the DBSTL Concession Agreement including the DBSTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DBSTL Concession Agreement, shall be entitled to substitute DBSTL under and in accordance with the Substitution Agreement, as defined in the DBSTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DBSTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DBSTL Concession Agreement, prior to the Appointed Date, as defined in the DBSTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DBSTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DBSTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DBSTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DBSTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DBSTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DBSTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DBSTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DBSTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DBSTL; and
  - upon occurrence of a Political Event, as defined in the DBSTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DBSTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information

contained in the Financial Package, as defined in the DBSTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DBSTL Default: Subject to the provisions of the DBSTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DBSTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DBSTL shall be deemed to be in default of the DBSTL Concession Agreement (the "**DBSTL Default**"), unless the default has occurred solely as a result of any breach of the DBSTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DBSTL Concession Agreement and DBSTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DBSTL Concession Agreement, DBSTL fails to cure, within a cure period of 90 days, the DBSTL Default for which whole or part of the Performance Security was appropriated;
- DBSTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DBSTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DBSTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DBSTL fails to cure the default within the cure period specified;
- DBSTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DBSTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DBSTL has failed to make any payment to MPRDC within the period specified in the DBSTL Concession Agreement; and
- a change in ownership has occurred in breach of the DBSTL Concession Agreement.

Upon occurrence of a DBSTL Default, MPRDC shall be entitled to terminate the DBSTL Concession Agreement by issuing a termination notice to DBSTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DBSTL of its intention to issue such termination notice and grant 15 days to DBSTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DBSTL Default: Upon termination on account of DBSTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DBSTL may terminate the DBSTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DBSTL; (ii) the failure to make any payment due to DBSTL; (iii) repudiation of the DBSTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DBSTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DBSTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DBSTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DBSTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DBSTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DBSTL Concession Agreement.

The DBL Hata Dargawan Tollways Limited ("DHDTL") Concession Agreement ("DHDTL Concession Agreement")

Annuity: DHDTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHDTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 70.2 million.

Fee: On and from the commercial operation date till the transfer date, DHDTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DHDTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DHDTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DHDTL Concession Agreement, the concession fee payable by DHDTL to MPRDC shall be ₹ 1.00 per year during the term of the DHDTL Concession Agreement.

Performance security: DHDTL shall, for the performance of its obligations under the DHDTL Concession Agreement, during the Construction Period, as defined in the DHDTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DHDTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 37.1 million in the form set forth in the DHDTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DHDTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DHDTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DHDTL Concession Agreement. MPRDC shall disburse to DHDTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DHDTL Concession Agreement, shall be borne by DHDTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DHDTL shall operate and maintain the Project Highway in accordance with the DHDTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DHDTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DHDTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DHDTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DHDTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DHDTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time)

Reduction in annuity on account of delayed project completion: In case DHDTL achieves commercial operation date after the scheduled date, as provided in the DHDTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DHDTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DHDTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Hata-Dargawan (state highway number 48) road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DHDTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Hata-Dargawan (state highway number 48) if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DHDTL shall, without prejudice to its other rights and remedies under the DHDTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DHDTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DHDTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DHDTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DHDTL in accordance with the DHDTL Concession Agreement, and such compensation shall be the sole remedy of DHDTL.

Obligations relating to change in ownership: DHDTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DHDTL Concession Agreement, DHDTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DHDTL; or
- acquisition of any control directly or indirectly of the board of directors of DHDTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DHDTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DHDTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DHDTL from any liability or obligation under the DHDTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DHDTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DHDTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DHDTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DHDTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DHDTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DHDTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DHDTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits,

proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DHDTL of any of its obligations under the DHDTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DHDTL to any user or from any negligence of DHDTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DHDTL Concession Agreement on the part of MPRDC Indemnified Persons;

- DHDTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DHDTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DHDTL in respect of the income or other taxes of DHDTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DHDTL or any of its contractors which are payable by DHDTL or any of its contractors.
- DHDTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DHDTL or by DHDTL's contractors in performing the obligations of DHDTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DHDTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DHDTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DHDTL is unable to secure such licence within a reasonable time, DHDTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DHDTL's rights: Upon occurrence of a DHDTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DHDTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DHDTL under the DHDTL Concession Agreement including the DHDTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DHDTL Concession Agreement, shall be entitled to substitute DHDTL under and in accordance with the Substitution Agreement, as defined in the DHDTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DHDTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DHDTL Concession Agreement, prior to the Appointed Date, as defined in the DHDTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DHDTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DHDTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DHDTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DHDTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DHDTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DHDTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DHDTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DHDTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DHDTL; and
    - upon occurrence of a Political Event, as defined in the DHDTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DHDTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DHDTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DHDTL Default: Subject to the provisions of the DHDTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DHDTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DHDTL shall be deemed to be in default of the DHDTL Concession Agreement (the "**DHDTL Default**"), unless the default has occurred solely as a result of any breach of the DHDTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DHDTL Concession Agreement and DHDTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DHDTL Concession Agreement, DHDTL fails to cure, within a cure period of 90 days, the DHDTL Default for which whole or part of the Performance Security was appropriated;
- DHDTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DHDTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DHDTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DHDTL fails to cure the default within the cure period specified;
- DHDTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DHDTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DHDTL has failed to make any payment to MPRDC within the period specified in the DHDTL Concession Agreement; and
- a change in ownership has occurred in breach of the DHDTL Concession Agreement.

Upon occurrence of a DHDTL Default, MPRDC shall be entitled to terminate the DHDTL Concession Agreement by issuing a termination notice to DHDTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DHDTL of its intention to issue such termination notice and grant 15 days to DHDTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DHDTL Default: Upon termination on account of DHDTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DHDTL may terminate the DHDTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DHDTL; (ii) the failure to make any payment

due to DHDTL; (iii) repudiation of the DHDTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DHDTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DHDTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DHDTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DHDTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DHDTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DHDTL Concession Agreement.

The DBL Mundi-Sanawad Tollways Limited ("DMSTL") Concession Agreement ("DMSTL Concession Agreement")

Annuity: DMSTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DMSTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 82.8 million.

Fee: On and from the commercial operation date till the transfer date, DMSTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DMSTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DMSTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DMSTL Concession Agreement, the concession fee payable by DMSTL to MPRDC shall be ₹ 1.00 per year during the term of the DMSTL Concession Agreement.

Performance security: DMSTL shall, for the performance of its obligations under the DMSTL Concession Agreement, during the Construction Period, as defined in the DMSTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DMSTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 61 million in the form set forth in the DMSTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DMSTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DMSTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DMSTL Concession Agreement. MPRDC shall disburse to DMSTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DMSTL Concession Agreement, shall be borne by DMSTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DMSTL shall operate and maintain the Project Highway in accordance with the DMSTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DMSTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DMSTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the

efficient operation of the Project Highway.

Maintenance manual: DMSTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DMSTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DMSTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DMSTL achieves commercial operation date after the scheduled date, as provided in the DMSTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DMSTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DMSTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Mundi-Punasa-Sulgaon-Sanawad Road on Major District Road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DMSTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Mundi-Punasa-Sulgaon-Sanawad Road on Major District Road if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DMSTL shall, without prejudice to its other rights and remedies under the DMSTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DMSTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DMSTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DMSTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DMSTL in accordance with the DMSTL Concession Agreement, and such compensation shall be the sole remedy of DMSTL.

Obligations relating to change in ownership: DMSTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DMSTL Concession Agreement, DMSTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DMSTL; or
- acquisition of any control directly or indirectly of the board of directors of DMSTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DMSTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DMSTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DMSTL from any liability or obligation under the DMSTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the

escrow bank (the "DMSTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DMSTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DMSTL Concession Agreement.

- During concession period: (i) all taxes due and payable by DMSTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- On termination: (i) all taxes due and payable by DMSTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DMSTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DMSTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DMSTL of any of its obligations under the DMSTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DMSTL to any user or from any negligence of DMSTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DMSTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DMSTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DMSTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DMSTL in respect of the income or other taxes of DMSTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DMSTL or any of its contractors which are payable by DMSTL or any of its contractors.
- DMSTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DMSTL or by DMSTL's contractors in performing the obligations of DMSTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DMSTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DMSTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DMSTL is unable to secure such licence within a reasonable time, DMSTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DMSTL's rights: Upon occurrence of a DMSTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DMSTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DMSTL under the DMSTL Concession Agreement including the DMSTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DMSTL Concession Agreement, shall be entitled to substitute DMSTL under and in accordance with the Substitution Agreement, as defined in the DMSTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant

to the DMSTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DMSTL Concession Agreement, prior to the Appointed Date, as defined in the DMSTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DMSTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DMSTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DMSTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DMSTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DMSTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DMSTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DMSTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DMSTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DMSTL; and
  - upon occurrence of a Political Event, as defined in the DMSTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DMSTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DMSTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DMSTL Default: Subject to the provisions of the DMSTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DMSTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DMSTL shall be deemed to be in default of the DMSTL Concession Agreement (the "**DMSTL Default**"), unless the default has occurred solely as a result of any breach of the DMSTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DMSTL Concession Agreement and DMSTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DMSTL Concession Agreement, DMSTL fails to cure, within a cure period of 90 days, the DMSTL Default for which whole or part of the Performance Security was appropriated;
- DMSTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DMSTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DMSTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may

be, in accordance with the Substitution Agreement and DMSTL fails to cure the default within the cure period specified;

- DMSTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DMSTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DMSTL has failed to make any payment to MPRDC within the period specified in the DMSTL Concession Agreement; and
- a change in ownership has occurred in breach of the DMSTL Concession Agreement.

Upon occurrence of a DMSTL Default, MPRDC shall be entitled to terminate the DMSTL Concession Agreement by issuing a termination notice to DMSTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DMSTL of its intention to issue such termination notice and grant 15 days to DMSTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DMSTL Default: Upon termination on account of DMSTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DMSTL may terminate the DMSTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DMSTL; (ii) the failure to make any payment due to DMSTL; (iii) repudiation of the DMSTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DMSTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DMSTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DMSTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DMSTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DMSTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DMSTL Concession Agreement.

The DBL Patan Rehli Tollways Limited ("DPRTL") Concession Agreement ("DPRTL Concession Agreement")

Annuity: DPRTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DPRTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 176.4 million.

Fee: On and from the commercial operation date till the transfer date, DPRTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DPRTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DPRTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DPRTL Concession Agreement, the concession fee payable by DPRTL to MPRDC shall be ₹ 1.00 per year during the term of the DPRTL Concession Agreement.

Performance security: DPRTL shall, for the performance of its obligations under the DPRTL Concession Agreement, during the Construction Period, as defined in the DPRTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DPRTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 104.3 million in the form set forth in the DPRTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DPRTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DPRTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DPRTL Concession Agreement. MPRDC shall disburse to DPRTL such amounts as are certified by the Independent Engineer, as

reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DPRTL Concession Agreement, shall be borne by DPRTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DPRTL shall operate and maintain the Project Highway in accordance with the DPRTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DPRTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DPRTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DPRTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DPRTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DPRTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DPRTL achieves commercial operation date after the scheduled date, as provided in the DPRTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DPRTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DPRTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Patan-Tendukheda-Rehli road of state highway number 15 (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DPRTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Patan-Tendukheda-Rehli road of state highway number 15 if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DPRTL shall, without prejudice to its other rights and remedies under the DPRTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DPRTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DPRTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DPRTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DPRTL in accordance with the DPRTL Concession Agreement, and such compensation shall be the sole remedy of DPRTL.

Obligations relating to change in ownership: DPRTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DPRTL Concession Agreement, DPRTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DPRTL; or
- acquisition of any control directly or indirectly of the board of directors of DPRTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DPRTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DPRTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DPRTL from any liability or obligation under the DPRTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DPRTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DPRTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DPRTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DPRTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DPRTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DPRTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DPRTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**Government Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DPRTL of any of its obligations under the DPRTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DPRTL to any user or from any negligence of DPRTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DPRTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DPRTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DPRTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DPRTL in respect of the income or other taxes of DPRTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DPRTL or any of its contractors which are payable by DPRTL or any of its contractors.
- DPRTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DPRTL or by DPRTL's contractors in performing the obligations of DPRTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DPRTL shall make every reasonable effort,

by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DPRTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DPRTL is unable to secure such licence within a reasonable time, DPRTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DPRTL's rights: Upon occurrence of a DPRTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DPRTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DPRTL under the DPRTL Concession Agreement including the DPRTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DPRTL Concession Agreement, shall be entitled to substitute DPRTL under and in accordance with the Substitution Agreement, as defined in the DPRTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DPRTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DPRTL Concession Agreement, prior to the Appointed Date, as defined in the DPRTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DPRTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DPRTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DPRTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DPRTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DPRTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DPRTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DPRTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DPRTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DPRTL; and
  - upon occurrence of a Political Event, as defined in the DPRTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DPRTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DPRTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DPRTL Default: Subject to the provisions of the DPRTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DPRTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DPRTL shall be deemed to be in default of the DPRTL Concession Agreement (the "**DPRTL Default**"), unless the default has occurred solely as a result of any breach of the DPRTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DPRTL Concession Agreement and DPRTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DPRTL Concession Agreement, DPRTL fails to cure, within a cure period of 90 days, the DPRTL Default for which whole or part of the Performance Security was appropriated;
- DPRTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DPRTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DPRTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DPRTL fails to cure the default within the cure period specified;
- DPRTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DPRTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DPRTL has failed to make any payment to MPRDC within the period specified in the DPRTL Concession Agreement; and
- a change in ownership has occurred in breach of the DPRTL Concession Agreement.

Upon occurrence of a DPRTL Default, MPRDC shall be entitled to terminate the DPRTL Concession Agreement by issuing a termination notice to DPRTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DPRTL of its intention to issue such termination notice and grant 15 days to DPRTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DPRTL Default: Upon termination on account of DPRTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DPRTL may terminate the DPRTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DPRTL; (ii) the failure to make any payment due to DPRTL; (iii) repudiation of the DPRTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DPRTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DPRTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DPRTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DPRTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DPRTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DPRTL Concession Agreement.

The DBL Sardarpur Badnawar Tollways Limited ("DSBTL") Concession Agreement ("DSBTL Concession Agreement")

Annuity: DSBTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DSBTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 47.1 million.

Fee: On and from the commercial operation date till the transfer date, DSBTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DSBTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DSBTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DSBTL Concession Agreement, the concession fee payable by DSBTL to MPRDC shall be ₹ 1.00 per year during the term of the DSBTL Concession Agreement.

Performance security: DSBTL shall, for the performance of its obligations under the DSBTL Concession Agreement, during the Construction Period, as defined in the DSBTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DSBTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 42 million in the form set forth in the DSBTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DSBTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DSBTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DSBTL Concession Agreement. MPRDC shall disburse to DSBTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DSBTL Concession Agreement, shall be borne by DSBTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DSBTL shall operate and maintain the Project Highway in accordance with the DSBTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DSBTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DSBTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DSBTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DSBTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DSBTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DSBTL achieves commercial operation date after the scheduled date, as provided in the DSBTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DSBTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DSBTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Sardarpur-Badnawar Road on state highway number 35 (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DSBTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Sardarpur-Badnawar Road on state highway number 35 if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DSBTL shall, without prejudice to its other rights and remedies under the DSBTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DSBTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DSBTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DSBTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DSBTL in accordance with the DSBTL Concession Agreement, and such compensation shall be the sole remedy of DSBTL.

Obligations relating to change in ownership: DSBTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DSBTL Concession Agreement, DSBTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DSBTL; or
- acquisition of any control directly or indirectly of the board of directors of DSBTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DSBTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DSBTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DSBTL from any liability or obligation under the DSBTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DSBTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DSBTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DSBTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DSBTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DSBTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DSBTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DSBTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**MPRDC Indemnified Persons**") against any and all suits,

proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DSBTL of any of its obligations under the DSBTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DSBTL to any user or from any negligence of DSBTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DSBTL Concession Agreement on the part of MPRDC Indemnified Persons;

- DSBTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DSBTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DSBTL in respect of the income or other taxes of DSBTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DSBTL or any of its contractors which are payable by DSBTL or any of its contractors.
- DSBTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DSBTL or by DSBTL's contractors in performing the obligations of DSBTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DSBTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DSBTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DSBTL is unable to secure such licence within a reasonable time, DSBTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DSBTL's rights: Upon occurrence of a DSBTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DSBTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DSBTL under the DSBTL Concession Agreement including the DSBTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DSBTL Concession Agreement, shall be entitled to substitute DSBTL under and in accordance with the Substitution Agreement, as defined in the DSBTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DSBTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DSBTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DSBTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DSBTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DSBTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DSBTL; and
  - upon occurrence of a Political Event, as defined in the DSBTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DSBTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DSBTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DSBTL Default: Subject to the provisions of the DSBTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DSBTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DSBTL shall be deemed to be in default of the DSBTL Concession Agreement (the "**DSBTL Default**"), unless the default has occurred solely as a result of any breach of the DSBTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DSBTL Concession Agreement and DSBTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DSBTL Concession Agreement, DSBTL fails to cure, within a cure period of 90 days, the DSBTL Default for which whole or part of the Performance Security was appropriated;
- DSBTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DSBTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DSBTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DSBTL fails to cure the default within the cure period specified;
- DSBTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DSBTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DSBTL has failed to make any payment to MPRDC within the period specified in the DSBTL Concession Agreement; and
- a change in ownership has occurred in breach of the DSBTL Concession Agreement.

Upon occurrence of a DSBTL Default, MPRDC shall be entitled to terminate the DSBTL Concession Agreement by issuing a termination notice to DSBTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DSBTL of its intention to issue such termination notice and grant 15 days to DSBTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DSBTL Default: Upon termination on account of DSBTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DSBTL may terminate the DSBTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DSBTL; (ii) the failure to make any payment due to DSBTL; (iii) repudiation of the DSBTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DSBTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DSBTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DSBTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DSBTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DSBTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DSBTL Concession Agreement.

The DBL Silwani Sultanganj Tollways Limited ("DBL Silwani") Concession Agreement ("DBL Silwani Concession Agreement")

Annuity: DBL Silwani shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DBL Silwani Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 94.9 million.

Fee: On and from the commercial operation date till the transfer date, DBL Silwani shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DBL Silwani Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DBL Silwani Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DBL Silwani Concession Agreement, the concession fee payable by DBL Silwani to MPRDC shall be ₹ 1.00 per year during the term of the DBL Silwani Concession Agreement.

Performance security: DBL Silwani shall, for the performance of its obligations under the DBL Silwani Concession Agreement, during the Construction Period, as defined in the DBL Silwani Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DBL Silwani Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 60.5 million in the form set forth in the DBL Silwani Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DBL Silwani Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DBL Silwani in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DBL Silwani Concession Agreement. MPRDC shall disburse to DBL Silwani such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DBL Silwani Concession Agreement, shall be borne by DBL Silwani, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DBL Silwani shall operate and maintain the Project Highway in accordance with the DBL Silwani Concession Agreement either by itself, or through the O&M Contractor, as defined in the DBL Silwani Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DBL Silwani, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DBL Silwani shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DBL Silwani shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, among other things, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;

- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DBL Silwani shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DBL Silwani achieves commercial operation date after the scheduled date, as provided in the DBL Silwani Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DBL Silwani Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DBL Silwani Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Silwani-Sagar on state highway number 15 (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DBL Silwani Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Silwani-Sagar on state highway number 15 if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DBL Silwani shall, without prejudice to its other rights and remedies under the DBL Silwani Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DBL Silwani Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DBL Silwani Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DBL Silwani Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DBL Silwani in accordance with the DBL Silwani Concession Agreement, and such compensation shall be the sole remedy of DBL Silwani.

Obligations relating to change in ownership: DBL Silwani shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DBL Silwani Concession Agreement, DBL Silwani agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DBL Silwani; or
- acquisition of any control directly or indirectly of the board of directors of DBL Silwani by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DBL Silwani, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DBL Silwani without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DBL Silwani from any liability or obligation under the DBL Silwani Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DBL Silwani Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DBL Silwani Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DBL Silwani Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DBL Silwani for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DBL Silwani for and in respect of the Project; (ii) 90%

of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DBL Silwani shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DBL Silwani Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**MPRDC Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DBL Silwani of any of its obligations under the DBL Silwani Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DBL Silwani to any user or from any negligence of DBL Silwani under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DBL Silwani Concession Agreement on the part of MPRDC Indemnified Persons;
- DBL Silwani shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DBL Silwani to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DBL Silwani in respect of the income or other taxes of DBL Silwani's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DBL Silwani or any of its contractors which are payable by DBL Silwani or any of its contractors.
- DBL Silwani shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DBL Silwani or by DBL Silwani's contractors in performing the obligations of DBL Silwani or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DBL Silwani shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DBL Silwani shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DBL Silwani is unable to secure such licence within a reasonable time, DBL Silwani shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DBL Silwani's rights: Upon occurrence of a DBL Silwani Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DBL Silwani Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DBL Silwani under the DBL Silwani Concession Agreement including the DBL Silwani's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DBL Silwani Concession Agreement, shall be entitled to substitute DBL Silwani under and in accordance with the Substitution Agreement, as defined in the DBL Silwani Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DBL Silwani Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DBL Silwani Concession Agreement, prior to the Appointed Date, as defined in the DBL Silwani Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DBL Silwani Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or

- after COD, whereupon DBL Silwani is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DBL Silwani was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DBL Silwani to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DBL Silwani Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DBL Silwani Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DBL Silwani Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DBL Silwani, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DBL Silwani; and
  - upon occurrence of a Political Event, as defined in the DBL Silwani Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DBL Silwani.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DBL Silwani Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DBL Silwani Default: Subject to the provisions of the DBL Silwani Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DBL Silwani fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 (sixty) days, DBL Silwani shall be deemed to be in default of the DBL Silwani Concession Agreement (the "**DBL Silwani Default**"), unless the default has occurred solely as a result of any breach of the DBL Silwani Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DBL Silwani Concession Agreement and DBL Silwani fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DBL Silwani Concession Agreement, DBL Silwani fails to cure, within a cure period of 90 days, the DBL Silwani Default for which whole or part of the Performance Security was appropriated;
- DBL Silwani does not achieve the latest outstanding project milestone due in accordance with the provisions of the DBL Silwani Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DBL Silwani Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DBL Silwani fails to cure the default within the cure period specified;
- DBL Silwani abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DBL Silwani is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DBL Silwani has failed to make any payment to MPRDC within the period specified in the DBL Silwani Concession Agreement; and
- a change in ownership has occurred in breach of the DBL Silwani Concession Agreement.

Upon occurrence of a DBL Silwani Default, MPRDC shall be entitled to terminate the DBL Silwani Concession Agreement by issuing a termination notice to DBL Silwani; provided that before issuing the termination notice,

MPRDC shall by a notice inform DBL Silwani of its intention to issue such termination notice and grant 15 days to DBL Silwani to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DBL Silwani Default: Upon termination on account of DBL Silwani Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DBL Silwani may terminate the DBL Silwani Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DBL Silwani; (ii) the failure to make any payment due to DBL Silwani; (iii) repudiation of the DBL Silwani Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DBL Silwani shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DBL Silwani Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DBL Silwani fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DBL Silwani so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DBL Silwani to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DBL Silwani Concession Agreement.

The DBL Sitamau Suwasara Tollways Limited ("DSSTL") Concession Agreement ("DSSTL Concession Agreement")

Annuity: DSSTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DSSTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 36.9 million.

Fee: On and from the commercial operation date till the transfer date, DSSTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DSSTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DSSTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DSSTL Concession Agreement, the concession fee payable by DSSTL to MPRDC shall be ₹ 1.00 per year during the term of the DSSTL Concession Agreement.

Performance security: DSSTL shall, for the performance of its obligations under the DSSTL Concession Agreement, during the Construction Period, as defined in the DSSTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DSSTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 26.5 million in the form set forth in the DSSTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DSSTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DSSTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DSSTL Concession Agreement. MPRDC shall disburse to DSSTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DSSTL Concession Agreement, shall be borne by DSSTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DSSTL shall operate and maintain the Project Highway in accordance with the DSSTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DSSTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DSSTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DSSTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DSSTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DSSTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DSSTL achieves commercial operation date after the scheduled date, as provided in the DSSTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DSSTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DSSTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Sitamau-Basai-Suwasara road on Major District Road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DSSTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Sitamau-Basai-Suwasara road on Major District Road if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DSSTL shall, without prejudice to its other rights and remedies under the DSSTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DSSTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DSSTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DSSTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DSSTL in accordance with the DSSTL Concession Agreement, and such compensation shall be the sole remedy of DSSTL.

Obligations relating to change in ownership: DSSTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DSSTL Concession Agreement, DSSTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DSSTL; or
- acquisition of any control directly or indirectly of the board of directors of DSSTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in

ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DSSTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DSSTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DSSTL from any liability or obligation under the DSSTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "**DSSTL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DSSTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DSSTL Concession Agreement.

- During concession period: (i) all taxes due and payable by DSSTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- On termination: (i) all taxes due and payable by DSSTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DSSTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DSSTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**MPRDC Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DSSTL of any of its obligations under the DSSTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DSSTL to any user or from any negligence of DSSTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DSSTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DSSTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DSSTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DSSTL in respect of the income or other taxes of DSSTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DSSTL or any of its contractors which are payable by DSSTL or any of its contractors.
- DSSTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DSSTL or by DSSTL's contractors in performing the obligations of DSSTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DSSTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DSSTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DSSTL is unable to secure such licence within a reasonable time, DSSTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DSSTL's rights: Upon occurrence of a DSSTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DSSTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DSSTL under the DSSTL Concession Agreement including the DSSTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DSSTL Concession Agreement, shall be entitled to substitute DSSTL under and in accordance with the Substitution Agreement, as defined in the DSSTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DSSTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DSSTL Concession Agreement, prior to the Appointed Date, as defined in the DSSTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DSSTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon DSSTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DSSTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DSSTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DSSTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DSSTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DSSTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DSSTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DSSTL; and
  - upon occurrence of a Political Event, as defined in the DSSTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DSSTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DSSTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DSSTL Default: Subject to the provisions of the DSSTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DSSTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DSSTL shall be deemed to be in default of the DSSTL Concession Agreement (the "**DSSTL Default**"), unless the default has occurred solely as a result of any breach of the DSSTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DSSTL Concession

Agreement and DSSTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;

- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DSSTL Concession Agreement, DSSTL fails to cure, within a cure period of 90 days, the DSSTL Default for which whole or part of the Performance Security was appropriated;
- DSSTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DSSTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DSSTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DSSTL fails to cure the default within the cure period specified;
- DSSTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DSSTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DSSTL has failed to make any payment to MPRDC within the period specified in the DSSTL Concession Agreement; and
- a change in ownership has occurred in breach of the DSSTL Concession Agreement.

Upon occurrence of a DSSTL Default, MPRDC shall be entitled to terminate the DSSTL Concession Agreement by issuing a termination notice to DSSTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DSSTL of its intention to issue such termination notice and grant 15 days to DSSTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DSSTL Default: Upon termination on account of DSSTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DSSTL may terminate the DSSTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DSSTL; (ii) the failure to make any payment due to DSSTL; (iii) repudiation of the DSSTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DSSTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DSSTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DSSTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DSSTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DSSTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DSSTL Concession Agreement.

The DBL Tikamgarh-Nowgoan Tollways Limited ("DTNTL") Concession Agreement ("DTNTL Concession Agreement")

Annuity: DTNTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DTNTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 89.1 million.

Fee: On and from the commercial operation date till the transfer date, DTNTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DTNTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DTNTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DTNTL Concession Agreement, the concession fee payable by DTNTL to MPRDC shall be ₹ 1.00 per year during the term of the DTNTL Concession Agreement.

Performance security: DTNTL shall, for the performance of its obligations under the DTNTL Concession Agreement, during the Construction Period, as defined in the DTNTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DTNTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 51.3 million in the form set forth in the DTNTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DTNTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DTNTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DTNTL Concession Agreement. MPRDC shall disburse to DTNTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DTNTL Concession Agreement, shall be borne by DTNTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DTNTL shall operate and maintain the Project Highway in accordance with the DTNTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DTNTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DTNTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DTNTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DTNTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DTNTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DTNTL achieves commercial operation date after the scheduled date, as provided in the DTNTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DTNTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DTNTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Tikamgarh (Dhajrai) Jatara Palera -Nowgaon Major District Road (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DTNTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Tikamgarh (Dhajrai) Jatara Palera -Nowgaon Major District Road if the length of such expressway or

toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DTNTL shall, without prejudice to its other rights and remedies under the DTNTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DTNTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DTNTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DTNTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DTNTL in accordance with the DTNTL Concession Agreement, and such compensation shall be the sole remedy of DTNTL.

Obligations relating to change in ownership: DTNTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DTNTL Concession Agreement, DTNTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DTNTL; or
- acquisition of any control directly or indirectly of the board of directors of DTNTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DTNTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DTNTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DTNTL from any liability or obligation under the DTNTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "**DTNTL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DTNTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DTNTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DTNTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DTNTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii)incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DTNTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DTNTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**MPRDC Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DTNTL of any of its obligations under the DTNTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DTNTL to any user or from any negligence of DTNTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DTNTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DTNTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
    - failure of DTNTL to comply with applicable laws and applicable permits;
    - payment of taxes required to be made by DTNTL in respect of the income or other taxes of

DTNTL's contractors, suppliers and representatives; or
    - non-payment of amounts due as a result of materials or services furnished to DTNTL or any of its contractors which are payable by DTNTL or any of its contractors.
- DTNTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DTNTL or by DTNTL's contractors in performing the obligations of DTNTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DTNTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DTNTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DTNTL is unable to secure such licence within a reasonable time, DTNTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DTNTL's rights: Upon occurrence of a DTNTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DTNTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DTNTL under the DTNTL Concession Agreement including the DTNTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DTNTL Concession Agreement, shall be entitled to substitute DTNTL under and in accordance with the Substitution Agreement, as defined in the DTNTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DTNTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DTNTL Concession Agreement, prior to the Appointed Date, as defined in the DTNTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
    - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DTNTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
    - after COD, whereupon DTNTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DTNTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DTNTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DTNTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DTNTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DTNTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the

insurance cover for such Indirect Political Event, shall be borne by DTNTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DTNTL; and

- upon occurrence of a Political Event, as defined in the DTNTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DTNTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DTNTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DTNTL Default: Subject to the provisions of the DTNTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DTNTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DTNTL shall be deemed to be in default of the DTNTL Concession Agreement (the "**DTNTL Default**"), unless the default has occurred solely as a result of any breach of the DTNTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DTNTL Concession Agreement and DTNTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DTNTL Concession Agreement, DTNTL fails to cure, within a cure period of 90 days, the DTNTL Default for which whole or part of the Performance Security was appropriated;
- DTNTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DTNTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DTNTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DTNTL fails to cure the default within the cure period specified;
- DTNTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DTNTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DTNTL has failed to make any payment to MPRDC within the period specified in the DTNTL Concession Agreement; and
- a change in ownership has occurred in breach of the DTNTL Concession Agreement.

Upon occurrence of a DTNTL Default, MPRDC shall be entitled to terminate the DTNTL Concession Agreement by issuing a termination notice to DTNTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DTNTL of its intention to issue such termination notice and grant 15 days to DTNTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DTNTL Default: Upon termination on account of DTNTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DTNTL may terminate the DTNTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DTNTL; (ii) the failure to make any payment due to DTNTL; (iii) repudiation of the DTNTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DTNTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DTNTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DTNTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DTNTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DTNTL to MPRDC

within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DTNTL Concession Agreement.

The DBL Uchera-Nagod Tollways Limited ("DUNTL") Concession Agreement ("DUNTL Concession Agreement")

Annuity: DUNTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DUNTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 84.6 million.

Fee: On and from the commercial operation date till the transfer date, DUNTL shall have the sole and exclusive right to demand, collect and appropriate charge to be levied on and payable for a vehicle using the Project Highway, as defined in the DUNTL Concession Agreement, or a part thereof ("**Fee**") from users of the Project Highway, in accordance with the DUNTL Concession Agreement and the Fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the DUNTL Concession Agreement, the concession fee payable by DUNTL to MPRDC shall be ₹ 1.00 per year during the term of the DUNTL Concession Agreement.

Performance security: DUNTL shall, for the performance of its obligations under the DUNTL Concession Agreement, during the Construction Period, as defined in the DUNTL Concession Agreement, provide to MPRDC no later than 180 (one hundred and eighty) days from the date of the DUNTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 56.3 million in the form set forth in the DUNTL Concession Agreement.

Change of scope: MPRDC may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DUNTL Concession Agreement (the "**Change of Scope**"). MPRDC shall make an advance payment to DUNTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DUNTL Concession Agreement. MPRDC shall disburse to DUNTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DUNTL Concession Agreement, shall be borne by DUNTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by MPRDC.

O&M: DUNTL shall operate and maintain the Project Highway in accordance with the DUNTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DUNTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DUNTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DUNTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DUNTL shall provide to MPRDC and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DUNTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DUNTL achieves commercial operation date after the scheduled date, as provided in the DUNTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Restrictions on construction of additional tollway: In accordance with the provisions of the DUNTL Concession Agreement, MPRDC shall not construct, and shall procure that no Government Instrumentality, as defined in the DUNTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* Uchera-Nagod-Singhpur-Kalinjer road on state highway number 56 (collectively the "**Additional Tollway**") for use by traffic at any time before the tenth anniversary of the Appointed Date, as defined in the DUNTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, Uchera-Nagod-Singhpur-Kalinjer road on state highway number 56 if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If MPRDC shall be in breach of this provision, DUNTL shall, without prejudice to its other rights and remedies under the DUNTL Concession Agreement, be entitled to receive compensation from MPRDC.

Obligations relating to competing roads: MPRDC shall procure that during the subsistence of the DUNTL Concession Agreement, neither MPRDC nor any Government Instrumentality shall, at any time before the tenth anniversary of the Appointed Date, construct or cause to be constructed any Competing Road, as defined in the DUNTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the DUNTL Concession Agreement. Upon breach of its obligations hereunder, MPRDC shall be liable to payment of compensation to DUNTL in accordance with the DUNTL Concession Agreement, and such compensation shall be the sole remedy of DUNTL.

Obligations relating to change in ownership: DUNTL shall not undertake or permit any change in ownership, except with the prior written approval of MPRDC. Notwithstanding anything to the contrary contained in the DUNTL Concession Agreement, DUNTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of DUNTL; or
- acquisition of any control directly or indirectly of the board of directors of DUNTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of MPRDC from national security and public interest perspective, the decision of MPRDC in this behalf being final, conclusive and binding on DUNTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DUNTL without such prior approval of MPRDC. It has been expressly agreed that approval of MPRDC hereunder shall be limited to national security and public interest perspective, and MPRDC shall endeavour to convey its decision thereon expeditiously. It has also been agreed that MPRDC shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DUNTL from any liability or obligation under the DUNTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "DUNTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The DUNTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DUNTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DUNTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DUNTL for and in respect of the Project; (ii) 90% of the

Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DUNTL shall indemnify, defend, save and hold harmless MPRDC and its officers, servants, agents, Government Instrumentalities, as defined in the DUNTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**MPRDC Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DUNTL of any of its obligations under the DUNTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DUNTL to any user or from any negligence of DUNTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DUNTL Concession Agreement on the part of MPRDC Indemnified Persons;
- DUNTL shall fully indemnify, hold harmless and defend MPRDC and MPRDC Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DUNTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DUNTL in respect of the income or other taxes of DUNTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DUNTL or any of its contractors which are payable by DUNTL or any of its contractors.
- DUNTL shall fully indemnify, hold harmless and defend MPRDC Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which MPRDC Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of- claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DUNTL or by DUNTL's contractors in performing the obligations of DUNTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DUNTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the. injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DUNTL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authorising continued use of the infringing work. If DUNTL is unable to secure such licence within a reasonable time, DUNTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DUNTL's rights: Upon occurrence of a DUNTL Default, as defined below, MPRDC shall be entitled, without prejudice to its other rights and remedies under the DUNTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DUNTL under the DUNTL Concession Agreement including the DUNTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DUNTL Concession Agreement, shall be entitled to substitute DUNTL under and in accordance with the Substitution Agreement, as defined in the DUNTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DUNTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DUNTL Concession Agreement, prior to the Appointed Date, as defined in the DUNTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DUNTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or

- after COD, whereupon DUNTL is unable to collect Fee despite making best efforts or it is directed by MPRDC to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which DUNTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, MPRDC shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle DUNTL to extension of one day in the concession period.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DUNTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DUNTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DUNTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DUNTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by MPRDC to DUNTL; and
  - upon occurrence of a Political Event, as defined in the DUNTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by MPRDC to DUNTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DUNTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DUNTL Default: Subject to the provisions of the DUNTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DUNTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DUNTL shall be deemed to be in default of the DUNTL Concession Agreement (the "**DUNTL Default**"), unless the default has occurred solely as a result of any breach of the DUNTL Concession Agreement by MPRDC or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DUNTL Concession Agreement and DUNTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DUNTL Concession Agreement, DUNTL fails to cure, within a cure period of 90 days, the DUNTL Default for which whole or part of the Performance Security was appropriated;
- DUNTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DUNTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DUNTL Concession Agreement, the Lenders' Representative has by notice required MPRDC to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DUNTL fails to cure the default within the cure period specified;
- DUNTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of MPRDC;
- DUNTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DUNTL has failed to make any payment to MPRDC within the period specified in the DUNTL Concession Agreement; and
- a change in ownership has occurred in breach of the DUNTL Concession Agreement.

Upon occurrence of a DUNTL Default, MPRDC shall be entitled to terminate the DUNTL Concession Agreement by issuing a termination notice to DUNTL; provided that before issuing the termination notice, MPRDC shall by a notice inform DUNTL of its intention to issue such termination notice and grant 15 days to DUNTL to make a

representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DUNTL Default: Upon termination on account of DUNTL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: DUNTL may terminate the DUNTL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on DUNTL; (ii) the failure to make any payment due to DUNTL; (iii) repudiation of the DUNTL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: DUNTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DUNTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DUNTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by MPRDC, MPRDC shall be entitled to get the same repaired or rectified at the risk and cost of DUNTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by MPRDC in this regard shall be reimbursed by DUNTL to MPRDC within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, MPRDC shall be entitled to recover the same in accordance with the provisions of the DUNTL Concession Agreement.

- ***R&BD GOG Annuity Project***

The DBL Nadiad Modasa Tollways Limited ("DNMTL") Concession Agreement ("DNMTL Concession Agreement")

Annuity: DNMTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DNMTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 174.6 million.

Concession fee: In consideration of the grant of concession under the DNMTL Concession Agreement, the concession fee payable by DNMTL to Road and Buildings Department, Government of Gujarat ("**R&BD, GoG**") shall be ₹ 1.00 per year during the term of the DNMTL Concession Agreement.

Performance security: DNMTL shall, for the performance of its obligations under the DNMTL Concession Agreement, during the Construction Period, as defined in the DNMTL Concession Agreement, provide to R&BD, GoG no later than 120 days from the date of the DNMTL Concession Agreement, an irrevocable and unconditional guarantee from a scheduled bank other than the co-operative banks for a sum equivalent to ₹ 134.1 million in the form set forth in the DNMTL Concession Agreement.

Change of scope: R&BD, GoG may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DNMTL Concession Agreement (the "**Change of Scope**"). R&BD, GoG shall disburse to DNMTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DNMTL Concession Agreement, shall be borne by DNMTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by R&BD, GoG.

O&M: DNMTL shall operate and maintain the Project Highway, as defined in the DNMTL Concession Agreement, in accordance with the DNMTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DNMTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DNMTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- minimising disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the State;
- carrying out periodic preventive maintenance of the Project Highway;

- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- preventing, with the assistance of concerned law enforcement agencies, any unauthorised use of the Project Highway;
- preventing, with the assistance of concerned law enforcement agencies, any encroachments on the Project Highway;
- protection of the environment and provision of equipment and materials therefor;
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and
- complying with Safety Requirements in accordance with the DNMTL Concession Agreement.

Maintenance manual: DNMTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DNMTL shall provide to R&BD, GOG and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, among other things, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DNMTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Obligations relating to change in ownership:

- DNMTL shall not undertake or permit any change in ownership, except with the prior written approval of the R&BD, GoG.
- The criteria mentioned in RFP document, as defined in the DNMTL Concession Agreement, will prevail with respect to ownership and equity holding which is reproduced hereunder: the applicant would be required to commit to hold a minimum equity stake equal to 51% of the aggregate shareholding of the special purpose vehicle until 3 years after commercial operation date and not less than 26% of paid up equity capital in the special purpose vehicle for rest of the concession period.

Escrow Account: As per the escrow agreement entered into between R&BD, GoG, the Lenders' Representative & the escrow bank (the "DNMTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by R&BD, GoG etc is to be deposited into the escrow account opened with escrow bank. The DNMTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DNMTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DNMTL for and in respect of the Project; (ii) Concession Fee and other dues payable to R&BD, GoG; (iii) monthly proportionate provision of Debt Service due in an Accounting Year; (iv) all payments relating to construction of the Project; (v) O&M Expenses; (vi) O&M Expenses and other costs and expenses incurred by R&BD, GoG; (vii) Debt service payment in respect of Subordinated Debt; (viii) Any reserve requirements as set forth in the Financing Agreements; and damages to R&BD, GoG under the Concession Agreement;
- <u>On termination</u>: (i) all taxes due and payable by DNMTL for and in respect of the Project; (ii) Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iii) all payments and damages to R&BD, GoG under the Concession Agreement; (iv) retention monies (on account of liabilities for defects); (v) outstanding Debt Service (including balance of Debt Due); (vi) outstanding Subordinate Debt; (vii) incurred or accrued O&M Expenses; (viii) other payments under the Concession Agreement.

Indemnities:

- DNMTL shall indemnify, defend, save and hold harmless R&BD, GOG and its officers, servants, agents, Government Instrumentalities, as defined in the DNMTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**R&BD, GOG Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DNMTL of any of its obligations under the DNMTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DNMTL to any user or from any negligence of DNMTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DNMTL Concession Agreement on the part of R&BD, GOG Indemnified Persons;
- DNMTL shall fully indemnify, hold harmless and defend R&BD, GoG and R&BD, GoG Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DNMTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DNMTL in respect of the income or other taxes of DNMTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DNMTL or any of its contractors which are payable by DNMTL or any of its contractors.
- DNMTL shall fully indemnify, hold harmless and defend R&BD, GoG Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which R&BD, GoG Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DNMTL or by DNMTL's contractors in performing the obligations of DNMTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DNMTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DNMTL shall promptly make every reasonable effort to secure for R&BD, GoG a licence, at no cost to R&BD, GoG, authorising continued use of the infringing work. If DNMTL is unable to secure such licence within a reasonable time, DNMTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DNMTL's rights: Upon occurrence of a DNMTL Default, as defined below, R&BD, GoG shall be entitled, without prejudice to its other rights and remedies under the DNMTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DNMTL under the DNMTL Concession Agreement including the DNMTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DNMTL Concession Agreement, shall be entitled to substitute DNMTL under and in accordance with the Substitution Agreement, as defined in the DNMTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, R&BD, GOG shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DNMTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DNMTL Concession Agreement, prior to the Appointed Date, as defined in the DNMTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DNMTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DNMTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DNMTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DNMTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DNMTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by R&BD, GoG to DNMTL; and
    - upon occurrence of a Political Event, as defined in the DNMTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by R&BD, GoG to DNMTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DNMTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DNMTL Default: Subject to the provisions of the DNMTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DNMTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DNMTL shall be deemed to be in default of the DNMTL Concession Agreement (the "**DNMTL Default**"), unless the default has occurred solely as a result of any breach of the DNMTL Concession Agreement by R&BD, GoG or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DNMTL Concession Agreement and DNMTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DNMTL Concession Agreement, DNMTL fails to cure, within a cure period of 90 days, the DNMTL Default for which whole or part of the Performance Security was appropriated;
- DNMTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DNMTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DNMTL Concession Agreement, the Lenders' Representative has by notice required R&BD, GoG to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DNMTL fails to cure the default within the cure period specified;
- DNMTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of R&BD, GoG;
- DNMTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DNMTL has failed to make any payment to R&BD, GoG within the period specified in the DNMTL Concession Agreement; and
- a change in ownership has occurred in breach of the DNMTL Concession Agreement.

Upon occurrence of a DNMTL Default, R&BD, GoG shall be entitled to terminate the DNMTL Concession Agreement by issuing a termination notice to DNMTL; provided that before issuing the termination notice, R&BD, GoG shall by a notice inform DNMTL of its intention to issue such termination notice and grant 90 days to DNMTL to make a representation, and may, after the expiry of such 90 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DNMTL Default: Upon termination on account of DNMTL Default, R&BD, GOG will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for R&BD, GoG Default: DNMTL may terminate the DNMTL Concession Agreement on account of occurrence of a default by the R&BD, GoG which is not rectified within cure periods (the "**R&BD, GoG Default**")

and includes – (i) material breach causing a material adverse effect on DNMTL; (ii) the failure to make any payment due to DNMTL; (iii) repudiation of the DNMTL Concession Agreement etc.

Termination Payment for R&BD, GoG Default: Upon termination on account of R&BD, GoG Default, R&BD, GoG will pay an amount equal to Discounted Value of Future Net Cash Flows.

Defects liability after termination: DNMTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DNMTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DNMTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by R&BD, GoG, R&BD, GoG shall be entitled to get the same repaired or rectified at the risk and cost of DNMTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by R&BD, GoG in this regard shall be reimbursed by DNMTL to R&BD, GoG within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, R&BD, GoG shall be entitled to recover the same in accordance with the provisions of the DNMTL Concession Agreement.

- ***MPRDC Toll Project***

The Suryavanshi Infrastructure Private Limited ("SIPL") Concession Agreement ("SIPL Concession Agreement")

Fee: SIPL shall be entitled during the Toll Period, as defined in the SIPL Concession Agreement, to levy, collect and appropriate the fee from the users of the Project Highway, as defined in the SIPL Concession Agreement, pursuant to and in accordance with the fee notification in the SIPL Concession Agreement. SIPL acknowledges that the fee notification, inter alia, provides for revision in the fees by increase in the fees of, at the rate of 7% per year based on the fees charged in the previous accounting year, as per the fee notification in the SIPL Concession Agreement, and SIPL has confirmed that save and except as provide in the fee notification, SIPL shall not be entitled to and shall not seek any relief whatsoever from MPRDC, Government of India or Government of Madhya Pradesh on account of increase or otherwise in wholesale price index or on any other account except in accordance with the express provisions of the SIPL Concession Agreement. SIPL shall collect fees from local personal traffic and local commercial traffic after reducing the fees by the following rates:

- For local personal traffic: 75% of the applicable fees for the specific category of vehicle; and
- For local commercial traffic: 50% of the applicable fees for the specific category of vehicle.

Concession fee: In consideration of the grant of concession under the SIPL Concession Agreement, the concession fee payable by SIPL to MPRDC shall be ₹ 1.00 per year during the term of the SIPL Concession Agreement.

Performance security: SIPL shall, for due and faithful performance of its obligations under the SIPL Concession Agreement, during the Construction Period, as defined in the SIPL Concession Agreement, provide to MPRDC a security for a sum equivalent to ₹ 12.6 million, in the form of an irrevocable and unconditional guarantee from a bank, as provided in the SIPL Concession Agreement.

Maintenance Security: SIPL shall, for due and faithful performance of its obligations under the SIPL Concession Agreement, during the Toll Period, provide to MPRDC a security for a sum equivalent to ₹ 2.9 million in the form of an irrevocable and unconditional bank guarantee on or before the issue of completion certificate and start of toll date.

Change of scope: MPRDC may require the provision of additional works and services on or about Project Highway which are beyond the scope of the project as contemplated by the SIPL Concession Agreement (the "**Change of Scope**"), to be carried out by SIPL at its own cost during the concession period and that there shall be no change in concession period or any compensation payable if such changes do not require expenditure exceeding ₹ 1.3 million (0.5% of the project cost) and do not adversely affect the toll date. All such changes shall be made by MPRDC by an order (the "**Change of Scope Order**") issued in accordance with the procedure set forth in the SIPL Concession Agreement. MPRDC shall not increase/decrease the scope of work under normal circumstances. However, in the exceptional circumstances any increase in the scope of work shall lead to increase in the concession period to the extent such changes require expenditure exceeding ₹ 1.3 million. However, in case the demand of grant is more than 20% of project cost, any reduction in the scope of work under exceptional circumstances shall not alter the concession period and will result in reduction in the subsidy to the extent that grant remains 20% of total project cost and beyond that the same will result in reduction in concession period, to the extent such change in scope requires reduction in expenditure exceeding ₹ 1.3 million. In case the demand of grant is equal or less than 20%, the reduction in change of scope under exceptional circumstances will result in reduction of concession period.

O&M: SIPL shall operate and maintain the Project Highway in accordance with the SIPL Concession Agreement either by itself, or through the O&M Contractor, as defined in the SIPL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of SIPL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- charging, collecting and retaining the fee in accordance with the SIPL Concession Agreement;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices; and
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment.

Grant/Subsidy: MPRDC has agreed to pay SIPL as cash support by way of an outright grant equal to the sum of ₹ 99 million in accordance with the SIPL Concession Agreement. The Government of India shall be able to grant up to 20% of total project cost as per the provisions of scheme for support to public-private partnerships in infrastructure. The rest of the grant will be disbursed by MPRDC in accordance with SIPL Concession Agreement. The grant shall be, in no case, more than 40% of the total project cost.

Escrow Account: As per the escrow agreement entered into between MPRDC, the Lenders' Representative & the escrow bank (the "**SIPL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by MPRDC etc is to be deposited into the escrow account opened with escrow bank. The SIPL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the SIPL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by SIPL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by MPRDC; (v) Concession Fee and other dues payable to MPRDC; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to MPRDC under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by SIPL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to MPRDC under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- SIPL shall be entirely responsible for and bear the cost of and shall indemnify, hold MPRDC not liable for and defend any and all proceedings, actions and, third party claims (other than a claim by Government of Madhya Pradesh or Government of India) for loss, damage and expense of whatever kind and nature arising out of the design, engineering, construction, procurement, operation and maintenance of entire Project Highway or any arising out of a breach by SIPL of any of its obligations under the SIPL Concession Agreement except to the extent that any such claim has arisen due to MPRDC event of default. It has been agreed that no liability or general indemnity would be upon MPRDC;
- SIPL shall fully indemnify, defend, hold MPRDC not liable including its officers, servants, agents and subsidiaries, from and against any and all loss and damages arising out of or with respect to (a). failure of SIPL to comply with applicable laws and applicable permits; (b). payments of taxes relating to SIPL contractors, suppliers and representatives, income or other taxes required to be paid by SIPL without reimbursement hereunder, or (c). non-payment of amounts due as a result of materials or services furnished to SIPL or any of its contractors which are payable by SIPL or any of its contractors.
- SIPL shall be entirely responsible for and bear the cost of and shall indemnify, defend and hold MPRDC not liable from and against any and all damages which MPRDC, its officers, servants, agents, subsidiaries and contractors ("**MPRDC Indemnified Persons**") may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by SIPL or by SIPL's contractors, in performing the obligations of SIPL or in any way incorporated in or related to the project. If in any such suit, claim or proceedings, a temporary restraint order or preliminary injunction, is granted, SIPL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the suspension of the injunction or restraint order. If, in any such suit claim or proceedings, the project, or any part, thereof or comprised

therein is held to constitute an infringement and its use is permanently enjoined, SIPL shall promptly make every reasonable effort to secure for MPRDC a licence, at no cost to MPRDC, authoring continued use of the infringing work. If SIPL is unable to secure such licence within a reasonable time, SIPL shall, at its own expense and without impairing the specifications and standards either replace the affected work, or pail, or process thereof with non-infringing work or parts or process, or modify the same so that it becomes non-infringing.

Material Breach and Suspension: If SIPL shall be in Material Breach, as defined in the SIPL Concession Agreement, of the SIPL Concession Agreement, MPRDC shall be entitled in its sole discretion and without prejudice to its other rights and remedies under the SIPL Concession Agreement, including its right of Termination hereunder, to (i) suspend all or any rights of SIPL under the SIPL Concession Agreement including the SIPL's right to collect all Fees and other revenues from the project highway, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the SIPL Concession Agreement, shall be entitled to substitute SIPL under and in accordance with the Substitution Agreement, as defined in the SIPL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, MPRDC shall withhold termination for a period not exceeding 120 days from the date of Suspension, and any extension thereof pursuant to the SIPL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Allocation of costs during subsistence of force majeure:

- Upon occurrence of a Force Majeure Event, as defined in the SIPL Concession Agreement, after financial closure, the costs arising out of such events ("**Force Majeure Costs**") shall be allocated as follows:
  - When the Force Majeure Event is a Non-Political Event, as defined in the SIPL Concession Agreement, the parties shall bear their respective costs and neither party shall be required to pay to the other party any costs arising of any such Force Majeure Event;
  - When the Force Majeure Event is an Indirect Political Event, as defined in the SIPL Concession Agreement, the Force Majeure Costs attributable to such Indirect Political Event and directly relating to such project, shall be borne by SIPL to the extent Force Majeure Costs exceed the insurance claims, one half of the same to the extent actually incurred and duly certified by the auditors of SIPL shall be compensated to SIPL; and
  - When the Force Majeure Event is a Political Event, as defined in the SIPL Concession Agreement, all Force Majeure Costs to the extent actually incurred and certified by the auditors of SIPL shall be compensated by MPRDC to SIPL within 180 days of such amount accepted by MPRDC.

    Force Majeure Costs shall not include loss of Fee revenues but shall include interest payments, debt repayment obligations on such debt in proportion to the period of Force Majeure Event subsisting, O&M expenses and all other costs directly attributable to the Force Majeure Event.

Termination for SIPL Default: The following events, among others, shall constitute an event of default by SIPL ("**SIPL Event of Default**") unless such SIPL event of default has occurred as a result of MPRDC event of default or a force majeure event:

- SIPL fails to achieve any project milestone other than scheduled project completion date within the period set forth in the SIPL Concession Agreement and fails to cure such default within a period of 90 days from the date of its occurrence;
- SIPL abandons the operations of the Project Highway for more than 15 consecutive days without the prior written consent of MPRDC, provided that SIPL shall be deemed not to have abandoned such operation if such abandonment was (i). as a result of force majeure event and is only for the period such force majeure is continuing, or (ii). is on account of a breach of its obligations by MPRDC after due notice is given to MPRDC.
- SIPL repudiates the SIPL Concession Agreement or otherwise evidences an intention not to be bound by the SIPL Concession Agreement; and
- SIPL has delayed any payment that has fallen due under the SIPL Concession Agreement, if such delay exceeds 90 days.

Upon the occurrence of any breach by SIPL under the SIPL Concession Agreement including any SIPL Event of Default, MPRDC shall be entitled to encash and appropriate the performance guarantee and to terminate the SIPL Concession Agreement by a communication in writing.

Termination Payments for SIPL Default: Upon termination on account of SIPL Default, MPRDC will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for MPRDC Default: SIPL may terminate the SIPL Concession Agreement on account of occurrence of a default by the MPRDC which is not rectified within cure periods (the "**MPRDC Default**") and includes – (i) material breach causing a material adverse effect on SIPL; (ii) the failure to make any payment due to SIPL; (iii) repudiation of the SIPL Concession Agreement etc.

Termination Payment for MPRDC Default: Upon termination on account of MPRDC Default, MPRDC will pay an amount equal to (i) debt due, less insurance claims; (ii) the entire subordinated debt; and (ii) 100% of the equity (subscribed in cash and actually spent on the project) but excluding the Grant/ Subsidy if such termination occurs during two years Commencement date and for each year thereafter, such amount will be adjusted every year.

Defects Liability: Not less than 12 months or more than 15 months prior to the expiry of the concession period, SIPL and the Independent Consultant, as defined in the SIPL Concession Agreement, shall conduct a joint inspection ("**Initial Inspection**") of the Project Highway and all project facilities. Within 90 days after the completion of the Initial Inspection, SIPL shall provide to the Independent Consultant a report on the condition of the Project Highway and the project facilities, and a notice setting out proposals by SIPL as to the renewal works, pursuant to the provisions of the SIPL Concession Agreement. SIPL shall carry out the renewal works at its own cost. Not less than nine months nor more than 12 months prior to the expiry of the concession period, SIPL and the Independent Consultant shall conduct a joint inspection ("**Second Inspection**") of all elements of the Project Highway and the project facilities (whether or not the renewal works have been carried out). Within 30 days after the completion of the Second Inspection, SIPL shall provide to the Independent Consultant a report on the condition of the Project Highway and Project Facilities and a notice setting out any revisions or additions to the renewal works, pursuant to the provisions of the SIPL Concession Agreement. SIPL shall carry out the revised renewal works at its own cost. If following the Second Inspection, it is agreed or determined that no renewal works are required, then within 14 days of such agreement, 50% of the sums retained for the purposes of defect liability shall be released to SIPL. Within 14 days after the issue of the Vesting Certificate, as defined in the SIPL Concession Agreement, the remaining sums retained for the purposes of defects liability shall be released to SIPL.

- ***NHAI Toll Project***

The Jalpa Devi Tollways Limited ("JDTL") Concession Agreement ("JDTL Concession Agreement")

Grant: NHAI agrees to provide JDTL cash support by way of an outright grant equal to ₹ 270 million in accordance with the JDTL Concession Agreement.

Fee: On and from the commercial operation date till the transfer date, JDTL shall have the sole and exclusive right to demand, collect and appropriate charge levied on and payable for a vehicle using the Project Highway, as defined in the JDTL Concession Agreement, or a part thereof ("**Fee**") from the users subject to and in accordance with the JDTL Concession Agreement and the fee notification set forth therein.

Concession fee: In consideration of the grant of concession under the JDTL Concession Agreement, the concession fee payable by JDTL to NHAI shall be ₹ 1.00 per year.

Performance security: JDTL shall, for the performance of its obligations under the JDTL Concession Agreement, during the Construction Period, as defined in the JDTL Concession Agreement, provide to NHAI no later than 180 (one hundred and eighty) days from the date of the JDTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 506.5 million in the form set forth in the JDTL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the JDTL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to JDTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the JDTL Concession Agreement. NHAI shall disburse to JDTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the JDTL Concession Agreement, shall be borne by JDTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by NHAI.

O&M: JDTL shall operate and maintain the Project Highway, as defined in the JDTL Concession Agreement, in accordance with the JDTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the JDTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of JDTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- collecting and appropriating the Fee;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: JDTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: JDTL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which JDTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Restrictions on construction of additional tollway: In accordance with the provisions of the JDTL Concession Agreement, NHAI shall not construct, and shall procure that no Government Instrumentality, as defined in the JDTL Concession Agreement, shall construct or cause to be constructed, any expressway or other toll road between, *inter alia* four laning of Guna-Biaora section of national highway number 3, as provided in the JDTL Concession Agreement (collectively the "**Additional Tollway**") for use by traffic at any time before the sixteenth anniversary of the Appointed Date, as defined in the JDTL Concession Agreement. Additional Tollway does not include any expressway or other toll road connecting, *inter alia*, four laning of Guna-Biaora section of national highway 3 if the length of such expressway or toll road exceeds the length of the existing route comprising the Project Highway by 20%. If NHAI shall be in breach of this provision, JDTL shall, without prejudice to its other rights and remedies under the JDTL Concession Agreement, be entitled to receive compensation from NHAI.

Obligations relating to competing roads: NHAI shall procure that during the subsistence of the JDTL Concession Agreement, neither NHAI nor any Government Instrumentality shall, at any time before the tenth anniversary of the appointed date, construct or cause to be constructed any competing road, as defined in the JDTL Concession Agreement; provided that this restriction shall not apply if the average traffic on the Project Highway in any year exceeds 90% of its designed capacity specified in the JDTL Concession Agreement. Upon breach of its obligations hereunder, NHAI shall be liable to payment of compensation to JDTL in accordance with the JDTL Concession Agreement, and such compensation shall be the sole remedy of JDTL.

Obligations relating to change in ownership: JDTL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the JDTL Concession Agreement, JDTL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 15% of the total equity of JDTL; or
- acquisition of any control directly or indirectly of the board of directors of JDTL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on JDTL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of JDTL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to

national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve JDTL from any liability or obligation under the JDTL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative & the escrow bank (the "**JDTL Escrow Agreement**") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by NHAI etc is to be deposited into the escrow account opened with escrow bank. The JDTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the JDTL Concession Agreement.

- During concession period: (i) all taxes due and payable by JDTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) Concession Fee and other dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- On termination: (i) all taxes due and payable by JDTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to NHAI under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- JDTL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, Government Instrumentalities, as defined in the JDTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**NHAI Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by JDTL of any of its obligations under the JDTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by JDTL to any user or from any negligence of JDTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the JDTL Concession Agreement on the part of NHAI Indemnified Persons;
- JDTL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of JDTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by JDTL in respect of the income or other taxes of JDTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to JDTL or any of its contractors which are payable by JDTL or any of its contractors.
- JDTL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by JDTL or by JDTL's contractors in performing the obligations of JDTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, JDTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, JDTL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If JDTL is unable to secure such licence within a reasonable time, JDTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of JDTL's rights: Upon occurrence of a JDTL Default, NHAI shall be entitled, without prejudice to its other rights and remedies under the JDTL Concession Agreement including its rights of termination thereunder, to (i) suspend all rights of JDTL under the JDTL Concession Agreement, including JDTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**").

Suspension hereunder shall be effective forthwith upon issue of notice by NHAI to JDTL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from JDTL and the Lenders' Representative, as defined in the JDTL Concession Agreement, NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the JDTL Concession Agreement, shall be entitled to substitute JDTL under and in accordance with the Substitution Agreement, as defined in the JDTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the JDTL Concession Agreement, prior to the Appointed Date, as defined in the JDTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the JDTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, whereupon JDTL is unable to collect Fee despite making best efforts or it is directed by NHAI to suspend the collection thereof during the subsistence of such Force Majeure Event, the concession period shall be extended by a period, equal in length to the period during which JDTL was prevented from collection of Fee on account thereof; provided that in the event of partial collection of Fee where the daily collection is less than 90% of the average daily Fee, NHAI shall extend the concession period in proportion to the loss of Fee on a daily basis. Loss of 25% in collection of Fee as compared to the average daily Fee for four days shall entitle JDTL to extension of one day in the concession period.

Allocation of costs arising out of Force Majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the JDTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the JDTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the JDTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by JDTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to JDTL; and
  - upon occurrence of a Political Event, as defined in the JDTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to JDTL.

  Force Majeure Costs may include interest payments on debt, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss of Fee revenues or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the JDTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for JDTL Default: Subject to the provisions of the JDTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and JDTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, JDTL shall be deemed to be in default of the JDTL Concession Agreement (the "**JDTL Default**"), unless the default has occurred solely as a result of any breach of the JDTL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the JDTL Concession Agreement and JDTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;

- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the JDTL Concession Agreement, JDTL fails to cure, within a cure period of 90 days, the JDTL Default for which whole or part of the Performance Security was appropriated;
- JDTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the JDTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, the Lenders' Representative, each term as defined in the JDTL Concession Agreement, has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement, as defined in the JDTL Concession Agreement, and JDTL fails to cure the default within the cure period specified;
- JDTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- JDTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- JDTL has failed to make any payment to NHAI within the period specified in the JDTL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the JDTL Concession Agreement.

Upon occurrence of a JDTL Default, NHAI shall be entitled to terminate the JDTL Concession Agreement by issuing a termination notice to JDTL; provided that before issuing the termination notice, NHAI shall by a notice inform JDTL of its intention to issue such termination notice and grant 15 days to JDTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for JDTL Default: Upon termination on account of JDTL Default, NHAI will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for NHAI Default: JDTL may terminate the JDTL Concession Agreement on account of occurrence of a default by the NHAI which is not rectified within cure periods (the "**NHAI Default**") and includes – (i) material breach causing a material adverse effect on JDTL; (ii) the failure to make any payment due to JDTL; (iii) repudiation of the JDTL Concession Agreement etc.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay an amount equal to (i) debt due; and (ii) 150% of the adjusted equity.

Defects liability after termination: JDTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the JDTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that JDTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of JDTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by JDTL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the JDTL Concession Agreement.

- ***KRDCL Annuity Projects***

The DBL Hassan Periyapatna Tollways Limited ("DHPTL") Concession Agreement ("DHPTL Concession Agreement")

Annuity: DHPTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHPTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 262.8 million.

Fee: DHPTL shall not levy, demand or collect from or in respect of any user, vehicle or person, for the use of project facilities, any sum whatsoever in the nature of a toll or fee. KRDCL shall have the right and authority to levy toll or fee on the users and vehicles using the project facilities ("**Fee**") and to demand, collect, retain and appropriate the Fee in accordance with the applicable laws.

Concession fee: In consideration of the grant of concession under the DHPTL Concession Agreement, the concession fee payable by DHPTL to KRDCL shall be ₹ 1.00 per year during the term of the DHPTL Concession Agreement.

Performance security: DHPTL shall, for the performance of its obligations under the DHPTL Concession Agreement, during the Construction Period, as defined in the DHPTL Concession Agreement, provide to KRDCL no later than 120 days from the date of the DHPTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 138.5 million in the form set forth in the DHPTL Concession Agreement.

Change of scope: KRDCL may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DHPTL Concession Agreement (the "**Change of Scope**"). KRDCL shall make an advance payment to DHPTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DHPTL Concession Agreement. KRDCL shall disburse to DHPTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DHPTL Concession Agreement, shall be borne by DHPTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by KRDCL.

O&M: DHPTL shall operate and maintain the Project Highway, as defined in the DHPTL Concession Agreement, in accordance with the DHPTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DHPTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DHPTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- allowing authority or authority contractor in collecting and appropriating the Fee;
- minimising disruption to traffic in the event of accidents or. other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the state;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- preventing, with the assistance of concerned law enforcement agencies, any unauthorised use of the Project Highway;
- preventing, with the assistance of concerned law enforcement agencies, any encroachments on the Project Highway;
- protection of the environment and provision of equipment and materials therefor;
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and
- complying with safety requirements in accordance with the DHPTL Concession Agreement.

Maintenance manual: DHPTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DHPTL shall provide to KRDCL and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DHPTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DHPTL achieves commercial operation date after the scheduled date, as provided in the DHPTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Obligations relating to change in ownership:

- Subject to the next clause, in the case of DHPTL that has been set up by a joint venture, the key joint venture member shall, until the end of concession period, maintain an equity share capital not less than 26% of the subscribed and paid-up equity of DHPTL and 5% of the total project cost.
- Any key joint venture member, other than the lead member, may, with the prior written approval of the KRDCL, which shall not be unreasonably withheld, reduce its shareholding to below 26% of the subscribed and paid-up equity share capital of DHPTL and less than 5 % of the total project cost, after the date falling two years after the commercial operation date, subject to:
    - all joint venture members continuing to collectively hold at least 26% of the subscribed and paid-up equity of DHPTL until the end of concession period; and
    - the joint venture member who is to provide the O&M experience according to the application submitted by the joint venture shall subscribe and continue to hold at least 5% of the subscribed and paid up equity of DHPTL until the end of concession period.

Escrow Account: As per the escrow agreement entered into between KRDCL, the Lenders' Representative & the escrow bank (the "DHPTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by KRDCL etc is to be deposited into the escrow account opened with escrow bank. The DHPTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DHPTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DHPTL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by KRDCL; (v) Concession Fee and other dues payable to KRDCL; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to KRDCL under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt.
- <u>On termination</u>: (i) all taxes due and payable by DHPTL for and in respect of the Project; (ii) 90% of the Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to KRDCL under the Concession Agreement; (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix); other payments under the Concession Agreement.

Indemnities:

- DHPTL shall indemnify, defend, save and hold harmless KRDCL and its officers, servants, agents, Government Instrumentalities, as defined in the DHPTL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**KRDCL Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DHPTL of any of its obligations under the DHPTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DHPTL to any user, or from any negligence of DHPTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DHPTL Concession Agreement on the part of KRDCL Indemnified Persons;
- DHPTL shall fully indemnify, hold harmless and defend KRDCL and KRDCL Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
    - failure of DHPTL to comply with applicable laws and applicable permits;
    - payment of taxes required to be made by DHPTL in respect of the income or other taxes of DHPTL's contractors, suppliers and representatives; or
    - non-payment of amounts due as a result of materials or services furnished to DHPTL or any of its contractors which are payable by DHPTL or any of its contractors.
- DHPTL shall fully indemnify, hold harmless and defend KRDCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which KRDCL Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DHPTL or by DHPTL's contractors in performing the obligations of DHPTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DHPTL shall make every reasonable effort,

by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DHPTL shall promptly make every reasonable effort to secure for KRDCL a licence, at no cost to KRDCL, authorising continued use of the infringing work. If DHPTL is unable to secure such licence within a reasonable time, DHPTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DHPTL's rights: Upon occurrence of a DHPTL Default, as defined below, KRDCL shall be entitled, without prejudice to its other rights and remedies under the DHPTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DHPTL under the DHPTL Concession Agreement including the DHPTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DHPTL Concession Agreement, shall be entitled to substitute DHPTL under and in accordance with the Substitution Agreement, as defined in the DHPTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, KRDCL shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DHPTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DHPTL Concession Agreement, prior to the Appointed Date, as defined in the DHPTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DHPTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DHPTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DHPTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DHPTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DHPTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by KRDCL to DHPTL; and
    - upon occurrence of a Political Event, as defined in the DHPTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by KRDCL to DHPTL.

Force Majeure Costs may include interest payments on debt. O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss on account of damages or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DHPTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DHPTL Default: Subject to the provisions of the DHPTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DHPTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DHPTL shall be deemed to be in default of the DHPTL Concession Agreement (the "**DHPTL Default**"), unless the default has occurred solely as a result of any breach of the DHPTL Concession Agreement by KRDCL or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DHPTL Concession Agreement and DHPTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DHPTL Concession Agreement, DHPTL fails to cure, within a cure period of 90 days, the DHPTL Default for which whole or part of the Performance Security was appropriated;
- DHPTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DHPTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DHPTL Concession Agreement, the Lenders' Representative has by notice required KRDCL to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DHPTL fails to cure the default within the cure period specified;
- DHPTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of KRDCL;
- DHPTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DHPTL has failed to make any payment to KRDCL within the period specified in the DHPTL Concession Agreement; and
- a change in ownership has occurred in breach of the DHPTL Concession Agreement.

Upon occurrence of a DHPTL Default, KRDCL shall be entitled to terminate the DHPTL Concession Agreement by issuing a termination notice to DHPTL; provided that before issuing the termination notice, KRDCL shall by a notice inform DHPTL of its intention to issue such termination notice and grant 15 days to DHPTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DHPTL Default: Upon termination on account of DHPTL Default, KRDCL will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for KRDCL Default: DHPTL may terminate the DHPTL Concession Agreement on account of occurrence of a default by the KRDCL which is not rectified within cure periods (the "**KRDCL Default**") and includes – (i) material breach causing a material adverse effect on DHPTL; (ii) the failure to make any payment due to DHPTL; (iii) repudiation of the DHPTL Concession Agreement etc.

Termination Payment for KRDCL Default: Upon termination on account of KRDCL Default, KRDCL will pay an amount equal to (i) debt due, less insurance claims; and (ii) 120% of the adjusted equity.

Defects liability after termination: DHPTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DHPTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DHPTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by KRDCL, KRDCL shall be entitled to get the same repaired or rectified at the risk and cost of DHPTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by KRDCL in this regard shall be reimbursed by DHPTL to KRDCL within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, KRDCL shall be entitled to recover the same in accordance with the provisions of the DHPTL Concession Agreement.

The DBL Hirekerur Ranibennur Tollways Limited ("DHRTL") Concession Agreement ("DHRTL Concession Agreement")

Annuity: DHRTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DHRTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 196.2 million.

Fee: DHRTL shall not levy, demand or collect from or in respect of any user, vehicle or person, for the use of project facilities, any sum whatsoever in the nature of a toll or fee. KRDCL shall have the right and authority to levy toll or fee on the users and vehicles using the project facilities ("**Fee**") and to demand, collect, retain and appropriate the Fee in accordance with the applicable laws.

Concession fee: In consideration of the grant of concession under the DHRTL Concession Agreement, the concession fee payable by DHRTL to KRDCL shall be ₹ 1.00 per year during the term of the DHRTL Concession Agreement.

Performance security: DHRTL shall, for the performance of its obligations under the DHRTL Concession Agreement, during the Construction Period, as defined in the DHRTL Concession Agreement, provide to KRDCL no later than 120 days from the date of the DHRTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 110 million in the form set forth in the DHRTL Concession Agreement.

Change of scope: KRDCL may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DHRTL Concession Agreement (the "**Change of Scope**"). KRDCL shall make an advance payment to DHRTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DHRTL Concession Agreement. KRDCL shall disburse to DHRTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DHRTL Concession Agreement, shall be borne by DHRTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by KRDCL.

O&M: DHRTL shall operate and maintain the Project Highway, as defined in the DHRTL Concession Agreement, in accordance with the DHRTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DHRTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DHRTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- allowing authority or authority contractor in collecting and appropriating the Fee;
- minimising disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the state;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- preventing, with the assistance of concerned law enforcement agencies, any unauthorised use of the Project Highway;
- preventing, with the assistance of concerned law enforcement agencies, any encroachments on the Project Highway;
- protection of the environment and provision of equipment and materials therefor;
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and
- complying with safety requirements in accordance with the DHRTL Concession Agreement.

Maintenance manual: DHRTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DHRTL shall provide to KRDCL and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include, the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DHRTL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DHRTL achieves commercial operation date after the scheduled date, as provided in the DHRTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Obligations relating to change in ownership:

- Subject to the next clause, in the case of DHRTL that has been set up by a joint venture, the key joint venture member shall, until the end of concession period, maintain an equity share capital not less than 26% of the subscribed and paid-up equity of DHRTL and 5% of the total project cost.
- Any key joint venture member, other than the lead member, may, with the prior written approval of the KRDCL, which shall not be unreasonably withheld, reduce its shareholding to below 26% of the subscribed and paid-up equity share capital of DHRTL and less than 5 % of the total project cost, after the date falling two years after the commercial operation date, subject to:
    - all joint venture members continuing to collectively hold at least 26% of the subscribed and paid-up equity of DHRTL until the end of concession period; and
    - the joint venture member who is to provide the O&M experience according to the application submitted by the joint venture shall subscribe and continue to hold at least 5% of the subscribed and paid up equity of DHRTL until the end of concession period.

Escrow Account: As per the escrow agreement entered into between KRDCL, the Lenders' Representative & the escrow bank (the "DHRTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by KRDCL etc is to be deposited into the escrow account opened with escrow bank. The DHRTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DHRTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DHRTL for and in respect of the Project; (ii) Concession Fee and other dues payable to KRDCL; (iii) monthly proportionate provision of Debt Service due in an Accounting Year; (iv) all payments relating to construction of the Project; (v) O&M Expenses; (vi) O&M Expenses and other costs and expenses incurred by KRDCL; (vii) Debt service payment in respect of Subordinated Debt; (viii) Any reserve requirements as set forth in the Financing Agreements; and damages to KRDCL under the Concession Agreement;
- <u>On termination</u>: (i) all taxes due and payable by DHRTL for and in respect of the Project; (ii) Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to KRDCL under the Concession Agreement; (iv) retention monies (on account of liabilities for defects); (v) outstanding Debt Service (including balance of Debt Due); (vi) outstanding Subordinate Debt; (vii) incurred or accrued O&M Expenses; (viii); other payments under the Concession Agreement.

Indemnities:

- DHRTL shall indemnify, defend, save and hold harmless KRDCL and its officers, servants, agents, Government Instrumentalities, as defined in the DHRTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**KRDCL Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DHRTL of any of its obligations under the DHRTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DHRTL to any user or from any negligence of DHRTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DHRTL Concession Agreement on the part of KRDCL Indemnified Persons;
- DHRTL shall fully indemnify, hold harmless and defend KRDCL and KRDCL Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
    - failure of DHRTL to comply with applicable laws and applicable permits;
    - payment of taxes required to be made by DHRTL in respect of the income or other taxes of DHRTL's contractors, suppliers and representatives; or
    - non-payment of amounts due as a result of materials or services furnished to DHRTL or any of its contractors which are payable by DHRTL or any of its contractors.
- DHRTL shall fully indemnify, hold harmless and defend KRDCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which KRDCL Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DHRTL or by DHRTL's contractors in performing the obligations of DHRTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DHRTL shall make every reasonable effort,

by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DHRTL shall promptly make every reasonable effort to secure for KRDCL a licence, at no cost to KRDCL, authorising continued use of the infringing work. If DHRTL is unable to secure such licence within a reasonable time, DHRTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DHRTL's rights: Upon occurrence of a DHRTL Default, as defined below, KRDCL shall be entitled, without prejudice to its other rights and remedies under the DHRTL Concession Agreement, including its rights of termination thereunder, to (i) suspend all rights of DHRTL under the DHRTL Concession Agreement including the DHRTL's right to collect Fee, and other revenues pursuant hereto, and (ii) exercise such rights itself and perform the obligations hereunder or authorise any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DHRTL Concession Agreement, shall be entitled to substitute DHRTL under and in accordance with the Substitution Agreement, as defined in the DHRTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, KRDCL shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof pursuant to the DHRTL Concession Agreement, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DHRTL Concession Agreement, prior to the Appointed Date, as defined in the DHRTL Concession Agreement, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs before COD, the concession period and the dates set forth in the Project Completion Schedule, as defined in the DHRTL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists.
- No extension in Concession Period, as defined in the DHRTL Concession Agreement, shall be granted in case of Force Majeure Event occurs after the COD.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DHRTL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DHRTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
    - upon occurrence of an Indirect Political Event, as defined in the DHRTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DHRTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by KRDCL to DHRTL; and
    - upon occurrence of a Political Event, as defined in the DHRTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by KRDCL to DHRTL.

Force Majeure Costs may include interest payments on debt, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss on account of damages or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DHRTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DHRTL Default: Subject to the provisions of the DHRTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DHRTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DHRTL shall be deemed to be in default of the DHRTL Concession Agreement (the "**DHRTL Default**"), unless the default has occurred

solely as a result of any breach of the DHRTL Concession Agreement by KRDCL or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DHRTL Concession Agreement and DHRTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DHRTL Concession Agreement, DHRTL fails to cure, within a cure period of 90 days, the DHRTL Default for which whole or part of the Performance Security was appropriated;
- DHRTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DHRTL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DHRTL Concession Agreement, the Lenders' Representative has by notice required KRDCL to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DHRTL fails to cure the default within the cure period specified;
- DHRTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of KRDCL;
- DHRTL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DHRTL has failed to make any payment to KRDCL within the period specified in the DHRTL Concession Agreement; and
- a change in ownership has occurred in breach of the DHRTL Concession Agreement.

Upon occurrence of a DHRTL Default, KRDCL shall be entitled to terminate the DHRTL Concession Agreement by issuing a termination notice to DHRTL; provided that before issuing the termination notice, KRDCL shall by a notice inform DHRTL of its intention to issue such termination notice and grant 15 days to DHRTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DHRTL Default: Upon termination on account of DHRTL Default, KRDCL will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for KRDCL Default: DHRTL may terminate the DHRTL Concession Agreement on account of occurrence of a default by the KRDCL which is not rectified within cure periods (the "**KRDCL Default**") and includes – (i) material breach causing a material adverse effect on DHRTL; (ii) the failure to make any payment due to DHRTL; (iii) repudiation of the DHRTL Concession Agreement etc.

Termination Payment for KRDCL Default: Upon termination on account of KRDCL Default, KRDCL will pay an amount equal to (i) debt due, less the insurance claims; and (ii) 120% of the adjusted equity.

Defects liability after termination: DHRTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DHRTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DHRTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by KRDCL, KRDCL shall be entitled to get the same repaired or rectified at the risk and cost of DHRTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by KRDCL in this regard shall be reimbursed by DHRTL to KRDCL within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, KRDCL shall be entitled to recover the same in accordance with the provisions of the DHRTL Concession Agreement.

The DBL Mundargi Harapanahalli Tollways Limited ("DMHTL") Concession Agreement ("DMHTL Concession Agreement")

Annuity: DMHTL shall receive, upon achieving commercial operation date and in consideration of accepting the concession and undertaking to perform and discharge its obligations in accordance with the terms, conditions and covenants set forth in the DMHTL Concession Agreement, for each annuity payment period, on each annuity payment date, the sum of ₹ 177.3 million.

Fee: DMHTL shall not levy, demand or collect from or in respect of any user, vehicle or person, for the use of project facilities, any sum whatsoever in the nature of a toll or fee. KRDCL shall have the right and authority to levy toll or fee on the users and vehicles using the project facilities ("**Fee**") and to demand, collect, retain and appropriate the Fee in accordance with the applicable laws.

Concession fee: In consideration of the grant of concession under the DMHTL Concession Agreement, the concession fee payable by DMHTL to KRDCL shall be ₹ 1.00 per year during the term of the DMHTL Concession Agreement.

Performance security: DMHTL shall, for the performance of its obligations under the DMHTL Concession Agreement, during the Construction Period, as defined in the DMHTL Concession Agreement, provide to KRDCL no later than 120 days from the date of the DMHTL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 102.6 million in the form set forth in the DMHTL Concession Agreement.

Change of scope: KRDCL may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DMHTL Concession Agreement (the "**Change of Scope**"). KRDCL shall make an advance payment to DMHTL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DMHTL Concession Agreement. KRDCL shall disburse to DMHTL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. All costs arising out of any Change of Scope order issued during the Construction Period, as defined in the DMHTL Concession Agreement, shall be borne by DMHTL, subject to an aggregate ceiling of 0.25% of the total project cost. Any costs in excess of the ceiling shall be reimbursed by KRDCL.

O&M: DMHTL shall operate and maintain the Project Highway, as defined in the DMHTL Concession Agreement, in accordance with the DMHTL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DMHTL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DMHTL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- allowing authority or authority contractor in collecting and appropriating the Fee;
- minimising disruption to traffic in the event of accidents or other incidents affecting the safety and use of the Project Highway by providing a rapid and effective response and maintaining liaison with emergency services of the state;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- preventing, with the assistance of concerned law enforcement agencies, any unauthorised use of the Project Highway;
- preventing, with the assistance of concerned law enforcement agencies, any encroachments on the Project Highway;
- protection of the environment and provision of equipment and materials therefor;
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway;
- maintaining a public relations unit to interface with and attend to suggestions from the Users, government agencies, media and other agencies; and
- complying with safety requirements in accordance with the DMHTL Concession Agreement.

Maintenance manual: DMHTL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DMHTL shall provide to KRDCL and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DMHTL shall carry out periodic maintenance;

- arrangements and procedures for carrying out safety related measures;
- intervals for major maintenance works and the scope thereof; and
- lane closure schedule for each type of maintenance (length and time).

Reduction in annuity on account of delayed project completion: In case DMHTL achieves commercial operation date after the scheduled date, as provided in the DMHTL Concession Agreement, then it shall be liable for reduction in its first annuity for delayed completion.

Obligations relating to change in ownership:

- Subject to the next clause, in the case of DMHTL that has been set up by a joint venture, the key joint venture member shall, until the end of concession period, maintain an equity share capital not less than 26% of the subscribed and paid-up equity of DMHTL and 5% of the total project cost.
- Any key joint venture member, other than the lead member, may, with the prior written approval of the KRDCL, which shall not be unreasonably withheld, reduce its shareholding to below 26% of the subscribed and paid-up equity share capital of DMHTL and less than 5 % of the total project cost, after the date falling two years after the commercial operation date, subject to:
  - all joint venture members continuing to collectively hold at least 26% of the subscribed and paid-up equity of DMHTL until the end of concession period; and
  - the joint venture member who is to provide the O&M experience according to the application submitted by the joint venture shall subscribe and continue to hold at least 5% of the subscribed and paid up equity of DMHTL until the end of concession period.

Escrow Account: As per the escrow agreement entered into between KRDCL, the Lenders' Representative & the escrow bank (the "DMHTL Escrow Agreement") all funds including the disbursements by Senior Lenders, Project related Fees & revenues, payments by KRDCL etc is to be deposited into the escrow account opened with escrow bank. The DMHTL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after the termination of the DMHTL Concession Agreement.

- <u>During concession period</u>: (i) all taxes due and payable by DMHTL for and in respect of the Project; (ii) Concession Fee and other dues payable to KRDCL; (iii) monthly proportionate provision of Debt Service due in an Accounting Year; (iv) all payments relating to construction of the Project; (v) O&M Expenses; (vi) O&M Expenses and other costs and expenses incurred by KRDCL; (vii) Debt service payment in respect of Subordinated Debt; (viii) Any reserve requirements as set forth in the Financing Agreements; and damages to KRDCL under the Concession Agreement;
- <u>On termination</u>: (i) all taxes due and payable by DMHTL for and in respect of the Project; (ii) Debt Due (excluding Subordinate Debt); (iii) Outstanding Concession Fee; (iv) all payments and damages to KRDCL under the Concession Agreement; (iv) retention monies (on account of liabilities for defects); (v) outstanding Debt Service (including balance of Debt Due); (vi) outstanding Subordinate Debt; (vii) incurred or accrued O&M Expenses; (viii); other payments under the Concession Agreement.

Indemnities:

- DMHTL shall indemnify, defend, save and hold harmless KRDCL and its officers, servants, agents, Government Instrumentalities, as defined in the DMHTL Concession Agreement, and Government owned and/or controlled entities/enterprises, (the "**KRDCL Indemnified Persons**") against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DMHTL of any of its obligations under the DMHTL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DMHTL to any user or from any negligence of DMHTL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DMHTL Concession Agreement on the part of KRDCL Indemnified Persons;
- DMHTL shall fully indemnify, hold harmless and defend KRDCL and KRDCL Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DMHTL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DMHTL in respect of the income or other taxes of DMHTL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DMHTL or any of its contractors which are payable by DMHTL or any of its contractors.
- DMHTL shall fully indemnify, hold harmless and defend KRDCL Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which KRDCL Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings

arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DMHTL or by DMHTL's contractors in performing the obligations of DMHTL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DMHTL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DMHTL shall promptly make every reasonable effort to secure for KRDCL a licence, at no cost to KRDCL, authorising continued use of the infringing work. If DMHTL is unable to secure such licence within a reasonable time, DMHTL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DMHTL's right:

Upon occurrence of a DMHTL Default, KRDCL shall be entitled, without prejudice to its other rights and remedies under the DMHTL Concession Agreement including its rights of termination hereunder, to (i) suspend all rights of DMHTL under the DMHTL Concession Agreement including the DMHTL's right to receive annuity and other revenues pursuant hereto, and (ii) exercise such rights itself or authorise any other person to exercise the same on its behalf during such suspension ("**Suspension**"). Suspension hereunder shall be effective forthwith upon issue of notice by KRDCL to DMHTL and copied to the Independent Engineer, as defined in the DMHTL Concession Agreement, setting out the applicable DMHTL Default, and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DMHTL and the Lenders' Representative, as defined in the DMHTL Concession Agreement, KRDCL shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, as defined in the DMHTL Concession Agreement, shall be entitled to substitute DMHTL under and in accordance with the Substitution Agreement, as defined in the DMHTL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, KRDCL shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, the period for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- Upon the occurrence of any Force Majeure Event after the Appointed Date but before COD, the concession period and the dates set forth in the Project Completion Schedule shall, as defined in the DMHTL Concession Agreement, be extended by a period equal in length to the duration for which such Force Majeure Event subsists.
- It has been agreed that no extension in concession period shall be granted in case of Force Majeure Event occurs after the COD.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DMHTL Concession Agreement shall bear their respective costs and no party shall be required to pay to theother party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
    - upon occurrence of a Non-Political Event, as defined in the DMHTL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof; provided that the DMHTL's liability in such a case would be limited to the damages of the physical assets like plant and machinery owned by it.
    - upon occurrence of an Indirect Political Event, as defined in the DMHTL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DMHTL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by KRDCL to DMHTL; and
    - upon occurrence of a Political Event, as defined in the DMHTL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by KRDCL to DMHTL.

Force Majeure Costs may include interest payments on debt, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include loss on account of damages under the DMHTL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DMHTL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DMHTL Default: Subject to the provisions of the DMHTL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DMHTL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 (sixty) days, DMHTL shall be deemed to be in default of the DMHTL Concession Agreement (the "**DMHTL Default**"), unless the default has occurred solely as a result of any breach of the DMHTL Concession Agreement by KRDCL or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DMHTL Concession Agreement and DMHTL fails to replenish or provide fresh Performance Security within a cure period of 30 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DMHTL Concession Agreement, DMHTL fails to cure, within a cure period of 90 days, the DMHTL Default for which whole or part of the Performance Security was appropriated;
- DMHTL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DMHTL Concession Agreement and continues to be in default for 90 days;
- upon occurrence of a Financial Default, as defined in the DMHTL Concession Agreement, the Lenders' Representative has by notice required KRCDL to undertake Suspension in accordance with the Substitution Agreement and DMHTL fails to cure the default within the cure period specified in the Substitution Agreement;
- DMHTL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of KRDCL;
- DMHTL is in breach of the maintenance requirements or health, environment and safety requirements, as the case may be;
- DMHTL has failed to make any material payment to KRDCL within the period specified in the DMHTL Concession Agreement; and
- a change of ownership has occurred in breach of the DMHTL Concession Agreement.

Upon occurrence of a DMHTL Default, KRDCL shall be entitled to terminate the DMHTL Concession Agreement by issuing a termination notice to DMHTL; provided that before issuing the termination notice, KRDCL shall by a notice inform DMHTL of its intention to issue such termination notice and grant 15 days to DMHTL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DMHTL Default: Upon termination on account of DMHTL Default, KRDCL will pay an amount equal to 90.00% of the debt due, less insurance claims.

Termination for KRDCL Default: DMHTL may terminate the DMHTL Concession Agreement on account of occurrence of a default by the KRDCL which is not rectified within cure periods (the "**KRDCL Default**") and includes – (i) material breach causing a material adverse effect on DMHTL; (ii) the failure to make any payment due to DMHTL; (iii) repudiation of the DMHTL Concession Agreement etc.

Termination Payment for KRDCL Default: Upon termination on account of KRDCL Default, KRDCL will pay an amount equal to (i) debt due less insurance claims; and (ii) 120% of the adjusted equity.

Defects liability after termination: DMHTL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DMHTL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DMHTL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by KRDCL, KRDCL shall be entitled to get the same repaired or rectified at the risk and cost of DMHTL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by KRDCL in this regard shall be reimbursed by DMHTL to KRDCL within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, KRDCL shall be entitled to recover the same in accordance with the provisions of the DMHTL Concession Agreement.

- ***NHAI HAM Projects***

The DBL Mahagaon Yavatmal Highways Private Limited ("DMYHPL") Concession Agreement ("DMYHPL Concession Agreement")

Bid project cost: The parties to the DMYHPL Concession Agreement expressly agree that the cost of construction of the project, as provided in the DMYHPL Concession Agreement, shall be deemed to be ₹ 11,606.4 million ("**Bid Project Cost**"). The Bid Project Cost for payment to DMYHPL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DMYHPL in accordance with the provisions of the DMYHPL Concession Agreement. The Bid Project Cost represents the amount due and payable by NHAI to DMYHPL and may be less than, equal to, or more than the estimated project cost.

Performance security: DMYHPL shall, for the performance of its obligations under the DMYHPL Concession Agreement, provide to NHAI no later than 30 days from the date of the DMYHPL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 580.4 million in the form set forth in the DMYHPL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DMYHPL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to DMYHPL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DMYHPL Concession Agreement. NHAI shall disburse to DMYHPL such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made. DMYHPL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DMYHPL shall operate and maintain the Project Highway, as defined in the DMYHPL Concession Agreement, in accordance with the DMYHPL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DMYHPL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DMYHPL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DMYHPL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DMYHPL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DMYHPL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and

- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DMYHPL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the DMYHPL Concession Agreement, DMYHPL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 25% of the total equity of DMYHPL; or
- acquisition of any control directly or indirectly of the board of directors of DMYHPL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on DMYHPL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DMYHPL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DMYHPL from any liability or obligation under the DMYHPL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative and the escrow bank (the "**DMYHPL Escrow Agreement**") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by NHAI etc is to be deposited into the escrow account. The DMYHPL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DMYHPL Concession Agreement:

- <u>During Concession Period</u>: (i) all taxes due and payable by DMYHPL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) any amount dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- <u>On termination</u>: (i) all taxes due and payable by DMYHPL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to NHAI; (iv) all payments and damages to NHAI under the Concession Agreement (as self-certified by NHAI); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DMYHPL Concession Agreement.

Indemnities:

- DMYHPL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, Government Instrumentalities, as defined in the DMYHPL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**NHAI Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DMYHPL of any of its obligations under the DMYHPL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DMYHPL to any user, or from any negligence of DMYHPL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DMYHPL Concession Agreement on the part of NHAI Indemnified Persons;
- DMYHPL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DMYHPL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DMYHPL in respect of the income or other taxes of DMYHPL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DMYHPL or any of its contractors which are payable by DMYHPL or any of its contractors.
- DMYHPL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by

DMYHPL or by DMYHPL's contractors in performing the obligations of DMYHPL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DMYHPL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DMYHPL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If DMYHPL is unable to secure such licence within a reasonable time, DMYHPL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DMYHPL's rights: Upon occurrence of a DMYHPL Default, as defined below, NHAI shall be entitled, without prejudice to its other rights and remedies under the DMYHPL Concession Agreement including its rights of termination thereunder, to (a) suspend all rights of DMYHPL under the DMYHPL Concession Agreement, and pursuant thereto, and (b) exercise such rights itself and perform the obligations hereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension hereunder shall be effective forthwith upon issue of notice by NHAI to DMYHPL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DMYHPL and the Lenders' Representative, as defined in the DMYHPL Concession Agreement, NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DMYHPL Concession Agreement, shall be entitled to substitute DMYHPL under and in accordance with the Substitution Agreement, as defined in the DMYHPL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the Concession:

- Upon the occurrence of any Force Majeure Event, as defined in the DMYHPL Concession Agreement, prior to the Appointed Date, as defined in the DMYHPL Concession Agreement, the period set forth for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined in the DMYHPL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - After COD, DMYHPL shall be entitled to receive annuity payments plus interest due and payable under the DMYHPL Concession Agreement.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DMYHPL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the Project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DMYHPL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DMYHPL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DMYHPL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to DMYHPL; and
  - upon occurrence of a Political Event, as defined in the DMYHPL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to DMYHPL.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost

of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DMYHPL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DMYHPL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DMYHPL Default: Subject to the provisions of the DMYHPL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DMYHPL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DMYHPL shall be deemed to be in default of the DMYHPL Concession Agreement (the "**DMYHPL Default**"), unless the default has occurred solely as a result of any breach of the DMYHPL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DMYHPL Concession Agreement and DMYHPL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DMYHPL Concession Agreement, DMYHPL fails to meet any condition precedent or cure the DMYHPL Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;
- DMYHPL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DMYHPL Concession Agreement and continues to be in default for 120 days;
- DMYHPL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- upon occurrence of a Financial Default, as defined in the DMYHPL Concession Agreement, the Lenders' Representative, as defined in the DMYHPL Concession Agreement, has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DMYHPL fails to cure the default within the cure period specified;
- DMYHPL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DMYHPL has failed to make any payment to NHAI within the period specified in the DMYHPL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DMYHPL Concession Agreement.

Upon occurrence of a DMYHPL Default, NHAI shall be entitled to terminate the DMYHPL Concession Agreement by issuing a termination notice to DMYHPL; provided that before issuing the termination notice, NHAI shall by a notice inform DMYHPL of its intention to issue such termination notice and grant 15 days to DMYHPL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DMYHPL Default: Upon termination on account of a DMYHPL Default, NHAI will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DMYHPL Default during the construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	**Basis of calculation for termination payment ****
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for NHAI Default: DMYHPL may terminate the DMYHPL Concession Agreement which is not rectified within cure periods (the "**NHAI Default**") and includes: (i) material default having a Material Adverse Effect on the DMYHPL; (ii) failure to make any payment due to DMYHPL; (iii) repudiation of the DMYHPL Concession Agreement.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay DMYHPL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by NHAI to the DMYHPL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	Basis of calculation for termination payment **
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DMYHPL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DMYHPL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DMYHPL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of DMYHPL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by DMYHPL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the DMYHPL Concession Agreement.

The DBL Tuljapur Ausa Highways Limited Concession Agreement ("DTAHL Concession Agreement")

Bid project cost: The parties to the DTAHL Concession Agreement expressly agree that the cost of construction of the project, as on the bid date, as provided in the DTAHL Concession Agreement, shall be deemed to be ₹ 9,110.7 million (the "**Bid Project Cost**"). The Bid Project Cost for payment to DTAHL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DTAHL in accordance with the provisions of the DTAHL Concession Agreement. The Bid Project Cost represents the amount due and payable by NHAI to DTAHL and may be less than, equal to, or more than the estimated project cost.

Performance security: DTAHL shall, for the performance of its obligations under the DTAHL Concession Agreement, provide to NHAI no later than 30 days from the date of the DTAHL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 455.6 million in the form set forth in the DTAHL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DTAHL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to DTAHL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DTAHL Concession Agreement. NHAI shall disburse to DTAHL such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made. DTAHL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DTAHL shall operate and maintain the Project Highway, as defined in the DTAHL Concession Agreement, in accordance with the DTAHL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DTAHL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DTAHL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DTAHL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DTAHL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DTAHL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DTAHL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the DTAHL Concession Agreement, DTAHL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 25% of the total equity of DTAHL; or
- acquisition of any control directly or indirectly of the board of directors of DTAHL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on DTAHL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DTAHL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DTAHL from any liability or obligation under the DTAHL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative and the escrow bank (the "**DTAHL Escrow Agreement**") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by NHAI etc is to be deposited into the escrow account. The DTAHL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DTAHL Concession Agreement:

- <u>During Concession Period</u>: (i) all taxes due and payable by DTAHL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) any amount dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- <u>On termination</u>: (i) all taxes due and payable by DTAHL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to NHAI; (iv) all payments and damages to NHAI under the Concession Agreement (as self-certified by NHAI); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DTAHL Concession Agreement.

Indemnities:

- DTAHL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents,

Government Instrumentalities, as defined in the DTAHL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**NHAI Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DTAHL of any of its obligations under the DTAHL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DTAHL to any user, or from any negligence of DTAHL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DTAHL Concession Agreement on the part of NHAI Indemnified Persons;

- DTAHL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DTAHL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DTAHL in respect of the income or other taxes of DTAHL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DTAHL or any of its contractors which are payable by DTAHL or any of its contractors.
- DTAHL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DTAHL or by DTAHL's contractors in performing the obligations of DTAHL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DTAHL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DTAHL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If DTAHL is unable to secure such licence within a reasonable time, DTAHL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DTAHL rights: Upon occurrence of a DTAHL Default, NHAI shall be entitled, without prejudice to its other rights and remedies under the DTAHL Concession Agreement including its rights of termination thereunder, to (a) suspend all rights of DTAHL under the DTAHL Concession Agreement, and pursuant thereto, and (b) exercise such rights itself and perform the obligations hereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension thereunder shall be effective forthwith upon issue of notice by NHAI to DTAHL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DTAHL and the Lenders' Representative, as defined in the DTAHL Concession Agreement, NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, as defined in the DTAHL Concession Agreement, shall be entitled to substitute DTAHL under and in accordance with the Substitution Agreement, as defined in the DTAHL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, each term as defined in as defined in the DTAHL Concession Agreement, the period for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined in the DTAHL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, DTAHL shall be entitled to receive annuity payments plus interest due and payable under the DTAHL Concession Agreement.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DTAHL Concession Agreement, shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined the DTAHL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined the DTAHL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DTAHL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to DTAHL; and
  - Upon occurrence of a Political Event, as defined the DTAHL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to DTAHL.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DTAHL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DTAHL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DTAHL Default: Subject to the provisions of the DTAHL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DTAHL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DTAHL shall be deemed to be in default of the DTAHL Concession Agreement (the "**DTAHL Default**"), unless the default has occurred solely as a result of any breach of the DTAHL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DTAHL Concession Agreement and DTAHL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DTAHL Concession Agreement, DTAHL fails to meet any condition precedent or cure the DTAHL Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;
- DTAHL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DTAHL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DTAHL Concession Agreement, the Lenders' Representative has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DTAHL fails to cure the default within the cure period specified;
- DTAHL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- DTAHL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DTAHL has failed to make any payment to NHAI within the period specified in the DTAHL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DTAHL Concession Agreement.

Upon occurrence of a DTAHL Default, NHAI shall be entitled to terminate the DTAHL Concession Agreement by issuing a termination notice to DTAHL; provided that before issuing the termination notice, NHAI shall by a notice inform DTAHL of its intention to issue such termination notice and grant 15 days to DTAHL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DTAHL Default: Upon termination on account of a DTAHL Default, NHAI will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DTAHL Default during the

construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	Basis of calculation for termination payment **
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for NHAI Default: DTAHL may terminate the DTAHL Concession Agreement which is not rectified within cure periods (the "**NHAI Default**") and includes: (i) material default having a Material Adverse Effect on the DTAHL; (ii) failure to make any payment due to DTAHL; (iii) repudiation of the DTAHL Concession Agreement.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay DTAHL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by NHAI to the DTAHL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	Basis of calculation for termination payment **
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DTAHL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DTAHL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DTAHL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of DTAHL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by DTAHL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the DTAHL Concession Agreement.

The DBL Wardha Butibori Highways Private Limited Concession Agreement ("DWBHPL Concession Agreement")

Bid project cost: The parties to the DWBHPL Concession Agreement expressly agree that the cost of construction of the project, as on the bid date, as provided in the DWBHPL Concession Agreement, shall be deemed to be ₹ 10,655.1 million (the "**Bid Project Cost**"). The Bid Project Cost for payment to DWBHPL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DWBHPL in accordance with the provisions of the DWBHPL Concession Agreement. The Bid Project Cost represents the amount due and payable by NHAI to DWBHPL and may be less than, equal to, or more than the estimated project cost.

Performance security: DWBHPL shall, for the performance of its obligations under the DWBHPL Concession Agreement, provide to NHAI no later than 30 days from the date of the DWBHPL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 532.8 million in the form set forth in the DWBHPL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DWBHPL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to DWBHPL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DWBHPL Concession Agreement. NHAI shall disburse to DWBHPL such amounts as are certified by the Independent Engineer, as reasonable and after making a proportionate deduction for the advance payment made. DWBHPL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DWBHPL shall operate and maintain the Project Highway, as defined in the DWBHPL Concession Agreement, in accordance with the DWBHPL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DWBHPL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DWBHPL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DWBHPL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DWBHPL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DWBHPL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DWBHPL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the DWBHPL Concession Agreement, DWBHPL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 25% of the total equity of DWBHPL; or
- acquisition of any control directly or indirectly of the board of directors of DWBHPL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on DWBHPL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DWBHPL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DWBHPL from any liability or obligation under the DWBHPL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative and the escrow bank (the "DWBHPL Escrow Agreement") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by NHAI etc is to be deposited into the escrow account. The DWBHPL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DWBHPL Concession Agreement:

- During Concession Period: (i) all taxes due and payable by DWBHPL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) any amount dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- On termination: (i) all taxes due and payable by DWBHPL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to NHAI; (iv) all payments and damages to NHAI under the Concession Agreement (as self-certified by NHAI); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DWBHPL Concession Agreement.

Indemnities:

- DWBHPL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, Government Instrumentalities, as defined in the DWBHPL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**NHAI Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DWBHPL of any of its obligations under the DWBHPL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DWBHPL to any user, or from any negligence of DWBHPL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DWBHPL Concession Agreement on the part of NHAI Indemnified Persons;
- DWBHPL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DWBHPL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DWBHPL in respect of the income or other taxes of DWBHPL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DWBHPL or any of its contractors which are payable by DWBHPL or any of its contractors.
- DWBHPL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DWBHPL or by DWBHPL's contractors in performing the obligations of DWBHPL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DWBHPL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DWBHPL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If DWBHPL is unable to secure such licence within a reasonable time, DWBHPL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DWBHPL's rights: Upon occurrence of a DWBHPL Default, NHAI shall be entitled, without prejudice to its other rights and remedies under the DWBHPL Concession Agreement including its rights of termination thereunder, to (a) suspend all rights of DWBHPL under the DWBHPL Concession Agreement, and pursuant thereto, and (b) exercise such rights itself and perform the obligations hereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension thereunder shall be effective forthwith upon issue of notice by NHAI to DWBHPL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DWBHPL and the Lenders' Representative, as defined in the DWBHPL Concession Agreement, NHAI shall extend the aforesaid period of 180

days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, as defined in the DWBHPL Concession Agreement, shall be entitled to substitute DWBPHL under and in accordance with the Substitution Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, as defined in the DWBHPL Concession Agreement, the period set forth for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined in the DWBHPL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, DWBHPL shall be entitled to receive annuity payments plus interest due and payable under the DWBHPL Concession Agreement.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

Allocation of costs arising out of Force Majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DWBHPL Concession Agreement, shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined by the DWBHPL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined by the DWBHPL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DWBHPL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to DWBHPL; and
  - Upon occurrence of a Political Event, as defined by the DWBHPL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to DWBHPL.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DWBHPL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DWBHPL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DWBHPL Default: Save as otherwise provided in the DWBHPL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DWBHPL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DWBHPL shall be deemed to be in default of the DWBHPL Concession Agreement (the "**DWBHPL Default**"), unless the default has occurred solely as a result of any breach of the DWBHPL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DWBHPL Concession Agreement and DWBHPL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DWBHPL Concession Agreement, DWBHPL fails to meet any condition precedent or cure the DWBHPL Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;
- DWBHPL does not achieve the latest outstanding project milestone due in accordance with the provisions

of the DWBHPL Concession Agreement and continues to be in default for 120 days;

- upon occurrence of a Financial Default, as defined in the DWBHPL Concession Agreement, the Lenders' Representative has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DWBHPL fails to cure the default within the cure period specified hereinabove;
- DWBHPL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- DWBHPL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DWBHPL has failed to make any payment to NHAI within the period specified in the DWBHPL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DWBHPL Concession Agreement.

Upon occurrence of a DWBHPL Default, NHAI shall be entitled to terminate the DWBHPL Concession Agreement by issuing a termination notice to DWBHPL; provided that before issuing the termination notice, NHAI shall by a notice inform DWBHPL of its intention to issue such termination notice and grant 15 days to DWBHPL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

NHAI will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DWBHPL Default during the construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	**Basis of calculation for termination payment ****
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for NHAI Default: DWBHPL may terminate the DWBHPL Concession Agreement which is not rectified within cure periods (the "**NHAI Default**") and includes: (i) material default having a Material Adverse Effect on the DWBHPL; (ii) failure to make any payment due to DWBHPL; (iii) repudiation of the DWBHPL Concession Agreement.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay DWBHPL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by NHAI to the DWBHPL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	**Basis of calculation for termination payment ****
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DWBHPL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DWBHPL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DWBHPL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of DWBHPL so as to make the Project Highway conform to the

maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by DWBHPL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the DWBHPL Concession Agreement.

The DBL Yavatmal Wardha Highways Private Limited ("DYWHPL") Concession Agreement ("DYWHPL Concession Agreement")

Bid project cost: The parties to the DYWHPL Concession Agreement expressly agree that the cost of construction of the project, as on the bid date, as provided in the DYWHPL Concession Agreement, shall be deemed to be ₹ 10,432.8 million (the "**Bid Project Cost**"). The Bid Project Cost for payment to DYWHPL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DYWHPL in accordance with the provisions of the DYWHPL Concession Agreement. The Bid Project Cost represents the amount due and payable by NHAI to DYWHPL and may be less than, equal to, or more than the estimated project cost.

Performance security: DYWHPL shall, for the performance of its obligations under the DYWHPL Concession Agreement, provide to NHAI no later than 30 days from the date of the DYWHPL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 521.7 million in the form set forth in the DYWHPL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DYWHPL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to DYWHPL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DYWHPL Concession Agreement. NHAI shall disburse to DYWHPL such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made. DYWHPL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DYWHPL shall operate and maintain the Project Highway, as defined in the DYWHPL Concession Agreement, in accordance with the DYWHPL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DYWHPL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DYWHPL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- carrying out periodic preventive maintenance of the Project Highway;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DYWHPL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DYWHPL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;

- intervals at which DYWHPL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DYWHPL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the DYWHPL Concession Agreement, DYWHPL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 25% of the total equity of DYWHPL; or
- acquisition of any control directly or indirectly of the board of directors of DYWHPL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on DYWHPL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DYWHPL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DYWHPL from any liability or obligation under the DYWHPL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative and the escrow bank (the "DYWHPL Escrow Agreement") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by NHAI etc is to be deposited into the escrow account. The DYWHPL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DYWHPL Concession Agreement:

- <u>During Concession Period</u>: (i) all taxes due and payable by DYWHPL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) any amount dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- <u>On termination</u>: (i) all taxes due and payable by DYWHPL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to NHAI; (iv) all payments and damages to NHAI under the Concession Agreement (as self-certified by NHAI); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DYWHPL Concession Agreement.

Indemnities:

- DYWHPL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, Government Instrumentalities, as defined in the DYWHPL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**NHAI Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DYWHPL of any of its obligations under the DYWHPL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DYWHPL to any user or from any negligence of DYWHPL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DYWHPL Concession Agreement on the part of NHAI Indemnified Persons;
- DYWHPL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DYWHPL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DYWHPL in respect of the income or other taxes of DYWHPL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DYWHPL or any of its contractors which are payable by DYWHPL or any of its contractors.
- DYWHPL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of

claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DYWHPL or by DYWHPL's contractors in performing the obligations of DYWHPL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DYWHPL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DYWHPL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If DYWHPL is unable to secure such licence within a reasonable time, DYWHPL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DYWHPL rights: Upon occurrence of a DYWHPL Default, NHAI shall be entitled, without prejudice to its other rights and remedies under the DYWHPL Concession Agreement, including its rights of termination thereunder, to (a) suspend all rights of YDWHPL under the DYWHPL Concession Agreement, and pursuant thereto, and (b) exercise such rights itself and perform the obligations thereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension hereunder shall be effective forthwith upon issue of notice by NHAI to DYWHPL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DYWHPL and the Lenders' Representative, as defined in the DYWHPL Concession Agreement, NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, as defined in the DYWHPL Concession Agreement, shall be entitled to substitute DYWHPL under and in accordance with the Substitution Agreement, as defined in the DYWHPL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, as defined in the DYWHPL Concession Agreement, the period for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined in the DYWHPL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, DWYHPL shall be entitled to receive annuity payments plus interest due and payable under the DYWHPL Concession Agreement.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DYWHPL Concession Agreement, shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DYWHPL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DYWHPL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DYWHPL to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to DYWHPL; and
  - Upon occurrence of a Political Event, as defined in the DYWHPL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by NHAI to DYWHPL.

Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DYWHPL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DYWHPL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DYWHPL Default: Subject to the provisions of the DYWHPL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DYWHPL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DYWHPL shall be deemed to be in default of the DYWHPL Concession Agreement (the "**DYWHPL Default**"), unless the default has occurred solely as a result of any breach of the DYWHPL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DYWHPL Concession Agreement and DYWHPL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DYWHPL Concession Agreement, DYWHPL fails to meet any condition precedent or cure the DYWHPL Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;
- DYWHPL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DYWHPL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DYWHPL Concession Agreement, the Lenders' Representative has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DYWHPL fails to cure the default within the cure period specified;
- DYWHPL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- DYWHPL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DYWHPL has failed to make any payment to NHAI within the period specified in the DYWHPL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DYWHPL Concession Agreement.

Upon occurrence of a DYWHPL Default, NHAI shall be entitled to terminate the DYWHPL Concession Agreement by issuing a termination notice to DYWHPL; provided that before issuing the termination notice, NHAI shall by a notice inform DYWHPL of its intention to issue such termination notice and grant 15 days to DYWHPL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DYWHPL Default: Upon termination on account of a DYWHPL Default, NHAI will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DYWHPL Default during the construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	**Basis of calculation for termination payment ****
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for NHAI Default: DYWHPL may terminate the DYWHPL Concession Agreement which is not rectified within cure periods (the "**NHAI Default**") and includes: (i) material default having a Material Adverse Effect on the DYWHPL; (ii) failure to make any payment due to DYWHPL; (iii) repudiation of the DYWHPL Concession Agreement.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay DYWHPL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by NHAI to the DYWHPL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	Basis of calculation for termination payment **
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DYWHPL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DYWHPL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DYWHPL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of DYWHPL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by DYWHPL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the DYWHPL Concession Agreement.

The DBL Lucknow Sultanpur Highways Limited ("DLSHL") Concession Agreement ("DLSHL Concession Agreement")

Bid project cost: The parties to the DLSHL Concession Agreement expressly agree that the cost of construction of the project, as on the bid date, as provided in the DLSHL Concession Agreement, shall be deemed to be ₹ 20,160 million ("**Bid Project Cost**"). The Bid Project Cost for payment to DLSHL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DLSHL in accordance with the provisions of the DLSHL Concession Agreement. The Bid Project Cost represents the amount due and payable by NHAI to DLSHL and may be less than, equal to, or more than the estimated project cost.

Performance security: DLSHL shall, for the performance of its obligations under the DLSHL Concession Agreement, provide to NHAI no later than 30 days from the date of the DLSHL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 1,008 million in the form set forth in the DLSHL Concession Agreement.

Change of scope: NHAI may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DLSHL Concession Agreement (the "**Change of Scope**"). NHAI shall make an advance payment to DLSHL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DLSHL Concession Agreement. NHAI shall disburse to DLSHL such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made. DLSHL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DLSHL shall operate and maintain the Project Highway, as defined in the DLSHL Concession Agreement, in accordance with the DLSHL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DLSHL Concession Agreement, and if required, modify, repair or otherwise make improvements to the Project Highway, and conform to specifications, standards and good industry practice. The obligations of DLSHL, among other things, shall include:

- permitting safe, smooth and uninterrupted flow of traffic on the Project Highway during normal operating conditions;
- carrying out periodic preventive maintenance of the Project Highway;

- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- protection of the environment and provision of equipment and materials therefor; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway.

Maintenance manual: DLSHL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project Highway in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance programme: DLSHL shall provide to NHAI and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Programme**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Programme shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the Project Highway;
- intervals at which DLSHL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DLSHL shall not undertake or permit any change in ownership, except with the prior written approval of NHAI. Notwithstanding anything to the contrary contained in the DLSHL Concession Agreement, DLSHL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of not less than 25% of the total equity of DLSHL; or
- acquisition of any control directly or indirectly of the board of directors of DLSHL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of NHAI from national security and public interest perspective, the decision of NHAI in this behalf being final, conclusive and binding on DLSHL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DLSHL without such prior approval of NHAI. It has been expressly agreed that approval of NHAI hereunder shall be limited to national security and public interest perspective, and NHAI shall endeavour to convey its decision thereon expeditiously. It has also been agreed that NHAI shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DLSHL from any liability or obligation under the DLSHL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between NHAI, the Lenders' Representative and the escrow bank (the "DLSHL Escrow Agreement") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by NHAI etc is to be deposited into the escrow account. The DLSHL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DLSHL Concession Agreement:

- <u>During Concession Period</u>: (i) all taxes due and payable by DLSHL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by NHAI; (v) any amount dues payable to NHAI; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to NHAI under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- <u>On termination</u>: (i) all taxes due and payable by DLSHL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to NHAI; (iv) all payments and damages to NHAI under the Concession Agreement (as self-certified by NHAI); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DLSHL Concession Agreement.

Indemnities:

- DLSHL shall indemnify, defend, save and hold harmless NHAI and its officers, servants, agents, Government Instrumentalities, as defined in the DLSHL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**Authority Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DLSHL of any of its obligations under the DLSHL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DLSHL to any user, or from any negligence of DLSHL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DLSHL Concession Agreement on the part of NHAI Indemnified Persons;
- DLSHL shall fully indemnify, hold harmless and defend NHAI and NHAI Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DLSHL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DLSHL in respect of the income or other taxes of DLSHL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DLSHL or any of its contractors which are payable by DLSHL or any of its contractors.
- DLSHL shall fully indemnify, hold harmless and defend NHAI Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which NHAI Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DLSHL or by DLSHL's contractors in performing the obligations of DLSHL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DLSHL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the Project Highway, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DLSHL shall promptly make every reasonable effort to secure for NHAI a licence, at no cost to NHAI, authorising continued use of the infringing work. If DLSHL is unable to secure such licence within a reasonable time, DLSHL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DLSHL rights: Upon occurrence of a DLSHL Default, as defined below, NHAI shall be entitled, without prejudice to its other rights and remedies under the DLSHL Concession Agreement including its rights of termination thereunder, to (a) suspend all rights of NHAI under the DLSHL Concession Agreement, and pursuant thereto, and (b) exercise such rights itself and perform the obligations hereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension thereunder shall be effective forthwith upon issue of notice by NHAI to DLSHL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DLSHL and the Lenders' Representative, as defined in the DLSHL Concession Agreement, NHAI shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, as defined in the DLSHL Concession Agreement, shall be entitled to substitute DLSHL under and in accordance with the Substitution Agreement, as defined in the DLSHL Concession Agreement, and upon receipt of notice thereunder from the Lenders' Representative, NHAI shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of force majeure event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, each term as defined in the DLSHL Concession Agreement, the period for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined in the DLSHL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - after COD, DLSHL shall be entitled to receive annuity payments plus interest due and payable under the DLSHL Concession Agreement.

Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of NHAI, if any.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DLSHL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the Project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DLSHL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party any costs thereof;
  - upon occurrence of an Indirect Political Event, as defined in the DLSHL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by NHAI, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by NHAI to DLSHL; and
  - upon occurrence of a Political Event, as defined in the DLSHL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by the NHAI to DLSHL.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DLSHL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DLSHL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DLSHL Default: Subject to the provisions of the DLSHL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DLSHL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DLSHL shall be deemed to be in default of the DLSHL Concession Agreement (the "**DLSHL Default**"), unless the default has occurred solely as a result of any breach of the DLSHL Concession Agreement by NHAI or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DLSHL Concession Agreement and DLSHL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DLSHL Concession Agreement, DLSHL fails to meet any condition precedent or cure the DLSHL Default, as the case may be, for which whole or part of the Performance Security was appropriated, within a cure period of 120 days;
- DLSHL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DLSHL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, as defined in the DLSHL Concession Agreement, the Lenders' Representative has by notice required NHAI to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement and DLSHL fails to cure the default within the cure period specified;
- DLSHL abandons or manifests intention to abandon the construction or operation of the Project Highway without the prior written consent of NHAI;
- DLSHL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DLSHL has failed to make any payment to NHAI within the period specified in the DLSHL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DLSHL Concession Agreement.

Upon occurrence of a DLSHL Default, NHAI shall be entitled to terminate the DLSHL Concession Agreement by issuing a termination notice to DLSHL; provided that before issuing the termination notice, NHAI shall by a notice inform DLSHL of its intention to issue such termination notice and grant 15 days to DLSHL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DLSHL Default: Upon termination on account of a DLSHL Default, NHAI will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DLSHL Default during the construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	Basis of calculation for termination payment **
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for NHAI Default: DLSHL may terminate the DLSHL Concession Agreement which is not rectified within cure periods (the "**NHAI Default**") and includes: (i) material default having a Material Adverse Effect on the DLSHL; (ii) failure to make any payment due to DLSHL; (iii) repudiation of the DLSHL Concession Agreement.

Termination Payment for NHAI Default: Upon termination on account of NHAI Default, NHAI will pay DLSHL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by NHAI to the DLSHL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	Basis of calculation for termination payment **
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DLSHL shall be responsible for all defects and deficiencies in the Project Highway for a period of 120 days after termination, as defined in the DLSHL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the Project Highway during this period. In the event that DLSHL fails to repair or rectify such defect or deficiency within a period of 15 days from the date of notice issued by NHAI, NHAI shall be entitled to get the same repaired or rectified at the risk and cost of DLSHL so as to make the Project Highway conform to the maintenance requirements. All costs incurred by NHAI in this regard shall be reimbursed by DLSHL to NHAI within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, NHAI shall be entitled to recover the same in accordance with the provisions of the DLSHL Concession Agreement.

- ***PWD HAM Project***

The DBL Kalmath Zarap Highways Limited ("DKZHL") Concession Agreement ("DKZHL Concession Agreement")

Bid project cost: The parties to the DKZHL Concession Agreement expressly agree that the cost of construction of the project, as provided in the DKZHL Concession Agreement, shall be deemed to be ₹ 9,140 million (the "**Bid Project Cost**"). The Bid Project Cost for payment to DKZHL shall be inclusive of the cost of construction, interest during construction, working capital, physical contingencies and all other costs, expenses and charges for and in respect of construction of the project, save and except any additional costs arising, which shall be due and payable to DKZHL in accordance with the provisions of the DKZHL Concession Agreement. The Bid Project Cost represents the amount due and payable by PWD to DKZHL and may be less than, equal to, or more than the estimated project cost.

Performance security: DKZHL shall, for the performance of its obligations under the DKZHL Concession Agreement, provide to PWD no later than 30 days from the date of the DKZHL Concession Agreement, an irrevocable and unconditional guarantee from a bank for a sum equivalent to ₹ 457 million in the form set forth in the DKZHL Concession Agreement.

Change of scope: PWD may require the provision of additional works and services which are not included in the scope of the project as contemplated by the DKZHL Concession Agreement (the "**Change of Scope**"). PWD shall make an advance payment to DKZHL in a sum equal to 20% of the cost of Change of Scope, and in the event of a dispute, 20% of the cost assessed by the Independent Engineer, as defined in the DKZHL Concession Agreement. PWD shall disburse to DKZHL such amounts as are certified by the Independent Engineer as reasonable and after making a proportionate deduction for the advance payment made. DKZHL shall be entitled to nullify any Change of Scope order if it causes the cumulative costs relating to all the Change of Scope orders to exceed 10% of the Bid Project Cost in any continuous period of three years immediately preceding the date of such Change of Scope order or if such cumulative costs exceed 25% of the Bid Project Cost at any time during the concession period.

O&M: DKZHL shall operate and maintain the project in accordance with the DKZHL Concession Agreement either by itself, or through the O&M Contractor, as defined in the DKZHL Concession Agreement, and if required, modify, repair or otherwise make improvements to the project, and conform to specifications, standards and good industry practice. The obligations of DKZHL, among other things, shall include:

- procuring and ensuring safe, smooth and uninterrupted use of the project, including prevention of loss or damage thereto, during normal operating conditions;
- minimizing disruption in the event of accidents or other incidents affecting the safety and use of the project by providing a rapid and effective response and maintaining liaison with emergency services of the State;
- carrying out periodic preventive maintenance of the project;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, markings, lighting, signage and other control devices;
- undertaking major maintenance such as resurfacing, repairs to structures, and repairs and refurbishment of system and equipment; and
- operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the project and for providing safe, smooth and uninterrupted use of the project.

Maintenance manual: DKZHL shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the project in conformity with the specifications, standards, maintenance requirements, safety requirements and good industry practice. The Maintenance Manual shall be revised and updated once every three years.

Maintenance program: DKZHL shall provide to PWD and the Independent Engineer its proposed annual programme of preventive, urgent and other scheduled maintenance (the "**Maintenance Program**") to comply with the maintenance requirements, maintenance manual and safety requirements. Such Maintenance Program shall include the following:

- preventive maintenance schedule;
- arrangements and procedures for carrying out urgent repairs;
- criteria to be adopted for deciding maintenance needs;
- intervals and procedures for carrying out inspection of all elements of the project;
- intervals at which DKZHL shall carry out periodic maintenance;
- arrangements and procedures for carrying out safety related measures; and
- intervals for major maintenance works and the scope thereof.

Obligations relating to change in ownership: DKZHL shall not undertake or permit any change in ownership, except with the prior written approval of PWD. Notwithstanding anything to the contrary contained in the DKZHL Concession Agreement, DKZHL agrees and acknowledges that:

- all acquisitions of equity by an acquirer, either by himself or with any person acting in concert, directly or indirectly, including by transfer of the direct or indirect legal or beneficial ownership or control of any equity, in aggregate of 25% or more of the total equity of DKZHL; or
- acquisition of any control directly or indirectly of the board of directors of DKZHL by any person either by himself or together with any person or persons acting in concert with him, shall constitute a change in ownership requiring prior approval of PWD from national security and public interest perspective, the decision of PWD in this behalf being final, conclusive and binding on DKZHL, and undertakes that it shall not give effect to any such acquisition of equity or control of the board of directors of DKZHL without such prior approval of PWD. It has been expressly agreed that approval of PWD hereunder shall

be limited to national security and public interest perspective, and PWD shall endeavour to convey its decision thereon expeditiously. It has also been agreed that PWD shall not be liable in any manner on account of grant or otherwise of such approval and that such approval or denial thereof shall not in any manner absolve DKZHL from any liability or obligation under the DKZHL Concession Agreement.

Escrow Account: As per the escrow agreement entered into between PWD, the Lenders' Representative and the escrow bank (the "DKZHL Escrow Agreement") all funds including disbursements by Senior Lenders, Project-related Fee & revenues, payments by PWD etc is to be deposited into the escrow account. The DKZHL Escrow Agreement prescribes an order/priority of payments from the escrow account, both during the concession period and after termination of the DKZHL Concession Agreement:

- During Concession Period: (i) all taxes due and payable by DKZHL for and in respect of the Project; (ii) all payments relating to construction of the Project; (iii) O&M Expenses; (iv) O&M Expenses and other costs and expenses incurred by PWD; (v) any amount dues payable to PWD; (vi) monthly proportionate provision of Debt Service due in an Accounting Year; (vii) damages to PWD under the Concession Agreement; (viii) monthly proportionate provision of Debt Service in respect of Subordinated Debt etc.
- On termination: (i) all taxes due and payable by DKZHL for and in respect of the Project; (ii) percentage of the Debt Due (excluding Subordinate Debt); (iii) Outstanding payments due to PWD; (iv) all payments and damages to PWD under the Concession Agreement (as self-certified by PWD); (v) retention monies (on account of liabilities for defects); (vi) outstanding Debt Service (including balance of Debt Due); (vii) outstanding Subordinate Debt; (viii) incurred or accrued O&M Expenses; (ix) other payments under the DKZHL Concession Agreement.

Indemnities:

- DKZHL shall indemnify, defend, save and hold harmless PWD and its officers, servants, agents, Government Instrumentalities, as defined in the DKZHL Concession Agreement, and Government owned and/or controlled entities/enterprises (the "**PWD Indemnified Persons**"), against any and all suits, proceedings, actions, demands and claims from third parties for any loss, damage, cost and expense of whatever kind and nature, whether arising out of any breach by DKZHL of any of its obligations under the DKZHL Concession Agreement or any related agreement or on account of any defect or deficiency in the provision of services by DKZHL to PWD or to any user, or from any negligence of DKZHL under contract or tort or on any other ground whatsoever, except to the extent that any such suits, proceedings, actions, demands and claims have arisen due to any negligent act or omission, or breach or default of the DKZHL Concession Agreement on the part of PWD Indemnified Persons;
- DKZHL shall fully indemnify, hold harmless and defend PWD and PWD Indemnified Persons from and against any and all loss and/or damages arising out of or with respect to:
  - failure of DKZHL to comply with applicable laws and applicable permits;
  - payment of taxes required to be made by DKZHL in respect of the income or other taxes of DKZHL's contractors, suppliers and representatives; or
  - non-payment of amounts due as a result of materials or services furnished to DKZHL or any of its contractors which are payable by DKZHL or any of its contractors.
- DKZHL shall fully indemnify, hold harmless and defend PWD Indemnified Persons from and against any and all suits, proceedings, actions, claims, demands, liabilities and damages which PWD Indemnified Persons may hereafter suffer, or pay by reason of any demands, claims, suits or proceedings arising out of claims of infringement of any domestic or foreign patent rights, copyrights or other intellectual property, proprietary or confidentiality rights with respect to any materials, information, design or process used by DKZHL or by DKZHL's contractors in performing the obligations of DKZHL or in any way incorporated in or related to the project. If in any such suit, action, claim or proceedings, a temporary restraint order or preliminary injunction is granted, DKZHL shall make every reasonable effort, by giving a satisfactory bond or otherwise, to secure the revocation or suspension of the injunction or restraint order. If, in any such suit, action, claim or proceedings, the project, or any part thereof or comprised therein, is held to constitute an infringement and its use is permanently enjoined, DKZHL shall promptly make every reasonable effort to secure for PWD a licence, at no cost to PWD, authorising continued use of the infringing work. If DKZHL is unable to secure such licence within a reasonable time, DKZHL shall, at its own expense, and without impairing the specifications and standards, either replace the affected work, or part, or process thereof with non-infringing work or part or process, or modify the same so that it becomes non-infringing.

Suspension of DKZHL rights: Upon occurrence of a DKZHL Default, PWD shall be entitled, without prejudice to its other rights and remedies under the DKZHL Concession Agreement including its rights of termination thereunder, to (a) suspend all rights of DKZHL under the DKZHL Concession Agreement, and pursuant hereto, and (b) exercise such rights itself and perform the obligations thereunder or authorize any other person to exercise or perform the same on its behalf during such suspension ("**Suspension**"). Suspension hereunder shall be effective

forthwith upon issue of notice by PWD to DKZHL and may extend up to a period not exceeding 180 days from the date of issue of such notice; provided that upon written request from DKZHL and the Lenders' Representative, as defined in the DKZHL Concession Agreement, PWD shall extend the aforesaid period of 180 days by a further period not exceeding 90 days. At any time during the period of Suspension, the Lenders' Representative, on behalf of Senior Lenders, each term as defined in the DKZHL Concession Agreement including, shall be entitled to substitute DKZHL under and in accordance with the Substitution Agreement, as defined in the DKZHL Concession Agreement, including, and upon receipt of notice thereunder from the Lenders' Representative, PWD shall withhold termination for a period not exceeding 180 days from the date of Suspension, and any extension thereof, for enabling the Lenders' Representative to exercise its rights of substitution on behalf of Senior Lenders.

Effect of Force Majeure Event on the concession:

- Upon the occurrence of any Force Majeure Event prior to the Appointed Date, each term as defined the DKZHL Concession Agreement, the period set for fulfillment of conditions precedent and for achieving financial close shall be extended by a period equal in length to the duration of the Force Majeure Event.
- At any time after the Appointed Date, if any Force Majeure Event occurs:
  - before COD, the construction period and the dates set forth in the Project Completion Schedule, as defined the DKZHL Concession Agreement, shall be extended by a period equal in length to the duration for which such Force Majeure Event subsists; or
  - After COD, DKZHL shall be entitled to receive annuity payments plus interest due and payable under the DKZHL Concession Agreement.

  Provided any payment to be made under this clause shall be subject to deduction of outstanding dues of PWD, if any.

Allocation of costs arising out of force majeure:

- Upon occurrence of any Force Majeure Event prior to the Appointed Date, the parties to the DKZHL Concession Agreement shall bear their respective costs and no party shall be required to pay to the other party any costs thereof.
- Upon occurrence of a Force Majeure Event after the Appointed Date, the costs incurred and attributable to such event and directly relating to the project ("**Force Majeure Costs**") shall be allocated and paid as follows:
  - upon occurrence of a Non-Political Event, as defined in the DKZHL Concession Agreement, the parties shall bear their respective Force Majeure Costs and neither party shall be required to pay to the other party costs therefore;
  - upon occurrence of an Indirect Political Event, as defined in the DKZHL Concession Agreement, all Force Majeure Costs attributable to such Indirect Political Event, and not exceeding the insurance cover for such Indirect Political Event, shall be borne by DKZHL, and to the extent Force Majeure Costs exceed such insurance cover, one half of such excess amount shall be reimbursed by PWD to DKZHL; and
  - upon occurrence of a Political Event, as defined in the DKZHL Concession Agreement, all Force Majeure Costs attributable to such Political Event shall be reimbursed by PWD to DKZHL.

  Force Majeure Costs may include interest payments on debt due, O&M expenses, any increase in the cost of construction works on account of inflation and all other costs directly attributable to the Force Majeure Event, but shall not include any costs which are expressly covered under any provision of the DKZHL Concession Agreement or debt repayment obligations, and for determining such costs, information contained in the Financial Package, as defined in the DKZHL Concession Agreement, may be relied upon to the extent that such information is relevant.

Termination for DKZHL Default: Subject to the provisions of the DKZHL Concession Agreement, in the event that any of the defaults specified below shall have occurred, and DKZHL fails to cure the default within the mentioned cure periods, or where no cure period is specified, then within a cure period of 60 days, DKZHL shall be deemed to be in default of the DKZHL Concession Agreement (the "**DKZHL Default**"), unless the default has occurred as a result of any breach of the DKZHL Concession Agreement by PWD or due to force majeure. The defaults referred to shall include, among other things, the following:

- the Performance Security has been encashed and appropriated in accordance with the DKZHL Concession Agreement and DKZHL fails to replenish or provide fresh Performance Security within a cure period of 15 days;
- subsequent to the replenishment or furnishing of fresh Performance Security in accordance with the DKZHL Concession Agreement, DKZHL fails to meet any condition precedent or cure the DKZHL Default, as the case may be for which whole or part of the Performance Security was appropriated, within

a cure period of 120 days;

- DKZHL does not achieve the latest outstanding project milestone due in accordance with the provisions of the DKZHL Concession Agreement and continues to be in default for 120 days;
- upon occurrence of a Financial Default, the Lenders' Representative, each term as defined in the DKZHL Concession Agreement, has by notice required PWD to undertake Suspension or termination, as the case may be, in accordance with the Substitution Agreement, and DKZHL fails to cure the default within the cure period specified hereinabove:
- DKZHL abandons or manifests intention to abandon the construction or operation of the project without the prior written consent of PWD;
- DKZHL is in breach of the maintenance requirements or the safety requirements, as the case may be;
- DKZHL has failed to make any payment to PWD within the period specified in the DKZHL Concession Agreement; and
- a change in ownership has occurred in breach of the provisions of the DKZHL Concession Agreement.

Upon occurrence of a DKZHL Default, PWD shall be entitled to terminate the DKZHL Concession Agreement by issuing a termination notice to DKZHL; provided that before issuing the termination notice, PWD shall by a notice inform DKZHL of its intention to issue such termination notice and grant 15 days to DKZHL to make a representation, and may, after the expiry of such 15 days, whether or not it is in receipt of such representation, issue the termination notice.

Termination Payments for DKZHL Default: Upon termination on account of a DKZHL Default, PWD will pay an amount equal to 65% of the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date. On termination on account of DKZHL Default during the construction period, the termination payment shall be based on payment milestones achieved (based on the physical progress of the project) and the termination payment corresponding to the achieved milestone shall be as follows:

Payment Milestone	**Basis of calculation for termination payment ****
1st	Nil
2nd	50% of Debt Due or 5.25% of Bid Project Cost, whichever is lower
3rd	60% of Debt Due or 11.70% of Bid Project Cost, whichever is lower
4th	70% of Debt Due or 24% of Bid Project Cost, whichever is lower
5th	80% of Debt Due or 32% of Bid Project Cost, whichever is lower

*** In the event of termination happening in between two Payment Milestones, for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

Termination for PWD Default: DKZHL may terminate the DKZHL Concession Agreement which is not rectified within cure periods (the "**PWD Default**") and includes: (i) material default having a Material Adverse Effect on the DKZHL; (ii) failure to make any payment due to DKZHL; (iii) repudiation of the DKZHL Concession Agreement.

Termination Payment for PWD Default: Upon termination on account of PWD Default, DKZHL will pay DKZHL an amount equal to-

- In case termination occurs prior to COD, aggregate of (i) Payment Milestone - based Termination Payment by PWD to the DKZHL till 5th Payment Milestone as given below; and (ii) 150% of the adjusted equity.

Payment Milestone	**Basis of calculation for termination payment ****
1st	Debt Due or 1.50% of Bid Project Cost, whichever is lower
2nd	Debt Due or 10.50% of Bid Project Cost, whichever is lower
3rd	Debt Due or 19.50% of Bid Project Cost, whichever is lower
4th	Debt Due or 33.75% of Bid Project Cost, whichever is lower
5th	Debt Due or 40.50% of Bid Project Cost, whichever is lower

***In the event of termination happening takes place in between two Payment Milestones, then for the purpose of calculation of Termination Payment, the milestone achieved would only be considered.*

- In case termination occurs on or after COD, the sum of Annuity payments remaining unpaid for and in respect of the concession period, including interest thereon up to the transfer date.

Defects liability after termination: DKZHL shall be responsible for all defects and deficiencies in the project for a period of 120 days after termination, as defined in the DKZHL Concession Agreement, and it shall have the obligation to repair or rectify, at its own cost, all defects and deficiencies observed by the Independent Engineer in the project during this period. In the event that DKZHL fails to repair or rectify such defect or deficiency within a

period of 15 days from the date of notice issued by PWD, PWD shall be entitled to get the same repaired or rectified at the risk and cost of DKZHL so as to make the project conform to the maintenance requirements. All costs incurred by PWD in this regard shall be reimbursed by DKZHL to PWD within 15 days of receipt of demand thereof, and in the event of default in reimbursing such costs, PWD shall be entitled to recover the same in accordance with the provisions of the DKZHL Concession Agreement.

INFORMATION CONCERNING THE UNITS

Unit holding of the Trust

Particulars	Number of Units
Units issued and outstanding prior to this Issue	Up to [●]*
Units issued and outstanding after this Issue	Up to [●]**

**The first allotment of Units is proposed to be made to the Sponsor on or about [●] in accordance with the Securities Purchase Agreements (for further details, please see the section entitled "Related Party Transactions – Securities Purchase Agreements" on page 407) after the Bid/ Issue Closing Date and prior to the Allotment of Units pursuant to the Issue.*
*** To be updated in the Final Placement Memorandum prior to filing with SEBI and the Stock Exchange.*

Unitholders holding more than 5% of the Units

Sr. No.	Name of Unit Holders	Pre-Issue*		Post-Issue**	
		Number of Units	Percentage of holding (%)	Number of Units	Percentage of holding (%)
1.	[●]	Up to [●]	[●]	Up to [●]	[●]

**The first allotment of Units is proposed to be made to the Sponsor on or about [●], in accordance with the Securities Purchase Agreements (for further details, please see the section entitled "Related Party Transactions – Securities Purchase Agreements" on page 407) after the Bid/ Issue Closing Date and prior to the Allotment of Units pursuant to the Issue.*
***To be updated in the Final Placement Memorandum prior to filing with SEBI and the Stock Exchange.*

Unitholding of the Sponsor, Investment Manager, Project Manager and Trustee

Shrem Infra Structure Private Limited, being the Sponsor, shall be allotted Units of the Trust pursuant to the Securities Purchase Agreements, prior to Allotment of Units in the Issue.

The Trustee, Investment Manager and Project Manager do not hold any Units and shall not acquire any Units in this Issue.

Unitholding of the directors of the Investment Manager

As on the date of this Draft Placement Memorandum, none of the directors of the Investment Manager hold any Units or propose to hold any Units in the Trust.

Sponsor lock-in

In terms of the InvIT Regulations, the Sponsor shall hold not less than 15% of Units on a post-Issue basis, aggregating up to [●] Units, which shall be locked-in for a period of three years from the date of listing of the Units. Further, unitholding of the Sponsor, exceeding 15% on a post-Issue basis, if any, shall be locked-in for a period of not less than one year from the date of listing of the Units.

USE OF PROCEEDS

The Issue Proceeds will be up to ₹ 6,000 million (the "**Issue Proceeds**"). The Issue Proceeds will be utilised towards providing loans to certain Initial Portfolio Assets for repayment or pre-payment of debt, including any accrued interest, availed by them from certain banks and financial institutions.

Requirements of Funds

The Issue Proceeds are proposed to be utilised in accordance with the details provided in the following table:

(In ₹ million)

S. No.	Particulars	Amount*
(i)	Providing loans to certain Initial Portfolio Assets for repayment or pre-payment of debt, including any accrued interest, availed by them from certain banks and financial institutions	6,000.00

**To be updated in the Final Placement Memorandum prior to filing with SEBI and the Stock Exchange.*

The Investment Manager believes that providing a loan to DBL Lucknow Sultanpur Highways Limited for repayment or pre-payment of debt, including any accrued interest, availed by DBL Lucknow Sultanpur Highways Limited from certain banks, will help reduce outstanding indebtedness of the Trust on a consolidated basis and assist the Trust in maintaining a favourable debt-equity ratio, which will enable the Trust to raise further resources in the future to fund potential business development opportunities and plans to grow and expand its business in the future thereby enabling the Trust to meet its commitment towards distributions to Unitholders.

The fund requirements mentioned above and the proposed deployment are based on the estimates of the Investment Manager and have not been appraised by any bank, financial institution or any other external agency. The fund requirements may vary due to factors beyond the Investment Manager's control, such as market conditions, competitive environment, interest rate and exchange rate fluctuations. Consequently, the fund requirements are subject to revisions, in the future, at the discretion of the Investment Manager.

Details of Utilisation of the Issue Proceeds

The details of utilisation of the Issue Proceeds are set forth herein below:

1. ***Providing loans to certain Initial Portfolio Assets for repayment or pre-payment of debt, including any accrued interest, availed by them from certain banks and financial institutions***

The Trust proposes to utilise an estimated aggregate amount of ₹ 6,000.00 million from the Issue Proceeds to provide loans to DBL Lucknow Sultanpur Highways Limited ("**DLSHL**") and Shrem Tollways Private Limited ("**STPL**") for repayment or pre-payment of debt, including any accrued interest, availed by DLSHL and STPL from certain banks and financial institutions, as described below:

Sr. No.	Name of the lender(s)	Principal Amount Outstanding as on December 31, 2020 (in ₹ million)	Interest outstanding as on December 31, 2020 (in ₹ million)
DLSHL			
1.	State Bank of India	7,832.07	Nil
STPL			
2.	IL&FS Infrastructure Debt fund	933.33	Nil

The repayment or prepayment of indebtedness availed by DLSHL and STPL, as set out above, shall be based on various factors, including: (i) any conditions attached to the loan restricting the Trust's ability to repay or prepay the loan and time taken to fulfil such requirements; (ii) levy of any pre-payment penalties; (iii) provisions of any laws, rules, regulations and contracts governing such borrowings; and (iv) other commercial considerations, including the interest rate on the loan facility, the amount of the loan outstanding and the remaining tenor of the loan.

In case of a shortfall in Issue Proceeds, the Investment Manager may, in compliance with the InvIT Regulations, have the flexibility to meet such shortfall including, by utilising the Trust's internal accruals or availing facilities from lenders. The Investment Manager, in accordance with the Investment Objectives of the Trust, policies of its board of directors of the Investment Manager and the InvIT Regulations, will have flexibility in utilising any surplus amounts.

Issue Expenses

The total expenses of this Issue are estimated to be up to ₹ [●] million ("**Issue Expenses**"). The Issue Expenses consist of fee and commissions payable to the Lead Manager, fee payable to legal counsels, fee payable to Escrow Collection Bank and Registrar and Unit Transfer Agent and all other incidental and miscellaneous expenses for undertaking the Formation Transactions and for listing the Units on the Stock Exchange. The Issue Expenses shall be borne by the Trust.

For ease of operations, if required, the expenses in relation to the Issue as stated above, at the outset, may be borne by the Sponsor or the Investment Manager on behalf of the Trust, and the Investment Manager (on behalf of the Trust) agrees that it will reimburse the Sponsor or the Investment Manager for all such expenses as may be incurred by the Sponsor or the Investment Manager on actual basis, from the future cash flows of the Trust.

FINANCIAL INDEBTEDNESS AND DEFERRED PAYMENTS

The details of indebtedness of the Trust as at December 31, 2020, together with a brief description of certain material covenants of the relevant financing agreements, are provided below:

Sr. No.	Name of the Initial Portfolio Asset	Pre-Issue Principal Amount outstanding, as on December 31, 2020 (in ₹ million)	Post-Issue Principal Amount outstanding (in ₹ million)*
1.	***SRPL***		
	Secured loans availed from banks and financial institutions	1,084.00	[●]
	Unsecured loans from the Sponsor**	3,916.00	[●]
	Total Borrowings	5,000.00	[●]
2.	***SIPL***		
	Secured loans availed from banks and financial institutions	0.00	[●]
	Unsecured loans from the Sponsor and its associates**	6,410.24	[●]
	Total Borrowings	6,410.24	[●]
3.	***STPL***		
	Secured loans availed from banks and financial institutions	933.33	[●]
	Unsecured loans from the Sponsor and its associates**	1,509.29	[●]
	Total Borrowings	2,442.62	[●]
4.	***Suryavanshi Infrastructure***		
	Secured loans availed from banks and financial institutions	0.00	[●]
	Unsecured loans from Shrem group entities	67.75	[●]
	Total Borrowings	67.75	[●]
5.	***DNMTL***		
	Secured loans availed from banks and financial institutions	745.02	[●]
	Unsecured loans from Shrem group entities and its associates	163.28	[●]
	Total Borrowings	908.30	[●]
6.	***DJSTL***		
	Secured loans availed from banks and financial institutions	697.90	[●]
	Unsecured loans from Shrem group entities	22.60	[●]
	Total Borrowings	720.50	[●]
7.	***DBDTL***		
	Secured loans availed from banks and financial institutions	542.11	[●]
	Unsecured loans from Shrem group entities	20.10	[●]
	Total Borrowings	562.21	[●]
8.	***DAVTL***		
	Secured loans availed from banks and financial institutions	483.19	[●]
	Unsecured loans from DBL and Shrem group entities	17.01	[●]
	Total Borrowings	500.21	[●]
9.	***DBL Silwani***		
	Secured loans availed from banks and financial institutions	479.80	[●]
	Unsecured loans from Shrem group entities	0.00	[●]
	Total Borrowings	479.80	[●]
10.	***DBL Sitamau***		
	Secured loans availed from banks and financial institutions	269.58	[●]
	Unsecured loans from Shrem group entities	13.60	[●]
	Total Borrowings	283.18	[●]
11.	***DHDTL***		
	Secured loans availed from banks and financial institutions	666.04	[●]
	Unsecured loans from Shrem group entities and its associates	77.71	[●]
	Total Borrowings	743.75	[●]
	DPRTL		

Sr. No.	Name of the Initial Portfolio Asset	Pre-Issue Principal Amount outstanding, as on December 31, 2020 (in ₹ million)	Post-Issue Principal Amount outstanding (in ₹ million)*
12.	Secured loans availed from banks and financial institutions	1,530.63	[●]
	Unsecured loans from Shrem group entities	383.90	[●]
	Total Borrowings	1,914.53	[●]
13.	***DMSTL***		
	Secured loans availed from banks and financial institutions	558.69	[●]
	Unsecured loans from Shrem group entities	140.70	[●]
	Total Borrowings	699.39	[●]
14.	***DUNTL***		
	Secured loans availed from banks and financial institutions	525.67	[●]
	Unsecured loans from Shrem group entities	0.00	[●]
	Total Borrowings	525.67	[●]
15.	***DBSTL***		
	Secured loans availed from banks and financial institutions	1,736.03	[●]
	Unsecured loans from Shrem group entities and its associates	332.84	[●]
	Total Borrowings	2,068.87	[●]
16.	***DTNTL***		
	Secured loans availed from banks and financial institutions	683.80	[●]
	Unsecured loans from Shrem group entities	61.77	[●]
	Total Borrowings	745.57	[●]
17.	***DSBTL***		
	Secured loans availed from banks and financial institutions	304.75	[●]
	Unsecured loans from Shrem group entities and its associates	248.61	[●]
	Total Borrowings	553.36	[●]
18.	***DMHTL***		
	Secured loans availed from banks and financial institutions	433.11	[●]
	Unsecured loans from DBL and Shrem group entities	146.57	[●]
	Total Borrowings	579.68	[●]
19.	***DHPTL***		
	Secured loans availed from banks and financial institutions	916.68	[●]
	Unsecured loans from DBL	96.42	[●]
	Total Borrowings	1,013.10	[●]
20.	***DHRTL***		
	Secured loans availed from banks and financial institutions	518.45	[●]
	Unsecured loans from DBL and Shrem group entities	210.22	[●]
	Total Borrowings	728.67	[●]
21.	***DLSHL***		
	Secured loans availed from banks and financial institutions	7,832.07	[●]
	Unsecured loans from Shrem group entities	1,853.41	[●]
	Total Borrowings	9,685.48	[●]
22.	***DTAHL***		
	Secured loans availed from banks and financial institutions	2,373.45	[●]
	Unsecured loans from DBL and Shrem group entities	326.69	[●]
	Total Borrowings	2,700.14	[●]
23.	***DKZHL***		
	Secured loans availed from banks and financial institutions	3,001.90	[●]
	Unsecured loans from DBL	795.15	[●]
	Total Borrowings	3,797.05	[●]
24.	***DMYHPL***		
	Secured loans availed from banks and financial institutions	3,139.36	[●]

Sr. No.	Name of the Initial Portfolio Asset	Pre-Issue Principal Amount outstanding, as on December 31, 2020 (in ₹ million)	Post-Issue Principal Amount outstanding (in ₹ million)*
	Unsecured loans from DBL	495.48	[●]
	Total Borrowings	3,634.84	[●]
25.	***DYWHPL***		
	Secured loans availed from banks and financial institutions	2,872.93	[●]
	Unsecured loans from DBL and Shrem group entities	1,008.23	[●]
	Total Borrowings	3,881.16	[●]
26.	***DWBHPL***		
	Secured loans availed from banks and financial institutions	2,466.39	[●]
	Unsecured loans from DBL and Shrem group entities	506.31	[●]
	Total Borrowings	2,972.70	[●]
27.	***JDTL***		
	Secured loans availed from banks and financial institutions	6,460.20	[●]
	Unsecured loans from DBL and Shrem group entities	0.00	[●]
	Total Borrowings	6,460.20	[●]

**To be updated in the Final Placement Memorandum prior to filing with SEBI and the Stock Exchange.*
***The unsecured loans availed from the Sponsor and its associates are proposed to be substituted with non-convertible debentures which shall then be acquired by the InvIT prior to filing the Placement Memorandum with SEBI.*

For further details of the equity share capital of each of the Initial Portfolio Assets, please see the section entitled "*Formation Transactions in relation to the Trust*" on page 19.

Principal terms of the borrowings availed by the Initial Portfolio Assets:

1. *Security:* Loans availed by the Initial Portfolio Assets, are secured by, amongst others:

   (i). a first charge over all immovable properties (present and future) except the project assets;

   (ii). a first charge over all moveable properties (present and future) except the project assets;

   (iii). pledge of a certain specified percentage of the equity shares of the Project SPVs until the final settlement date;

   (iv). corporate guarantee by DBL and the relevant Holdco;

   (v). a first charge on all intangible assets including but not limited to goodwill, rights, undertaking and uncalled capital present and future excluding the project assets; and

   (vi). a first charge of all revenues and receivables from the project or otherwise, project's book debts, operating cash flows, commissions or revenues of whatever nature, after such revenues and receivables are deposited in the relevant escrow account.

2. *Pre-payment:* The Initial Portfolio Assets may prepay the loans availed by them in full or in part without the payment of any prepayment penalty, if the revised applicable interest rate due to spread reset is not acceptable and such prepayment is made within 90 days of spread reset notice from the lender agent with the applicable notice as may be provided under the relevant financing documents. Additionally, some of the Initial Portfolio Assets may prepay the loans availed by them in full or in part without the payment of any prepayment penalty provided such prepayment is made out of the proceeds of insurance claims or if such prepayment is made out of any project agreements or the termination payment received from relevant concessioning authorities. Under certain of our loan agreements, in the event of prepayment from any other source, prepayment penalty ranging between 0.25% - 2.0% of the amount prepaid shall be charged.

3. *Events of Default:* Borrowing arrangements entered into by the Initial Portfolio Assets contain standard events of default affecting the Initial Portfolio Assets, including:

   (i). failure to pay any sum under the financing agreement;

   (ii). application of the loan to any purpose other than the purpose(s) for which it had been availed;

(iii). any event that may have a material adverse effect, in the opinion of the lenders;

(iv). breach of obligations in the performance of the financial covenants under the relevant financing agreements;

(v). winding up or insolvency of the borrower or its promoters;

(vi). default in the performance or observance of the material covenants that may have a material adverse effect on the respective project;

(vii). failure to maintain any of the insurance as described under the insurance contracts;

(viii). It is or becomes unlawful for the respective initial portfolio asset or any person (including the respective senior lender) to perform any of their respective obligations under any transaction document; and

(ix). occurrence of a force majeure event as defined under the relevant Concession Agreement.

This is an indicative list and there are additional terms that may result in an event of default under the various borrowing arrangements entered into by the Initial Portfolio Assets.

4. *Restrictive Covenants:* Borrowing arrangements entered into by the Initial Portfolio Assets contain standard restrictive covenants affecting the Initial Portfolio Assets, including:

(i). formulation of any scheme of amalgamation or reconstruction;

(ii). entering into borrowing arrangements either secured or unsecured with any bank or financial institution or otherwise or accept deposits other than the bank borrowings for meeting the working capital requirements;

(iii). effecting any change in their respective capital structure;

(iv). selling or disposing off or creating security or encumbrances on the security charged to the respective senior lender in favour of any other bank, financial institutions, company, firm, individual or person; and

(v). undertaking guarantee obligations on behalf of any other company.

Given the nature of these borrowings and the terms of pre-payment, the aggregate outstanding borrowing amounts may vary from time to time.

Principal terms of the borrowing to be availed by the Trust

The principal terms of the InvIT Loan are proposed to be as follows:

Facility	Rupee term loan of ₹ 34,312.70 million
Purpose	To retire external lenders at the Project SPV level by way of onward lending to the Project SPVs.
Loan Tenor	The tenure of the InvIT Loan will be aligned with the projected cash flows or life of the Projects, which will be door to door tenure of 14.25 years with repayment starting from June 30, 2021.
Interest Rate	Interest to be linked to 6 month MCLR + 0.15%
Security	• First charge on all immoveable assets, moveable assets and the receivables of the Trust. • First charge on the escrow account opened by the Trust in which the free cash flows of the Initial Portfolio Assets and any infrastructure projects directly owned by the Trust will be deposited. • Assignment of loans granted by the Trust to the Initial Portfolio Assets. • Pledge of securities of the Initial Portfolio Assets held by the Trust. • Pledge over a portion of the Units held by the Sponsor.
Prepayment Premium	Prepayment premium of 0.25% on principal amount of the loan prepaid, provided, an irrevocable notice to prepay the InvIT Loan has been given by the Trust to the lender prior to 15 days from the prepayment date. No prepayment premium will be applicable in case the loan is prepaid by the promoter's own money or out of utilization of surplus project cash flows. Any prepayment made under the InvIT Loan shall be applied in the inverse order of maturity to all outstanding instalments under the InvIT Loan under the relevant repayment schedule.

Mandatory Prepayment	The Trust shall make mandatory prepayments on a *pro rata* basis to the lender of amounts received as: • Any liquidated damages paid under any of the Project Documents to the extent not applied to pay penalties or to pay for completion of work contemplated by such Project Documents. • Any insurance proceeds to the extent not applied to repair, renovate, restore, or re-instate the Project Assets (as defined in the relevant concession agreement). • The proceeds of any termination payments/ buy-out payments received under the Transaction Documents. • The proceeds resulting from the expropriation or other takeover event by any Government authority of the Project Assets of the Trust. • Proceeds resulting from any strategic sale or stake dilution by the Trust or the Holdcos. • The proceeds resulting from an arbitral or judicial award in connection with any of the Project Documents in relation to claims lodged post first disbursement except claims attributed to EPC contractor as per the relevant EPC agreement, provided no payments towards the same have been made by the Trust to the EPC contractor. If the pre-payment is affected at the instance of the lenders, there will be no prepayment premium. Any prepayment made under the InvIT Loan shall be applied in the inverse order of maturity under the relevant repayment schedule, unless mentioned otherwise and the mandatory prepayment will not have any prepayment premium
Debt Service Reserve Account ("DSRA")	The Trust shall maintain a DSRA in equivalent to peak interest and instalment obligation of two quarters.
Other conditions	Other conditions applicable to the InvIT Loan may include: • The Trust may add subsequent projects to its portfolio at a later stage. If the Trust decides to approach banks for raising debt for this purpose, the lender shall have the right of first refusal. • New projects which are acquired at a later stage should be fully completed and operational and not under development.

Borrowings by the Project SPVs from the Trust

The InvIT Loan shall be utilized to subscribe to non convertible debentures to be issued by the Project SPVs to the Trust (collectively, the "**Project SPV NCDs**").

The principal terms of the Project SPV NCDs are proposed to be as follows:

Instrument	Secured, redeemable non-convertible debentures
Purpose	Towards refinancing the existing financial debt of the relevant Project SPV.
Permitted Indebtedness	▪ Any indebtedness pursuant to the Project SPV NCDs documents. ▪ Any working capital facilities availed by the relevant Project SPV in connection with the relevant Project. ▪ Any indebtedness incurred by the relevant Project SPV to refinance or redeem the Project SPV NCDs. ▪ Any performance guarantee facility availed by the relevant Project SPV for the purpose of the relevant Project.
Security for the Trust	Subject to the provisions of the concession agreements, the Project SPV NCDs will be secured by the following: ▪ Charge on all assets (moveable and immoveable) of the relevant Project SPV (other than Project Assets); ▪ charge on the entire intangible assets of the relevant Project SPV including but not limited to, patents, trademarks and other intellectual property rights, goodwill and uncalled capital, both present and future (other than Project Assets); ▪ charge on the Escrow Account of the relevant Project SPV and charge on cash flows (subject to the waterfall under the Escrow Account and charge of Authority over the Escrow Account to the extent of deemed performance security); ▪ Charge/assignment on all contracts of the relevant Project SPV including insurance contracts, clearances (other than Project Assets); ▪ Assignment of rights of the relevant Project SPV under the Concession Agreement subject to and in accordance with the Substitution Agreement; and ▪ Pledge over 100% (one hundred percent) of the securities issued by the relevant Project SPV to its shareholders or any third parties, subject to the provisions of the Concession Agreement.

	All security permissible to 'Senior Lenders' (as defined under the Concession Agreement) for the relevant Project shall be created in favour of the debenture trustee for the benefit of the Trust. The above security will be shared on a *pari passu* basis with lenders providing permitted indebtedness.
Timeline for Security Creation	All the security shall be created prior to subscription of the Project SPV NCDs, unless otherwise agreed by the Trust.
Issuance Mode	The Project SPV NCDs shall be issued in dematerialized form only.
Coupon Rate	Coupon rate shall be determined with respect to each Project SPV. The coupon shall be paid at the coupon rate on monthly intervals, subject to any reset at the option of the Trust.
Tenor and Repayment	With respect to a Project SPV, the tenor of the relevant Project SPV NCDs shall be determined with reference to its remaining concession period and repayment of the Project SPV NCDs shall be in quarterly structured instalments, which will be detailed in the documentation for the Project SPV NCDs.
Put Option	In case there is surplus cash available with a Project SPV after making the repayment instalment of the relevant Project SPV NCDs, other interest, taxes, concession fee, O&M expenses, obligations towards the concession agreement etc., then the redemption of the Project SPV NCDs may be accelerated to the extent of surplus cash available, as directed by the Trust and in accordance with applicable law.
Tranches	Project SPV NCDs will be issued in one or more tranches as agreed with the Project SPVs.
Conditions Subsequent	The applicable conditions subsequent include: ▪ perfection of security in accordance with applicable law; ▪ providing to the debenture trustee and the Trust proof of credit of the Project SPV NCDs to the account of the Trust and filing of PAS-5 with the concerned Registrar of Companies in terms of the Companies Act, 2013; ▪ filing of the return of allotment with the Registrar of Companies, in Form PAS-3, as required under Section 42 of the Companies Act, 2013; ▪ submission of a no dues certificate from existing lenders; and ▪ within a specified period, ensuring that the security interest created for the benefit of the existing lenders have been suitably satisfied and all necessary filings in relation thereto have been made with relevant authorities.
Covenants	All covenants (positive or negative) customary to these types of transactions will be detailed in definitive documents to be executed in relation to the Project SPV NCDs.
Default Interest	In the event of any default in payment of coupon, principal or any other monies due to the Trust on their respective dates, default interest at the rate not less than 2% on the defaulted amounts, for the period of default shall be payable by the relevant Project SPV. The default interest shall be over and above the coupon rate and shall be payable from the date of occurrence of default and until such time such default is cured or remedied.
Events of Default and consequences of Event of Default	All customary events of default and consequences thereof to these types of transactions will be detailed in definitive documents to be executed in relation to the Project SPV NCDs.
Governing Law and Jurisdiction	India, New Delhi

The Project SPVs will enter into definitive documentation in relation to the Project SPV NCDs, including subscription agreements relating to the Project SPV NCDs (the "**Subscription Agreements**"), prior to filing the Placement Memorandum with SEBI.

The Project SPVs will utilize the funds raised through issuing the Project SPV NCDs towards pre-payment or repayment of debt, including any accrued interest, availed from banks and financial institutions.

All or any of the Project SPVs may repay or refinance some or all of their existing borrowings prior to the date of issuing the Project SPV NCDs. Accordingly, the Project SPVs may utilise the amounts raised through the Project SPV NCDs for the repayment or prepayment of part or all such re-financed loans, or additional loan facilities obtained by all or any of the Project SPVs, including all existing loans. However, the aggregate amount to be utilised from towards repayment or prepayment of would not exceed ₹ 32,000 million (being the aggregate value of the Project SPV NCDs).

Post-Issue Indebtedness of the Trust

Subsequent to the Issue, a portion of the InvIT Loan amounting up to ₹ 32,000 million shall continue to remain outstanding.

The post-Issue consolidated borrowings and deferred payments of the Trust will be formulated and approved by the Investment Manager in accordance with the Borrowing Policy. Upon full utilization of the Issue Proceeds, and drawdown of additional debt, the indebtedness and deferred payments of the Trust, on a consolidated basis, shall not exceed ₹ 32,000 million, subject to any additional indebtedness incurred after listing of Units in accordance with applicable law.

Status of lender consents

As on the date of this Draft Placement Memorandum, the Project SPVs have availed debt from certain third-party lenders, which is proposed to be repaid or prepaid from the proceeds of the InvIT Loan. Prior to filing the Placement Memorandum with SEBI, each of the Project SPVs shall serve notices to its relevant lenders in relation to the repayment or prepayment of the outstanding debt availed from such lender, which shall include details of the amounts proposed to be repaid or prepaid, the Issue and the proposed transfer of the Holdcos and the Project SPVs to the Trust. For further details, please see the section entitled "*Risk Factors – We propose to intimate our lenders in relation to the transactions contemplated under the Issue or the refinancing of the loans obtained by the Project SPVs from banks and other financial institutions*" on page 59.

Borrowing Policy

The Investment Manager shall ensure that all funds borrowed in relation to the Trust are in compliance with the InvIT Regulations. Accordingly, the Investment Manager has formulated a borrowing policy to outline the process for borrowing monies in relation to the Trust. For further details, please see the section entitled "*Corporate Governance – Investment Manager – Policies of the Board of Directors of the Investment Manager in relation to the Trust – Borrowing Policy*" on page 132.

DISTRIBUTION

Statements contained in this section entitled "Distribution" that are not historical facts are forward-looking statements. Such statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those that may be projected. Under no circumstances should the inclusion of such information herein be regarded as a representation, warranty or prediction with respect to the accuracy of the underlying assumptions by the Trust, the Trustee, the Sponsor, the Investment Manager, the Lead Manager(s) or any other person. Bidders are cautioned not to place undue reliance on these forward-looking statements that are stated only as at the date of this Draft Placement Memorandum. For details in relation to such forward-looking statements, please see the section entitled "Forward-Looking Statements" on page 14.

The net distributable cash flows of the Trust (the "**Distributable Income**") are based on the cash flows generated from the underlying operations undertaken by the InvIT Assets. For details of the business and operations presently undertaken by the InvIT Assets, please see the section entitled "*Business*" on page 144. Presently, cash flows receivable by the Trust may be in the form of dividend, interest income or principal repayment received from the InvIT Assets in relation to any debt sanctioned by the Trust, or a combination of both.

In terms of the InvIT Regulations, not less than 90% of the net distributable cash flows of the Project SPVs, shall be distributed to the Trust / Holdco in proportion of its holding in such Project SPV, subject to applicable provisions in the Companies Act, 2013, as amended, and not less than 90% of the net distributable cash flows of the Trust shall be distributed to the Unitholders.

The Trust shall declare and distribute at least 90% of the Distributable Income to the Unitholders, at least once in every quarter of a financial year. However, if any infrastructure asset is sold by the Trust or the Initial Portfolio Assets, or if the equity shares or interest in the Initial Portfolio Assets are sold by the Trust; if the Trust proposes to re-invest the sale proceeds into another infrastructure asset within one year, it shall not be required to distribute any sales proceeds to the Trust or to the Unitholders. Further, if the Trust proposes not to invest the sale proceeds into any other infrastructure asset within one year, it shall be required to distribute the same in the manner specified above. In accordance with the InvIT Regulations, distributions by the Trust shall be made no later than 15 days from the date of such declarations. The distribution, when made, shall be made in Indian Rupees. For details on the risks relating to distribution, please see the section entitled "*Risk Factors*" on page 59.

Distribution Policy

Method of calculation of Distributable Income

The Distributable Income of the Trust shall be calculated in accordance with the InvIT Regulations and any circular, notification or guidance issued thereunder. Presently, the Trust proposes to calculate distributable income in the manner provided below:

I. Calculation of net distributable cash flows at each SPV level:

Description
Profit after tax as per statement of profit and loss account (standalone) (A)
Add: Depreciation and amortisation as per statement of profit and loss account. In case of impairment reversal, same needs to be deducted from profit and loss.
Add/less: Loss/gain on sale of infrastructure assets
Add: Net proceeds (after applicable taxes) from sale of infrastructure assets adjusted for the following: • related debts settled or due to be settled from sale proceeds; • directly attributable transaction costs; • proceeds reinvested or planned to be reinvested as per Regulation 18(7)(a) of the InvIT Regulations
Add: Net proceeds (after applicable taxes) from sale of infrastructure assets not distributed pursuant to an earlier plan to re-invest, if such proceeds are not intended to be invested subsequently.
Less: Capital expenditure, if any
Add/less: Any other item of non-cash expense / non cash income (net of actual cash flows for these items), including but not limited to • any decrease/increase in carrying amount of an asset or a liability recognised in the statement of profit and loss account on measurement of the asset or the liability at fair value; • interest cost as per effective interest rate method (difference between accrued and actual paid); • deferred tax, lease rents etc.; • unwinding of interest cost on interest free loan or other debentures; • portion reserve for major maintenance of InvIT assets which has not been accounted for in profit and loss statement; • reserve for debenture/ loan redemption (Excluding any reserve required by any law or as per lender's agreement) • any amount to be kept aside as required by lenders
Less: Repayment of external debt (principal) / redeemable preference shares / debentures, etc. (Excluding refinancing) / net cash set aside to comply with DSRA requirement under loan agreements
Add/Less: Change in working capital

Add: Interest on loans (if any) from Trust;
Add: Amount invested by the Trust in the project entity for service of debt or interest, through internal accruals to the extent allowed under the InvIT Regulations.
Add/less: Any other item of non-cash expense / non-cash income (net of actual cash flows for these items) or any other income/expense or adjustments not considered for the calculation of profit after tax, if deemed necessary by the Investment Manager, after the Bid/Issue Closing Date.
Total Adjustments (B)
Net Distributable Cash Flows (C)=(A+B)

II. Calculation of net distributable cash flows at the consolidated Trust level:

Description
Profit after tax as per statement of profit and loss/ income and expenditure (standalone) (A)
Add: Depreciation and amortisation as per statement of profit and loss/ income and expenditure (consolidated)
Add/less: Loss/gain on sale of infrastructure assets or equity shares or interest in SPV
Add: Net proceeds (after applicable taxes) from sale of infrastructure assets or equity shares or interest in SPV adjusted for the following: • related debts settled or due to be settled from sale proceeds • directly attributable transaction costs • proceeds reinvested or planned to be reinvested as per Regulation 18 (7)(a) of the InvIT Regulations • capital gains taxes on sale of the SPV, or other investments of the Trust.
Add: Net proceeds (after applicable taxes) from sale of infrastructure assets or equity shares or interest in SPV not distributed pursuant to an earlier plan to re-invest, if such proceeds are not intended to be invested subsequently
Add/less: Any other item of non-cash expense / non cash income (net of actual cash flows for these items), if deemed necessary by the Investment Manager, including but not limited to • any decrease/increase in carrying amount of an asset or a liability recognised in statement of profit and loss/income and expenditure on measurement of the asset or the liability at fair value; • interest cost as per effective interest rate method; • deferred tax; and • lease rents.
Less: Repayment of external debt (principal) / redeemable preference shares / debentures, etc., net of any debt raised by refinancing of existing debt or/and any new debt raised, if deemed necessary by the Investment Manager
Add: Any other income accruing at the Trust level and not captured above, including but not limited to interest/return on surplus cash, if any, invested by the Trust
Total cash inflow at the Trust level (A)
Less: Any payment of fees, interest and expense incurred at the Trust level, including but not limited to the fees of the Investment Manager and the Trustee
Less: Any expenditure reimbursed to Investment Manager which the Investment Manager incurred on behalf of Trust
Less: Proceeds reinvested or planned to be reinvested in accordance with Regulation 18(7)(a) of the InvIT Regulations and investment policy, if any.
Less: Income tax (if applicable) at the standalone Trust level
Less: Amount invested in or lent to the SPV for service of debt or interest funded through internal accruals of the Trust, to the extent allowed under the InvIT Regulations. Such amount shall be decided by the IM Board in accordance with Trust Deed;
Add: Net proceeds from fresh issuance of units by the Trust
Less: Any provision, adjustment or reserve deemed necessary by the board of directors of the Investment Manager for expenses which may be due in the future period but for which there may not be commensurate amounts available by the date such expenses become due provided such expenses are already included in accordance with the Trust Deed.
Distributable Income

For the purposes of the Income Tax Act, 1961 (**"IT Act"**), any income distributed by the Trust to the Unitholders shall be deemed to be of the same nature and in the same proportion in the hands of the Unitholder as it had been received by, or accrued to, the Trust. Accordingly, the Trust may follow either the receipt approach or the accrual approach subject to the provisions of the IT Act and applicable accounting standards, however, the same shall be followed since the beginning and on a consistent basis.

In situations where it is not possible for the Trust to distribute the amounts received from the portfolio assets (whether in the nature of income or capital) net of expenses (direct and indirect) to the unitholders in the same year, due to any reason, the Trustee shall cause the Investment Manager to maintain a record of nature and quantum of such un-distributed amounts. Future distributions by the Trust to the Unitholders to the extent of such un-distributed amounts shall be deemed to be of the same nature as the amounts remaining un-distributed in accordance with section 115UA of the IT Act.

Subject to any privileges/ immunities provided to the Unitholders under the Trust deed or applicable law, the Trust may make deduction of any taxes, cess, fees, charges, duties, etc., as may be required to be deducted or withheld under the applicable law before making any payment of Distributable Income to any Unitholder.

In terms of the InvIT Regulations, if the distribution is not made within 15 days from the date of declaration, the Investment Manager shall be liable to pay interest to the Unitholders at the rate of 15% per annum until the distribution is made. Such interest shall not be recovered by the Investment Manager in the form of fee or any other form payable to the Investment Manager by the Trust.

In-specie Distribution: Subject to the approval of the Unitholders, in accordance with the Trust Deed and provisions of applicable law, the Trustee, in consultation with the Investment Manager, may at any time during the life of the Trust make in-specie distributions of the assets of the Trust on such terms and conditions and in such manner that is in accordance with the Trust Deed, the Investment Management Agreement, the Project Implementation and Management Agreements and other documents for the purpose of the Trust (including the offer documents) and applicable law.

DISCUSSION AND ANALYSIS BY THE DIRECTORS OF THE INVESTMENT MANAGER OF THE FINANCIAL CONDITION, RESULTS OF OPERATIONS AND CASH FLOWS OF THE INITIAL PORTFOLIO ASSETS OF THE TRUST

You should read the following discussion and analysis of our financial condition, results of operations and cash flows in conjunction with the sections entitled "Summary Combined Financial Statements" and "Audited Special Purpose Combined Financial Statements" on pages 31 and 458, respectively. This discussion contains forward-looking statements and involves numerous risks and uncertainties, including, but not limited to, those described in the section entitled "Risk Factors" on page 59. Actual results could differ materially from those contained in any forward-looking statements and for further details regarding forward-looking statements, kindly refer to the section titled "Forward-Looking Statements" on page 14. The Audited Special Purpose Combined Financial Statements are prepared in accordance with Ind AS, which differs in certain respects from Indian GAAP, IFRS and U.S. GAAP. Our fiscal year ends on March 31 of each year, and references to a particular fiscal are to the twelve months ended March 31 of that year. For the sole purposes of the Audited Special Purpose Combined Financial Statements, references to "we", "us" and "our" is to the Initial Portfolio Assets on a combined basis.

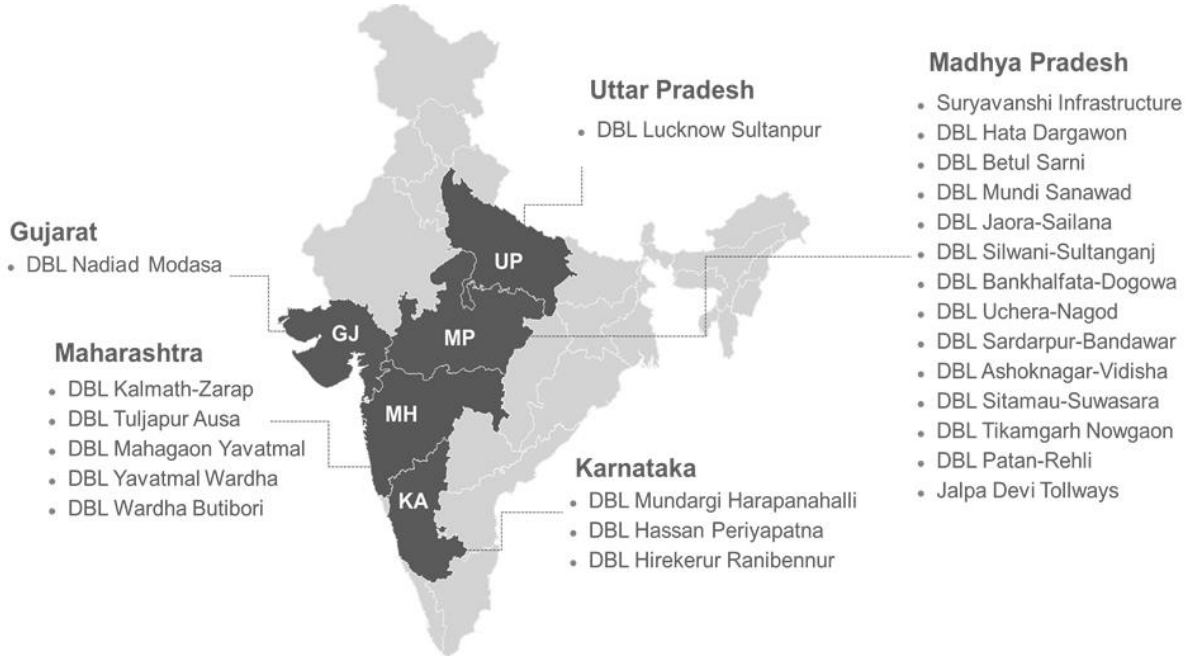
Overview

We are an InvIT set-up for the purposes of carrying on the activity of an infrastructure investment trust and for making investments in the Project SPVs or infrastructure projects or securities of Indian companies engaged in the infrastructure sector, as may be permitted, in accordance with the InvIT Regulations. We were registered with SEBI as an InvIT on February 4, 2021. Our Sponsor, Shrem Infra Structure Private Limited, is a part of the Shrem group. The Shrem group was founded in 2010 by Nitan Chhatwal, and has managed diverse investments in the hospitality, health care, telecommunication and infrastructure sectors. The Sponsor has set up the Trust, which, subject to receiving approvals from the Concessioning Authorities, will, amongst other things, acquire 100% of the issued and paid-up equity share capital of Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, the "**Holding Companies**"). It is proposed that through the Holding Companies, the Trust will ultimately acquire 100% shareholding in 20 Project SPVs and 74% shareholding in four Project SPVs (on account of shareholding requirements under the relevant concession agreements), which maintain and operate road assets aggregating to approximately 6,442.35 lane kilometers, located across five states in India (the "**Projects**"). For details of such proposed acquisitions, please see the section entitled "*Formation Transactions in relation to the Trust*" on page 19.

Our Projects

The Projects, consisting of both National Highways and State Highways, are located in the States of Madhya Pradesh, Maharashtra, Uttar Pradesh, Gujarat and Karnataka.

The map below illustrates the locations of the Projects:



* *Map not to scale*

We operate and maintain our Projects through the Project SPVs, the key details of which are provided below:

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
1.	DBL Lucknow Sultanpur Highways Limited ("**DLSHL**")	Augmenting the existing road from 11.500 kilometer to 134.700 kilometer (approximately 127.425 kilometer) on the Lucknow-Sultanpur section of National Highway number 56 (new National Highway number 731) by four-laning thereof on design, build, operate and transfer (annuity) basis.	666.77	Uttar Pradesh
2.	DBL Kalmath Zarap Highways Limited ("**DKZHL**")	Augmenting the existing road from kilometer 406.030 to kilometer 450.170 (43.905 kilometer) on the Kalmath-Zarap section of National Highway number 17 (new National Highway number 66) by four-laning on design, build, operate and transfer (annuity) basis.	267.40	Maharashtra
3.	DBL Yavatmal Wardha Highways Private Limited ("**DYWHPL**")	Augment the existing road from kilometer 400.575 to kilometer 465.500 of Yavatmal-Wardha section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	370.55	Maharashtra
4.	DBL Tuljapur Ausa Highways Limited ("**DTAHL**")	Augmenting the existing road from kilometer 0.000 to kilometer 55.835 (existing chainage: kilometer 416.000 to kilometer 470.000) (approximately 67.428 kilometer) on the Tuljapur-Ausa (including Tuljapur bypass) section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	376.96	Maharashtra
5.	DBL Wardha Butibori Highways Private Limited ("**DWBHPL**")	Augmenting the existing road from kilometer 28.800 to kilometer 85.374 (approximately 59.374 kilometer) on the Wardha-Butibori section of National Highway number 361 by four-laning on design, build, operate and transfer (annuity) basis.	351.93	Maharashtra
6.	DBL Mahagaon Yavatmal Highways Private Limited ("**DMYHPL**")	Augmenting the existing road from kilometer 320.580 to kilometer 400.575 (approximately 80.195 kilometer) on the Mahagaon to Yavatmal section of National Highway number 361 by four-laning thereof on design, build, operate and transfer (annuity) basis.	450.42	Maharashtra
7.	DBL Ashoknagar Vidisha Tollways Limited ("**DAVTL**")	Augmenting the existing road from bypass junction of Ashoknagar (kilometer 0/10) to Bangla Chauraha (kilometer 35.68) (approximately 35.68 kilometer), on the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis.	107.04	Madhya Pradesh
8.	DBL Betul Sarni Tollways Limited ("**DBSTL**")	Augmenting the existing road from kilometer 0.00 (Kamani Gate Betul) to kilometer 124.10 (approximately 124.10 kilometer) on the section of State Highway number 43 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	372.30	Madhya Pradesh
9.	DBL Hata-Dargawan Tollways Limited ("**DHDTL**")	Augmenting the existing road from kilometer 0.00 (Damoh naka in Ilatta town) to kilometer 64.40 (at Dargawan Tiraha) (approximately 64.40 kilometer), section of the State Highway number 48, by intermediate-laning on build, operate and transfer (toll plus annuity) basis.	193.20	Madhya Pradesh

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
10.	DBL Silwani Sultanganj Tollways Limited ("**DBL Silwani**")	Augmenting the existing road from kilometer 0.00 to kilometer 75.995 (approximately 76.00 kilometer) on the Silwani-Sultanganj-Jaisinghnagar-Sagar Road section of State Highway number 15 by intermediate-laning / two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	228.00	Madhya Pradesh
11.	DBL Sitamau Suwasara Tollways Limited ("**DSSTL**")	Augment the existing road from kilometer 0/00 to kilometer 34/000 (approximately 34.97 kilometer) on the Sitamau-Basai-Suwasara section of major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	104.91	Madhya Pradesh
12.	DBL Mundi-Sanawad Tollways Limited ("**DMSTL**")	Augmenting the existing road from kilometer 0.00 (at Mundi) to kilometer 64.400 (at Sanawad town) (approximately 67.63 kilometer) on the Mundi-Punasa-Sulgaon- Sanawad section of the major district road by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	202.89	Madhya Pradesh
13.	DBL Uchera-Nagod Tollways Limited ("**DUNTL**")	Augmenting the existing road from kilometer 32.00 (near Nagod National Highway number 75) to kilometer 87.00 (near Uttar Pradesh Border) including 1.70 kilometer Nagod bypass (approximately 55.60 kilometer) on the section of State Highway number 56 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	166.80	Madhya Pradesh
14.	DBL Sardarpur Badnawar Tollways Limited ("**DSBTL**")	Augmenting the existing road from kilometer 0/00 to kilometer 43/300 (approximately 43.00 kilometer) on the Sardarpur-Badnawar Road section of State Highway number 34 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis	129.00	Madhya Pradesh
15.	DBL Patan Rehli Tollways Limited ("**DPRTL**")	Augmenting the existing road from kilometer 31/10 of State Highway number 15 Rehli-Gorjhamar-Patan Chok and cross the junction of kilometer 113/00 of Rehli Gourjhamar State Highway number 15 including bypass of Rehli which is about 4.4 kilometer and terminated at kilometer 38/10 (approximately 86.60 kilometer) on the section of State Highway number 15 by two-laning on design, build, finance, operate and transfer (toll plus annuity) basis.	259.80	Madhya Pradesh
16.	DBL Tikamgarh-Nowgaon Tollways Limited ("**DTNTL**")	Augmenting the existing road from Y-junction in kilometer 10/8 at Tikamgarh-Malehra road (State Highway number 10) to kilometer 107 of Jhansi-Nowgaon (National Highway number 76) (approximately 76.40 kilometer), the section of major district road by two-laning on build, operate and transfer (toll plus annuity) basis	229.20	Madhya Pradesh
17.	DBL Nadiad Modasa Tollways Limited ("**DNMTL**")	Improving the section Nadiad-Madhudha-Kathial-Kapadwanj-Bayad-Modasa from kilometer 0.60 to kilometer 109.00 on State Highway number 59 by strengthening and widening to two-laning on design, build, finance, operate and transfer (annuity) basis.	325.20	Gujarat

Sr. No.	Relevant Project SPV	Particulars of the Project (as per the Concession Agreements)	Lane Kilometers (in km)*	State
18.	DBL Bankhalafata-Dogawa Tollways Limited ("**DBDTL**")	Augmenting the existing three major district roads under package-I comprising (i) Bankhalafata-Dogawa-via-Borawa-Savardevala (23.67 kilometer); (ii) Punasa-Mundi-Singhaji (thermal power plant) and Singhaji bridge approach road (13.30 kilometer); and (iii) Beed-Mundi-Devala-Khutala-Attoot-NVDA (28.43 kilometer) (total length of 65.40 kilometer) by intermediate-laning / two-laning on design, build, finance, operate and transfer (annuity) basis.	196.20	Madhya Pradesh
19.	DBL Jaora-Sailana Tollways Limited ("**DJSTL**")	Augmenting the existing four major district roads under package-IV comprising (i) Jaora-Piplodha-Jalandharkheda and Piploda-Sailana (42.27 kilometer); (ii) Raipururiya-Petlabad-Bamniya (18.18 kilometer); (iii) Jawad-Khoh (21.07 kilometer); and (iv) Soyat-Pidawa (6.25 kilometer) (total length of 87.77 kilometer) by intermediate-laning / two-laning on design, build, finance, operate and transfer (annuity) basis.	263.31	Madhya Pradesh
20.	DBL Mundargi Harapanahalli Tollways Limited ("**DMHTL**")	Augmenting the existing State Highway from Mundargi-Hadagali-Harapanahalli (approximate length 51.21 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.	153.63	Karnataka
21.	DBL Hassan Periyapatna Tollways Limited ("**DHPTL**")	Augmenting the existing State Highway from Hassan-Ramanathapura-Periyapatna (approximate length of 73.69 kilometer) on design, build, finance, operate, maintain and transfer (annuity) basis.	221.07	Karnataka
22.	DBL Hirekerur Ranibennur Tollways Limited ("**DHRTL**")	Augmenting the existing State Highway from Hirekerur-Ranibennur (approximate length 55.69 kilometers) on design, build, finance, operate, maintain and transfer (annuity) basis.	167.07	Karnataka
23.	Jalpa Devi Tollways Limited ("**JDTL**")	Augmenting the existing road National Highway number 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of National Highway number 3 by four-laning on design, build, finance, operate and transfer (toll) basis.	506.70	Madhya Pradesh
24.	Suryavanshi Infrastructure Private Limited ("**Suryavanshi Infra**")	Reconstruction, strengthening, widening and rehabilitation of Mandsaur-Sitamau section from existing kilometer stone 18 and ends at the existing kilometer stone 62 at Chambal River (Rajasthan border) (total 44 kilometer) on State Highway number 14 section, and its operation and maintenance, on build, operate and transfer basis.	132.00	Madhya Pradesh

* *The calculation of lane kilometres is done as per the circular of MoRTH (Ref. No.341/PS/Secretary/RTH/2018) dated March 1, 2018 ("**MoRTH Measurement Circular**"). As per the MoRTH Measurement Circular, the linear measurement of the project highway has been dispensed with.).*

The concessioning authorities for the State Projects are Madhya Pradesh Road Development Corporation Limited ("**MPRDC**"), Karnataka Road Development Corporation Limited ("**KRDCL**"), Roads and Buildings Department, Government of Gujarat ("**RBDGG**") and for the National Highway Projects are National Highways Authority of India ("**NHAI**") and Ministry of Road Transport and Highways, Government of India ("**MoRTH**") (collectively, the "**Concessioning Authorities**"). Each of the concessioning authorities is a government entity.

The Projects are divided into four types on the basis of the implementation mode: (i) hybrid annuity; (ii) toll; (iii) annuity; and (iv) annuity plus toll. Key details of these models are set out below:

- The hybrid annuity model ("**HAM**") was introduced in January 2016 by the Government with an intent to share the financial risk with the developers, given that infrastructure projects are capital intensive in nature. In a HAM project, the concessioning authority shares a portion of the total project cost during the construction phase. As a mix of EPC and annuity models, HAM reduces the financial burden of a concessionaire during the project construction phase and provides an assured revenue in form of annuities, interest on reducing balance of completion cost (BCC) and O&M payments linked to inflation in the operational phase. Annuity payments eliminate the risk of income fluctuations resulting from changes in traffic volumes. Going forward, HAM is expected to remain the preferred mode of contract for both the Government as well as developers.

- In an annuity project or where the annuity component of an annuity plus toll project is concerned, a fixed amount is paid semi-annually as annuity by the respective Concessioning Authority pursuant to the applicable concession agreement. Income from the project is thus assured to the extent of the annuity to be collected, thus eliminating or reducing our risk of income fluctuations resulted from changes in traffic volumes.

- In a toll-based project or where the toll component of an annuity plus toll project is concerned, concessionares are allowed to collect tolls from vehicles that use their project carriageways during the concession period at rates notified by the relevant Concessioning Authority, as updated from time to time. Income collected on a toll basis thus fluctuates as traffic volume changes, which is a risk inherent in the operation of our toll roads. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
Bid Criteria	Bid project cost ("**BPC**") and first year O&M payable during operation (Both BPC and O&M are indexed with inflation from bid date at every payment invoice)	One time grant receivable from the relevant Concessioning Authority or annual premium payable to the relevant Concessioning Authority	Fixed half yearly payment (annuity) throughout the concession period	Fixed half yearly payment (annuity) throughout the concession period
Bid Parameter	Lowest lifecycle cost considering net present value of BPC & O&M bids	Lowest grant or highest premium, as the case maybe	Lowest fixed half year payment (annuity)	Lowest fixed half year payment (annuity)
Payments during Construction	40% of the BPC, linked to physical progress in five equal instalments	Grant if payable else Nil	Nil	Nil
Payments during Operation/Revenue	**60% of the BPC is paid in bi-annual annuities over 15 years** after COD along with interest at 3 per cent above the RBI Bank Rate and O&M payment as per bid norms	**Actual Toll Collection.** Toll rates are revised and notified annually by the relevant Concessioning Authority with a fixed formula which consists of one fixed component (3% annual) and second inflation linked (40% of	**Fixed Half Yearly Payment**	**Fixed Half Yearly Payment and Actual Toll Collection.** Toll Rates are revised and notified annually by Authority with a fixed formula

Salient Features of the Projects				
Particulars	**HAM**	**Toll**	**Annuity**	**Annuity Plus Toll**
		wholesale price index)		
Concession Period	Construction period and 15 years of operations	As per the concession agreement (which varies between 12 to 26 years)	As per the concession agreement (which is usually up to 15 years)	As per the concession agreement (which is usually up to 15 years)
Revenue Risk	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual annuity, interest and O&M payments are made by the relevant Concessioning Authority irrespective of the traffic.	The revenue is directly linked with the actual traffic plying on the project stretch. This risk is partially mitigated by annual revision in toll rates with fixed increase of 3% and 40% of variation in WPI.	There is no revenue risk as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by the relevant Concessioning Authority irrespective of the traffic.	There is no revenue risk with respect to annuity payments as it is not dependent on actual traffic plying on project stretch and the bi-annual payments are made by Concessioning Authority irrespective of the traffic. The toll revenue is directly linked with the actual traffic plying on the project stretch.

Factors Affecting Results of Operations

The Project SPVs' business, prospects, results of operations and financial condition are affected by a number of factors, including the following key factors:

Inflation and Interest rate risk

In some of our concession agreements, our income from interest on balance completion cost is linked with RBI Bank Rate and income from operation and maintenance is linked with the movements of inflation indices in a relevant period. However, there are no specific provisions in our concession agreements protecting us against increases in interest rates on our borrowings or cost of raw materials except to the limited extent of rates linked to RBI Bank Rate and inflation. Our lenders may have the right to periodically adjust our interest rates and our applicable interest rates may increase based on their review of our credit profile and perceived risks in our operations. Our operational costs may also increase substantially if the O&M Contractor fails to perform its duties as per the O&M Agreements. Many factors causing such adverse changes are beyond our control and we are usually not able to demand matching increases in our tolling rates or annuities. Even if we invoke the inflation adjustment clauses in some of our concession agreements, the increase may not be adequate to offset the negative impact of increases in interest rates or the O&M costs.

Lower than expected returns on our investment in our Projects

In our annuity BOT projects or BOT projects with an annuity component, our annuity revenue depends on the fixed amounts paid to us by our government clients. The amount of annuity is not necessarily linked to our actual costs of construction and may only be deducted pursuant to the relevant concession agreements. In our toll-based projects or projects with a toll component, our toll revenue depends on the tolling rates set by the relevant concessioning authority in accordance with the relevant concession agreements and the actual traffic volume using our roads. Our decision to undertake BOT road projects is largely based on our estimate of our expected toll revenue, which in turn partly based on our estimate of the traffic volume using our roads.

Traffic volume may be affected by a number of factors beyond our control, including general economic conditions, alternate routes, alternate means of transportation, location of toll plazas, weather conditions, demographic changes, fuel prices, reduction in commercial or industrial activities in the regions served by the roads and natural disasters. Thus the actual traffic volume may be lower than our estimate. Decreases in traffic volume could result in a significant loss of our toll revenue. In addition, our concession agreements typically limit and regulate increases in tolling rates. Usually, the NHAI sets the applicable tolling rates and we may not be able to increase tolling rates to cover increases in our operational costs.

In some of our concession agreements, adjustments of annuities are linked to the movements of inflation indices in a relevant year. However, there are no provisions in our concession agreements protecting us against increases in interest rates or cost of raw materials. Our lenders may have the right to periodically adjust our interest rates and our applicable interest rates may increase based on their review of our credit profile and perceived risks in our operations. Our operational costs may also increase substantially during the operation of our BOT projects due to shortage of raw materials or substantial increases in prices of raw materials required for operation and maintenance beyond the permitted scope of adjustment due to occurrence of certain events under the relevant provisions of the concession agreements. Many factors causing such adverse changes are beyond our control and we are usually not able to demand matching increases in our tolling rates over and above fixed increase of 3% and 40% of variation in WPI or annuities. Even if we invoke the inflation adjustment clauses in some of our concession agreements, the increase may not be adequate to offset the negative impact of increases in interest rates or cost of raw materials.

Under the relevant concession agreements, our Project SPVs have rights to construct and operate the road projects exclusively for fixed periods of time and we receive annuities and/or tolls, as the case may be, for the use of our roads. However, we may be faced with competition from new roads developed by State Governments, which are not within our control. For example, MPRDC has the right to construct competing roads after a prescribed period of time, pursuant to the terms of the concession agreements. State Governments may not always charge for the use of these roads. There can be no assurance that our road projects will compete effectively against such roads that connect the same locations. Any material decrease in the actual traffic volume as compared to our forecasted traffic volume could have a material adverse effect on our cash flows from our tolling projects, which in turn can adversely affect our business, prospects, financial condition and results of operation.

As our BOT projects often require significant capital investment with potential returns spread over a long period of time, inadequate toll revenues and annuities collected from our projects may result in a low return or even loss on our investment, which may adversely affect our liquidity, business, financial condition and results of operation.

The road sector in India

We derive and expect to continue to derive in the foreseeable future, most of our revenues and operating profits from India. Changes in macroeconomic conditions generally impact the road industry and could negatively impact our business.

Accordingly, our business is highly dependent on the state of development of the Indian economy and the macroeconomic environment prevailing in India. Since the use of our Projects, our expansion plans and future projects depend or will depend on macroeconomic factors that may negatively impact demand the development of road infrastructure projects in India, or the timely commencement of their operations could in turn have a material adverse effect on our growth prospects, business and cash flows. In addition, access to financing may be more expensive or not available on commercially acceptable terms during economic downturns. Any of these factors and other factors beyond our control.

General economic conditions in India

Our performance and the growth are dependent on the performance of the Indian economy, which, in turn, depends on various factors. The Indian economy has been affected by the recent global economic uncertainties, volatility in interest rates, currency exchange rates, commodity and electricity prices, adverse conditions affecting agriculture and various other macroeconomic factors.

Conditions outside India, such as a slowdown or recession in the economic growth of other major countries and regions, especially in U.S., Europe and China, have an impact on the growth of the Indian economy, and GoI policy may change in response to such conditions. While recent Indian governments have been focused on encouraging private participation in the infrastructure sector, any adverse change in policy could result in a further slowdown of the Indian economy. The rate of economic liberalisation could decrease, and specific laws and policies affecting foreign investment, currency exchange rates and other matters affecting investment in India could change as well. In the road sector, there can be no assurance that the GoI's engagement with and outreach to private sector operators, including the Trust, will continue in the future. A significant change in India's economic liberalisation and deregulation policies, in particular, those relating to the road sector, could disrupt business and economic conditions in India generally and our business in particular. In addition, adverse developments in the Indian economy could also impact companies and banks that provide services to us. For example, on March 5, 2020 and November 17, 2020, respectively, the GoI, in consultation with RBI placed Yes Bank Limited and Lakshmi Vilas Bank under moratorium, imposed limitations on their operations as well as on withdrawals by depositors and payments to creditors over certain specified amounts for a limited period of time from the date of such moratorium coming into effect. The limitations on operations and the moratorium were subsequently lifted in both cases. The occurrence of any such development in the future may impact our banking channels, and we may or may not be able to recover our deposits, in part or in full. This could result in potential write-offs on our books of accounts. Additionally, an increase in trade deficit or a decline in India's foreign exchange reserves could negatively impact interest rates and liquidity, which could adversely impact the Indian economy and our business.

Dependence on support from governmental entities

Any significant changes in a particular government's policy for the road infrastructure sector could have a significant effect on the Trust's revenues, expenditure and growth prospects as they relate to future projects. The results of operations of future projects are likely to be affected by budgetary allocations made by the various central and state government agencies for the infrastructure sector as well as funding provided by international and multilateral development finance institutions for road infrastructure projects.

Further, trends in particular government's approach to infrastructure – such as slowdowns in the volume of build- operate-transfer projects for which concessions are granted – may be likely to affect the Trust's business, financial condition and results of operations. Policies relating to tolling methodologies, exemptions and changing political or social imperatives can also affect the Trust's or the Project SPVs' businesses.

Tax benefits for road infrastructure sector in India

The Project SPVs are entitled for certain benefits under Section 80-IA of the Income Tax Act, 1961, as amended, if certain conditions are satisfied. However, the benefits to the Project SPVs may expire at various points of time. Any expiry, termination or Government of India withdrawal of these tax benefits could result in an increase in the Trust's tax expenses, thereby adversely affecting the Trust's, or the Project SPVs' results of operations and cash flows.

Competition

The Trust faces competition from other road operators, financial investors and other InvITs in acquiring profitable concessions for future projects. The competition for road projects varies depending on the size, nature and complexity of the project and on the geographical region in which the project is to be executed. Some competitors may have greater financial resources, economies of scale and operating efficiencies than the Trust.

Basis of Preparation of Audited Special Purpose Combined Financial Statements

The Audited Special Purpose Combined Financial Statements have been prepared in accordance with Ind AS as notified by Ministry of Corporate Affairs under sections 133 of the Companies Act, 2013 read with Rule 3 of the Companies (Indian Accounting Standards) Rules, 2015 and Companies (Indian Accounting Standards) Amendment Rules 2016.

The Audited Special Purpose Combined Financial Statements consist of combined balance sheets as at December 31 2020, March 31, 2020, March 31, 2019 and March 31, 2018, combined statement of profit and loss, combined cash flow statement and combined statement of changes in equity for the nine months ended December 31 2020 and for the year ended March 31, 2020, March 31, 2019 and March 31, 2018 and combined statement of net assets at fair value as at December 31, 2020 and the combined statement of total return at fair value as at December 31, 2020, a summary of significant accounting policies, notes and other explanatory information. The Audited Special Purpose Combined Financial Statements have been prepared on a historical cost basis, except for certain assets and liabilities which have been measured at fair value.

The Audited Special Purpose Combined Financial Statements are prepared using uniform accounting policies for like transactions and other events in similar circumstances. The financial statements of the Trust Group used for the purpose of combination are drawn periods up to and including the nine months ended December 31, 2020.

Combination procedure:

(a). combine like items of assets, liabilities, equity, income, expenses and cash flows of the Trust Group; and
(b). eliminate in full intra Trust Group assets and liabilities, income, expenses and cash flows relating to transactions between the Trust Group. Profit or loss and each component of other comprehensive income are attributed to the equity holders of the Trust Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance.

Significant Accounting Policies

Use of estimates

The preparation of the combined financial statements in conformity with Ind AS requires management to make estimates, judgments and assumptions. These estimates, judgments and assumptions affect the application of accounting policies and the reported amounts of assets and liabilities, the disclosures of contingent liabilities at the date of the financial statements and reported amounts of revenues and expenses during the period. Accounting estimates could change from period to period. Actual results could differ from those estimates. Appropriate changes in estimates are made as management becomes aware of changes in circumstances surrounding the estimates. Changes in estimates are reflected in the financial statements in the period in which changes are made and, if material, their effects are disclosed in the notes to the financial statements. This note provides an overview of the areas that involved a higher degree of judgement or complexity and of items which are more likely to be materially adjusted due to estimates and assumptions turning out to be different than those originally assessed. Detailed information about each of these estimates and judgements is included in the relevant note. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

A. ***Judgements in applying accounting policies:***

The judgements, apart from those involving estimations that the Trust Group has made in the process of applying its accounting policies and that have a significant effect on the amounts recognised in these financial statements pertain to useful life of assets. The Trust Group is required to determine whether its intangible assets have indefinite or finite life which is a subject matter of judgement.

B. ***Current versus non-current classification***

The Trust Group presents assets and liabilities in the balance sheet based on current/ non-current classification. An asset is treated as current when it is:

- Expected to be realised or intended to be sold or consumed in normal operating cycle
- Held primarily for the purpose of trading
- Expected to be realised within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period. All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period The Project SPV Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The operating cycle is the time between the acquisition of assets for processing and their realisation in cash and cash equivalents. The Project SPV Group has identified twelve months as its operating cycle.

Functional and presentation currency

These financial statements are presented in Indian Rupees (INR), which is also the Trust Group's functional currency. All amounts have been rounded-off to the nearest million, unless otherwise indicated.

Property, plant and equipment and Depreciation

Items of property, plant and equipment are measured at cost, which includes capitalised borrowing costs, less accumulated depreciation and accumulated impairment losses, if any. Cost of an item of property, plant and equipment comprises its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates, any directly attributable cost of bringing the item to its working condition for its intended use and estimated costs of dismantling and removing the item and restoring the site on which it is located. If significant parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment. Any gain or loss on disposal of an item of property, plant and equipment is recognised in profit or loss Subsequent expenditure is capitalised only if it is probable that the future economic benefits associated with the expenditure will flow to the Trust Group. Depreciation is calculated on cost of items of property, plant and equipment less their estimated residual values over their estimated useful lives using the straight-line method, and is generally recognised in the statement of profit and loss. Assets acquired under finance leases are depreciated over the shorter of the lease term and their useful lives unless it is reasonably certain that the Trust Group will obtain ownership by the end of the lease term. Freehold land is not depreciated. Depreciation on additions (disposals) is provided on a pro-rata basis i.e. from (upto) the date on which asset is ready for use (disposed of).

Intangible Assets

(a) ***Other Intangible Assets***

Intangible assets that the Trust Group controls and from which it expects future economic benefits are capitalised upon acquisition at cost comprising the purchase price and directly attributable costs to prepare the assets for its intended use. Intangible assets that have finite lives are amortised over their useful lives by the straight line method.

(b) ***Service concession arrangements (Toll Rights)***

The Trust Group recognises an intangible asset arising from a service concession arrangement to the extent the Trust Group has right to charge for the use of concession infrastructure. Intangible asset would be initially measured at cost. The fair value, at the time of initial recognition of such an intangible asset received as consideration for providing construction or upgrade services in a service concession arrangement, is regarded to be its cost. Borrowing costs directly attributable to the construction of a qualifying asset are capitalised as part of the cost. Subsequent to initial recognition the intangible asset is measured at cost less accumulated amortisation and accumulated impairment losses.

Subsequent costs:

Subsequent costs are capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates.

Amortisation:

Amortisation is calculated over the cost of the asset, or other amount substituted for cost, less its residual value. Amortisation is recognised in statement of profit and loss on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. The estimated useful life of an intangible asset in a service concession arrangement is a period from when the Trust Group has right to charge the user of infrastructure for such use to the end of the concession period.

Impairment of non-financial assets:

The Trust Group assesses at each balance sheet date whether there is any indication that an asset or cash generating unit (CGU) may be impaired. If any such indication exists, the Trust Group estimates the recoverable amount of the asset. The recoverable amount is the higher of an asset's or CGU's net selling price or its value in use. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. An impairment loss is recognised if the carrying amount of an asset or CGU exceeds its recoverable amount. Impairment losses are recognised in the statement of profit and loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis. An impairment loss in respect of goodwill is not

reversed. For other assets, an impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised

Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial Assets

Initial Recognition

The Trust Group recognizes financial assets when it becomes a party to the contractual provisions of the instrument. All financial assets are recognized at fair value on initial recognition, except for trade receivables which are initially measured at transaction price. Transaction costs that are directly attributable to the acquisition or issue of financial assets that are not at fair value through profit or loss are added to the fair value on initial recognition.

Subsequent measurement

A financial asset is subsequently measured at amortised cost if it is held within a business model whose objective is to hold the asset in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Derecognition

The Trust Group derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the Trust Group neither transfers nor retain substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

Impairment of financial asset

For impairment of financial assets, Trust Group applies expected credit loss (ECL) model. Following financial assets and credit risk exposure are covered within the ECL model:

(a). Financial assets that are debt instruments, and are measured at amortised cost e.g. loans, debt securities, deposits, trade receivables and bank balance
(b). Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 115.

The Trust Group follows 'simplified approach' for recognition of impairment loss allowance on trade receivables including receivables recognised under service concession arrangements.

The application of simplified approach does not require the Trust Group to track changes in credit risk. Rather, it recognises impairment loss allowance based on lifetime ECLs at each reporting date, right from its initial recognition. For recognition of impairment loss on other financial assets and risk exposure, the Trust Group determines that whether there has been a significant increase in the credit risk since initial recognition. If credit risk has not increased significantly, 12-month ECL is used to provide for impairment loss. However, if credit risk has increased significantly, then the impairment loss is provided based on lifetime ECL

Financial liabilities

Initial recognition

The Trust Group initially recognises borrowings, trade payables and related financial liabilities on the date on which they are originated. All other financial instruments (including regular-way purchases and sales of financial assets) are recognised on the trade date, which is the date on which the Trust Group becomes a party to the contractual provisions of the instrument.

Non-derivative financial liabilities are initially recognised at fair value, net of transaction costs incurred.

Subsequent measurement

Financial liabilities are subsequently carried at amortized cost using the effective interest method, except for contingent consideration recognized in a business combination which is subsequently measured at fair value through profit and loss. For trade and other payables maturing within one year from the Balance Sheet date, the carrying amounts approximate fair value

due to the short maturity of these instruments.

Derecognition

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the statement of profit or loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis, to realise the assets and settle the liabilities simultaneously.

Leases

The Trust Group assesses whether a contract contains a lease, at inception of a contract. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the Trust Group assesses whether: (i) the contract involves the use of an identified asset (ii) the Trust Group has substantially all of the economic benefits from use of the asset through the period of the lease and (iii) the Trust Group has the right to direct the use of the asset. At the date of commencement of the lease, the Trust Group recognizes a right-of-use asset ("ROU") and a corresponding lease liability for all lease arrangements in which it is a lessee, except for leases with a term of twelve months or less (short-term leases) and low value leases

For these short-term and low value leases, the Trust Group recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease.

Certain lease arrangements include the option to extend or terminate the lease before the end of the lease term. ROU assets and lease liabilities includes these options when it is reasonably certain that they will be exercised.

The right-of-use assets are initially recognized at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or prior to the commencement date of the lease plus any initial direct costs less any lease incentives. They are subsequently measured at cost less accumulated depreciation and impairment losses.

Right-of-use assets are depreciated from the commencement date on a straight-line basis over the shorter of the lease term and useful life of the underlying asset. Right of use assets are evaluated for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. For the purpose of impairment testing, the recoverable amount (i.e. the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset basis unless the asset does not generate cash flows that are largely independent of those from other assets. In such cases, the recoverable amount is determined for the Cash Generating Unit (CGU) to which the asset belongs.

The lease liability is initially measured at amortized cost at the present value of the future lease payments. The lease payments are discounted using the interest rate implicit in the lease or, if not readily determinable, using the incremental borrowing rates in the country of domicile of these leases. Lease liabilities are remeasured with a corresponding adjustment to the related right of use asset if the Trust Group changes its assessment if whether it will exercise an extension or a termination option.

Lease liability and ROU asset have been separately presented in the Balance Sheet and lease payments have been classified as financing cash flows.

Provisions and Contingencies

Provisions involving substantial degree of estimation in measurement are recognized when there is a present obligation as a result of past events, it is probable that there will be an outflow of resources and a reliable estimate can be made of the amount of the obligation. These are reviewed at each balance sheet date and adjusted to reflect the current best estimate. Contingent liabilities are not provided for and are disclosed by way of notes.

If the effect of the time value of money is material, provisions are discounted using a current pretax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost in the statement of profit and loss.

Revenue recognition

Contract revenue includes the initial amount agreed in the contract plus any variations in contract work, claims and incentive payments, to the extent that it is probable that they will result in revenue and can be measured reliably.

If the outcome of a construction contract can be estimated reliably, contract revenue is recognised in profit or loss in proportion to the stage of completion of the contract. The stage of completion is assessed by reference to surveys of work performed. Otherwise, contract revenue is recognised only to the extent of contract costs incurred that are likely to be recoverable. Revenue related to construction or upgrade services provided under a service concession arrangement is recognised based on the stage of completion of the work performed. Operation or service revenue is recognised in the period in which the services are provided by the Trust Group Income from toll is recognised on receipt basis. Interest income is recognised in the Statement of Profit and Loss using the effective interest method in accordance with the service concession agreements. Other income comprises of interest income, dividend income, foreign currency gain on financial assets and liabilities and export benefits.

Borrowing Cost

Borrowing costs are interest and other costs (including exchange differences relating to foreign currency borrowings to the extent that they are regarded as an adjustment to interest costs) incurred in connection with the borrowing of funds. Borrowing costs directly attributable to acquisition or construction of an asset which necessarily take a substantial period of time to get ready for their intended use are capitalised as part of the cost of that asset. Other borrowing costs are recognised as an expense in the period in which they are incurred.

Earnings per Unit

Basic earnings per unit is computed using the net profit or loss for the year attributable to the unit holders and weighted average number of units outstanding during the year. Diluted earnings per unit is computed using the net profit or loss for the year attributable to the unit holders and weighted average number of equity and potential units outstanding during the year, except where the result would be anti-dilutive.

Cash Flow statement

Cash flows are reported using the indirect method, whereby profit for the period is adjusted for the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments and item of income or expenses associated with investing or financing cash flows. The cash flows from operating, investing and financing activities of the Trust Group are segregated.

Employee Benefits

Short Term Employment benefits

All employee benefits payable wholly within twelve months of rendering the service are classified as short-term employee benefits. Benefits such as salaries, wages etc. and the expected cost of exgratia are recognized in the period in which the employee renders the related service. A liability is recognised for the amount expected to be paid if the Trust Group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

Post Employment Employee Benefits

Retirement benefits to employees comprise payments to government provident funds, gratuity fund and Employees State Insurance.

Defined Contribution Plans

The Trust Group's contribution to defined contributions plans such as Provident Fund, Employee State Insurance are recognised in the Statement of Profit and Loss in the year when the contributions to the respective funds are due. There are no other obligations other than the contribution payable to the respective Funds.

Defined Benefit Plans

Gratuity liability is defined benefit obligation. The Trust Group's net obligation in respect of the gratuity benefit scheme is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value. The present value of the obligation under such defined benefit plan is determined based on actuarial valuation by an independent actuary, using the projected unit credit method, which recognizes each period of service as giving rise to additional unit of employee benefit entitlement and measures each unit separately to build up the final obligation.

The obligation is measured at the present value of the estimated future cash flows. The discount rates used for determining the present value of the obligation under defined benefit plan, are based on the market yields on Government securities as at the Balance Sheet date.

Remeasurement of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets

(excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognised immediately in Other Comprehensive Income. Net interest expense (income) on the net defined liability (assets) is computed by applying the discount rate, used to measure the net defined liability (asset), to the net defined liability (asset) at the start of the financial year after taking into account any changes as a result of contribution and benefit payments during the year. Net interest expense and other expenses related to defined benefit plans are recognised in Statement of Profit and Loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in Statement of Profit and Loss. The Trust Group recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs. Actuarial gains/losses are recognized in the other comprehensive income.

Income Taxes

Current Tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax reflects the best estimate of the tax amount expected to be paid or received after considering the uncertainty, if any, related to income taxes. It is measured using tax rates (and tax laws) enacted or substantively enacted by the reporting date Current tax assets and current tax liabilities are offset only if there is a legally enforceable right to set off the recognised amounts, and it is intended to realise the asset and settle the liability on a net basis or simultaneously. Minimum alternative tax (MAT) credit is recognized as an asset only when and to the extent there is convincing evidence that the Trust Group will pay income tax higher than that computed under MAT, during the year that MAT is permitted to be set off under the Income Tax Act, 1961 (specified year). In the year, in which the MAT credit becomes eligible to be recognized as an asset the said asset is created by way of a credit to the Statement of profit and loss and shown as MAT credit entitlement. The Trust Group reviews the same at each balance sheet date and writes down the carrying amount of MAT credit entitlement to the extent there is no longer convincing evidence to the effect that the Trust Group will pay income tax higher than MAT during the specified year.

Appendix C to Ind AS 12 Uncertainty over Income Tax Treatments: The interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of Ind AS 12 and does not apply to taxes or levies outside the scope of Ind AS 12, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The interpretation specifically addresses the following:

- Whether an entity considers uncertain tax treatments separately
- The assumptions an entity makes about the examination of tax treatments by taxation authorities
- How an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates

The Trust Group has determined whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty has been followed. In determining the approach that better predicts the resolution of the uncertainty, the Trust Group considers, for example, (a) how it prepares its income tax filings and supports tax treatments; or (b) how the Trust Group expects the taxation authority to make its examination and resolve issues that might arise from that examination.

The amendment is effective from April 1, 2019. The Trust Group has evaluated the effect of Ind AS 12 amendment on the financial statements and concluded that there is no material impact on the retained earnings and on its profit for the year ended March 31, 2020.

Deferred Tax

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the corresponding amounts used for taxation purposes. Deferred tax is also recognised in respect of carried forward tax losses and tax credits. Deferred income tax assets and liabilities are measured using tax rates and tax laws that have been enacted or substantively enacted by the balance sheet date and are expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of changes in tax rates on deferred income tax assets and liabilities is recognized as income or expense in the period that includes the enactment or the substantive enactment date. A deferred income tax asset is recognized to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and tax losses can be utilized. The Trust Group offsets current tax assets and current tax liabilities, where it has a legally enforceable right to set off the recognized amounts and where it intends either to settle on a net basis, or to realize the asset and settle the liability simultaneously. The income tax provision for the interim period is made based on the best estimate of the annual average tax rate expected to be applicable for the full financial year.

Assets Held for Sale

Non-current assets are classified as held for sale when their carrying amount will be recovered principally through a sale

transaction rather than continuing use and a sale is highly probable.

Assets designated as held for sale are held at the lower of carrying amount at designation and fair value less costs to sell.

Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

- In the principal market for the asset or liability, or
- In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the Trust Group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

For cash and other liquid assets, the fair value is assumed to approximate to book value, given the short term nature of these instruments. For those items with a stated maturity exceeding twelve months, fair value is calculated using a discounted cash flow methodology.

A fair value measurement of a non-financial asset considers a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another.

The Trust Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Trust Group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, the Trust Group has determined classes of assets and liabilities based on the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

Segment information

The Project SPV Group is engaged in "Road Infrastructure Projects" which in the context of Ind AS 108 "Operating Segment" is considered as the only segment. The Project SPV Group's activities are restricted within India and hence, no separate geographical segment disclosure is considered necessary.

Principal Components of Combined Statement of Profit and Loss

Income

Our total income consists of revenue from operations and other income.

Revenue from operations

Revenue from operations primarily comprises contract revenue, toll plaza receipts, contract receipts (utility shifting), finance income, interest income from NHAI / MoRTH, income from change in scope and other operating revenue.

- ***Contract Revenue***: Contract revenue represents cost incurred for constructing the road and is funded by construction support or grant from Concessioning Authorities, banks and financial institutions and promoters' contribution. Such construction work is not undertaken by the Project SPVs themselves. Accordingly, the revenue is equivalent to the costs incurred.

- ***Toll plaza receipts***: Toll plaza receipts consist of income arising out of toll collection is the income derived from the tolling operations by the Project SPVs. This includes toll revenue collected by Project SPVs as per the respective concession

agreements in respect of different categories of vehicles using the Projects.

- ***Finance Income***: Finance income consists of interest income on financial assets which is created in accordance with Ind AS by adopting financial asset model for future annuity receivables from the Concessioning Authorities.

- ***Contract revenue (utility shifting)***: Contract revenue (utility shifting) represents cost incurred for additional work which is mentioned in the scope of the relevant concession agreements. Such work is not undertaken by the Project SPV themselves.

- ***Income from change in scope***: Income from change in scope represents cost incurred for additional work which is not mentioned in scope of the concession agreements. Such work is not undertaken by the Project SPV themselves.

- ***Interest Income from NHAI/MoRTH***: This income represents interest earned on the completion cost remaining to be paid by NHAI/ MoRTH as on the COD date.

- ***Other operating revenue***: Other operating revenue primarily consists of the revenue from NHAI or MoRTH on account of operation and maintenance and bonus for early completion.

Other income

Other income primarily consists of interest income, which comprises interest from banks on deposits, interest on deposits with others and interest on income tax refund, and other non-operating income, which comprises deferred income on deposits, profit on sale of mutual funds and others.

Expenses

Our expenses consist of cost of construction, employee benefits expense, finance costs, depreciation and amortization expense and other expenses.

- ***Cost of Construction***: Cost of construction primarily comprises cost of construction, subcontractor charges (utility), change in scope expenses, independent engineer fees and operation and maintenance charges.

- ***Employee benefits expense***: Employee benefits expenses primarily comprise salaries, wages and bonus, contribution towards provident fund and staff welfare expense.

- ***Finance costs***: Finance costs primarily comprise interest on borrowings, interest on other financial liability and other borrowing costs.

- ***Depreciation and amortization expenses***: Depreciation and amortization expenses include depreciation on tangible assets and amortization of intangible assets.

- ***Other expenses***: Other expenses primarily comprise major maintenance expense, legal and professional charges, electricity expenses and other expenses.

Result of Operations

The following table sets forth certain information with respect to the results of operations of the Initial Portfolio Assets for the periods indicated:

Particulars	For the period ended December 31, 2020		For the year ended March 31, 2020		For the year ended March 31, 2019		For the year ended March 31, 2018	
	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)
Revenue from Operations	8,904.94	98.16	12,860.54	99.14	38,333.21	99.08	25,892.08	99.85
Other income	166.93	1.84	111.54	0.86	354.70	0.92	39.85	0.15
Total Income	**9,071.87**	**100.00**	**12,972.08**	**100.00**	**38,687.91**	**100.00**	**25,931.93**	**100.00**
Expenses								
Cost of construction	1,763.57	19.44	5,864.99	45.21	35,039.87	90.57	23,619.29	91.08
Employee benefits expense	8.72	0.10	11.20	0.09	5.46	0.01	33.76	0.13
Finance costs	3,472.10	38.27	4,432.60	34.17	3,784.78	9.78	1,975.55	7.62
Depreciation and amortization expense	420.73	4.64	560.20	4.32	490.58	1.27	240.15	0.93
Other expenses	589.08	6.49	680.18	5.24	699.42	1.81	415.62	1.60
Total Expenses	**6,254.20**	**68.94**	**11,549.17**	**89.03**	**40,020.11**	**103.44**	**26,284.37**	**101.36**
Profit/(loss) before exceptional items and tax	2,817.67	31.06	1,422.90	10.97	(1,332.21)	(3.44)	(352.44)	(1.36)
Exceptional items	-		-		-	-	-	
Profit / (loss) before tax	**2,817.67**	**31.06**	**1,422.90**	**10.97**	**(1,332.21)**	**(3.44)**	**(352.44)**	**(1.36)**
Tax expenses								
- Current tax	54.96	0.61	168.88	1.30	0.10	0.00	11.37	0.04
- Deferred tax	2.84	0.03	(15.08)	(0.12)	(768.87)	(1.99)	752.64	2.90
- MAT Credit	-		0.24	0.00	(15.25)	(0.04)	-	-
- Income Tax for earlier years	(151.25)	(1.67)	-	-	-	-	-	-
Profit / (Loss) for the period from continuing operations	**2,911.12**	**32.09**	**1,268.86**	**9.78**	**(548.19)**	**(1.42)**	**(1,116.45)**	**(4.31)**
Profit/(loss) from discontinued operations	-	-	-	-	-	-	-	-
Tax expenses of discontinued operations	-	-	-	-	-	-	-	-
Profit/(loss) for the period	**2,911.12**	**32.09**	**1,268.86**	**9.78**	**(548.19)**	**(1.42)**	**(1,116.45)**	**(4.31)**

Particulars	For the period ended December 31, 2020		For the year ended March 31, 2020		For the year ended March 31, 2019		For the year ended March 31, 2018	
	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)	(₹ in million)	Percentage of Total Income (%)
Other Comprehensive Income								
A. (i) Items that will not be reclassified to profit or loss	-	-	-	-	-	-	-	-
(ii) Income tax relating to items that will not be reclassified to profit or loss	-	-	-	-	-	-	-	-
B. (i) Items that will be reclassified to profit or loss	-	-	-	-	-	-	-	-
(ii) Income tax relating to items that will be reclassified to profit or loss	-	-	-	-	-	-	-	-
Total Comprehensive Income for the period (Comprising Profit (Loss) and Other Comprehensive Income for the period)	**2,911.12**	**32.09**	**1,268.86**	**9.78**	**(548.19)**	**(1.42)**	**(1,116.45)**	**(4.31)**

Nine months ended December 31, 2020

Total Income

Total income for the nine months ended December 31, 2020 was ₹ 9,071.87 million which primarily consisted of revenue from operations of ₹ 8,904.94 million and other income of ₹ 166.93 million.

Revenue from operations

Revenue from operations for the nine months ended December 31, 2020 was ₹ 8,904.94 million, which was primarily attributable to income arising out of toll collection, cost of construction and interest income - with margin.

Other income

Other income for the nine months ended December 31, 2020 was ₹ 166.93 million.

Total Expenses

Total expenses for the nine months ended December 31, 2020 was ₹ 6,254.20 million, which principally consisted of cost of construction of ₹ 1,763.57 million and finance costs of ₹ 3,472.10 million.

Cost of Construction

Cost of construction for the nine months ended December 31, 2020 was ₹ 1,763.57 million, which was primarily attributable to the EPC, change of scope and utility shifting work carried.

Employee benefits expenses

Employee benefits expenses for the nine months ended December 31, 2020 ₹ 8.72 million, which primarily consisted of salaries, wages and bonus.

Finance costs

Finance costs for the nine months ended December 31, 2020 was ₹ 3,472.10 million. Finance costs primarily consisted of interest on borrowings and other borrowing costs.

Depreciation and Amortization Expense

Depreciation and amortization expense for the nine months ended December 31, 2020 was ₹ 420.73 million, which was primarily attributable to the application of the requirements of Schedule II of the Companies Act, 2013 to depreciation and the revenue based method to amortization of intangible assets.

Other expenses

Other expenses for the nine months ended December 31, 2020 was ₹ 589.08 million. Other expenses primarily comprised major maintenance expense, and legal and professional charges.

Profit before tax

As a result of the factors outlined above, our profit before tax was ₹ 2,817.67 million for the nine months ended December 31, 2020.

Tax expenses

Current tax expense for the nine months ended December 31, 2020 was ₹ 54.96 million, deferred tax expenses for the nine months ended December 31, 2020 was ₹ 2.84 million and tax adjustment related to previous year representing ₹ 151.25 million was on account of reversal of tax provision for Fiscal 2020 of six HAM projects as such projects were eligible for exemption under section 80-IA of the IT Act.

Profit after tax

As a result of the factors outlined above, profit after tax for the nine months ended December 31, 2020 was ₹ 2,911.12 million.

Financial year ended March 31, 2020 compared to financial year ended March 31, 2019

Total Income

Total income decreased 66.47% from ₹ 38,687.91 million in Fiscal 2019 to ₹ 12,972.08 million in Fiscal 2020, primarily due to decrease in contract revenue, which was partially offset by an increase in interest income from NHAI / MoRTH and finance income.

Revenue from operations

Revenue from operations decreased by 66.45 % from ₹ 38,333.21 million for Fiscal 2019 to ₹ 12,860.54 million for Fiscal 2020, primarily due to decrease in contract revenue, which was partially offset by an increase in interest income from NHAI / MoRTH, finance income and toll plaza receipts.

Toll Plaza Receipts

Toll plaza receipts increased by 29.31%, from ₹ 1,099.79 million for Fiscal 2019 to ₹ 1,422.16 million for Fiscal 2020. This increase was attributable to commencement of toll collection by JDTL in June 2018, increase in toll rates as per concession agreements and increase in traffic volume.

Contract Revenue

Contract revenue decreased by 87.67% from ₹ 33,180.37 million for Fiscal 2019 to ₹ 4,091.56 million for Fiscal 2020. This decrease was attributable to construction of the six HAM projects which got operational in Fiscal 2020, due to which revenue recognition available for Fiscal 2019 equivalent to construction cost was not available for Fiscal 2020.

Contract Receipts (Utility Shifting)

Contract receipts (utility shifting) decreased by 46.97% from ₹ 1,519.90 million for Fiscal 2019 to ₹ 805.96 million for Fiscal 2020, due to utility shifting work of DKZHL and DYHPL being completed in Fiscal 2019.

Income from Change in Scope

Income from change in scope increased from nil in Fiscal 2019 to ₹ 109. 60 million in Fiscal 2020 on account of change of scope of work received from the Concessioning Authorities in Fiscal 2020.

Interest Income from NHAI / MoRTH

Interest income from NHAI / MoRTH increased from nil in Fiscal 2019 to ₹ 1,796.32 million in Fiscal 2020, on account of five HAM projects becoming operational in Fiscal 2020.

Finance Income

Finance income increased by 53.58% from ₹ 2,527.38 million for Fiscal 2019 to ₹ 3,881.66 million for Fiscal 2020, due to addition of income from the three KRDCL projects and five HAM projects and discounting annuity receivables in light of the adoption of the financial asset model.

Bonus for Early Completion

Bonus for early completion increased from nil in Fiscal 2019 to ₹ 679.56 million in Fiscal 2020 for early completion of the DLSHL Project and DYWHPL Project. These amounts were paid to DBL in its capacity as the EPC contractor.

Operation and Maintenance

Operation and maintenance increased from nil in Fiscal 2019 to ₹ 73.72 million, on account of the five HAM projects becoming operational in Fiscal 2020.

Other income

Other income decreased by 68.55% from ₹ 354.70 million for Fiscal 2019 to ₹ 111.53 million for Fiscal 2020, primarily on account of a decrease in others and deferred income on deposits, which was partially offset by an increase in interest from banks on deposits.

Total Expenses

Total expenses decreased by 71.14% from ₹ 40,020.11 million for Fiscal 2019 to ₹ 11,549.17 million for Fiscal 2020, primarily on account of decrease in construction cost, which was partially offset by an increase in finance cost.

Cost of Construction

Cost of construction decreased by 83.26 % from ₹ 35,039.87 million for Fiscal 2019 to ₹ 5,864.99 million for Fiscal 2020, primarily attributable to a reduction in construction costs relating to the six HAM projects which became operational in Fiscal 2020.

Employee benefit expense

Employee benefits expenses increased by 105.13 % from ₹ 5.46 million for Fiscal 2019 to ₹ 11.20 million for Fiscal 2020, due to an increase in headcount and respective salaries during Fiscal 2020.

Finance costs

Finance costs increased by 17.12% from ₹ 3,784.78 million for Fiscal 2019 to ₹ 4,432.60 million for Fiscal 2020, primarily attributable to an increase in interest on borrowings due to additional borrowings taken for new projects. This was partially offset by a decrease in interest on other financial liability and other borrowing costs.

Depreciation and Amortization Expense

Depreciation and amortization expense increased by 14.19 % from ₹ 490.58 million for Fiscal 2019 to ₹ 560.20 million for Fiscal 2020, primarily attributable to the application of the requirements of Schedule II of the Companies Act, 2013 to depreciation and the revenue-based method to amortization of intangible assets for Fiscal 2020, which increased due to capitalisation of JDTL in June 2018. Accordingly, amortisation of 12 months was charged in Fiscal 2020 whilst amortisation for 10 months was charged in Fiscal 2019.

Other expenses

Other expenses decreased by 2.75 % from ₹ 699.42 million for Fiscal 2019 to ₹ 680.18 million for Fiscal 2020, primarily due to a decrease in other expenses, which was partially offset by an increase in legal and professional charges, rent paid and electricity expenses.

Profit before tax

As a result of the factors outlined above, our profit / (loss) before tax increased by 206.81% from ₹ (1,332.20) million for Fiscal 2019 to ₹ 1,422.90 million for Fiscal 2020.

Tax expenses

Tax expense increased from ₹ (784.02) million for Fiscal 2019 to ₹ 154.04 million for Fiscal 2020, due to an increase in net profit in relation to various projects which resulted in current tax amounting to ₹ 168.88 million. Deferred tax decreased from ₹ (784.12) million for Fiscal 2019 to ₹ 15.08 million for Fiscal 2020 due to reversal of deferred tax expense during Fiscal 2019 which was earlier created on account of timing differences. However, all Project SPVs are eligible for deduction under section 80-IA of the IT Act and accordingly, it is unlikely that deferred tax assets so created would be utilised any time during the tenure of the relevant concession agreements. Accordingly, deferred tax liability has been written back.

Profit/(loss) after tax

As a result of the factors outlined above, our profit/(loss) after tax increased by 331.46% from loss after tax of ₹ 548.19 million for Fiscal 2019 to profit after tax of ₹ 1,268.86 million for Fiscal 2020.

Financial year ended March 31, 2019 compared to financial year ended March 31, 2018

Total Income

Total income increased by 49.19 % from ₹ 25,931.93 million for Fiscal 2018 to ₹ 38,687.91 million for Fiscal 2019, primarily due to increase in toll plaza receipts, contract revenue and finance income.

Revenue from operations

Revenue from operations increased by 48.05%, from ₹ 25,892.08 million for Fiscal 2018 to ₹ 38,333.21 million for Fiscal 2019, primarily due to increase in contract revenue (construction revenue) and income arising out of toll collection.

Toll Plaza Receipts

Toll Plaza Receipts increased by 260.46% from ₹ 305.11 million for Fiscal 2018 to ₹ 1,099.79 million for Fiscal 2019. This increase was on account of JDTL commencing operations during Fiscal 2019, which amounts to ₹736.79 million, increase in toll rates as per concession agreements and increase in traffic volume.

Contract Revenue

Contract revenue increased by 50.87% from ₹ 21,992.12 million for Fiscal 2018 to ₹ 33,180.37 million for Fiscal 2019. This increase was attributable to construction of the six HAM projects during Fiscal 2019.

Contract Receipts (Utility Shifting)

Contract receipts (utility shifting) increased by 56.94 % from ₹ 968.43 million for Fiscal 2018 to ₹ 1,519.90 million for Fiscal 2019, which was primarily attributable to relates to utility shifting work done for utility shifting work of DKZHL and DYHPL being completed in Fiscal 2019.

Finance Income

Finance income increased by 27.00% from ₹ 1,990.12 million for Fiscal 2018 to ₹ 2,527.38 million for Fiscal 2019, due to addition of the KRDCL annuity projects which achieved PCOD in the last quarter of Fiscal 2018 and an impact of discounting annuity receivables in light of the adoption of the financial asset model.

Other income

Other income increased from ₹ 39.85 million for Fiscal 2018 compared to ₹ 354.70 million for Fiscal 2019, primarily due to an increase in others, deferred income on deposits and interest from banks on deposits.

Total Expenses

Total expenses increased by 52.26% from ₹ 26,284.37 million for Fiscal 2018 to ₹ 40,020.11 million for Fiscal 2019, primarily due to increase in cost of construction, finance costs and depreciation and amortization expense.

Cost of Construction

Cost of construction increased by 48.35% from ₹ 23,619.29 million for Fiscal 2018 to ₹ 35,039.87 million for Fiscal 2019, primarily due to costs incurred for construction of the six HAM projects.

Employee benefit expense

Employee benefits expense decreased by 83.83% from ₹ 33.76 million for Fiscal 2018 to ₹ 5.46 million for Fiscal 2019, due to sub-contracting the employee cost relating to tolls covered under operation and maintenance expenses.

Finance costs

Finance costs increased by 91.58 % from ₹ 1,975.55 million for Fiscal 2018 to ₹ 3,748.78 million for Fiscal 2019, primarily attributable to additional borrowings taken for new projects.

Depreciation and Amortization Expense

Depreciation and amortization expense increased by 104.29 % from ₹ 240.15 million for Fiscal 2018 to ₹ 490.58 million for Fiscal 2019, primarily attributable to the application of the requirements of Schedule II of the Companies Act, 2013 to depreciation and the revenue-based method to amortization of intangible assets for Fiscal 2019 which increased due to capitalisation of JDTL in June 2018.

Other expenses

Other expenses increased by 68.28 % from ₹ 415.62 million for Fiscal 2018 to ₹ 699.42 million for Fiscal 2019, primarily due to an increase in major maintenance expenses and other expenses which was partially offset by a decrease in legal and professional charges and rates and taxes.

Loss before tax

As a result of the factors outlined above, our loss before tax increased by 278.00% from ₹ 352.44 million for Fiscal 2018 to ₹ 1,332.21 million for Fiscal 2019.

Tax expenses

Tax expense decreased from ₹ 764.01 million for Fiscal 2019 to ₹ (784.02) million for Fiscal 2020. Deferred tax expense decreased for Fiscal 2018 due to reversal of deferred tax expense during Fiscal 2019 which was earlier created on account of timing differences. However, all Project SPVs are eligible for deduction under section 80-IA of the IT Act and accordingly, it is unlikely that deferred tax assets so created would be utilised any time during the tenure of the relevant concession agreements. Accordingly, deferred tax liability has been written back.

Loss after tax

As a result of the factors outlined above, our loss after tax decreased by 50.90% from ₹ 1,116.45 million for Fiscal 2018 to ₹ 548.19 million for Fiscal 2019.

Cash Flows

The following table sets forth certain information relating to the cash flows of the Project SPVs on a combined basis for the periods indicated:

(*In ₹ million*)

Particulars	Nine months ended December 31, 2020	Financial Year ended March 31,		
		2020	2019	2018
Net cash from / (used) by / in operating activities	5,158.13	(13,275.45)	2,208.49	(214.78)
Net cash from / (used) by / in investing activities	2,880.78	18,859.41	(13,015.10)	(11,099.63)
Net cash from / (used) by / in financing activities	(6,943.50)	(4,073.68)	11,540.00	12,378.99

Net cash from / (used) by / in operating activities

Net cash from operating activities for the nine months ended December 31, 2020 was ₹ 5,158.13 million primarily arising out of operational revenue from annuity and toll.

Net cash used in operating activities for Fiscal 2020 was ₹ 13,275.45 million, primarily for construction expenses of new projects which is charged to Statement of Profit and Loss as per Ind AS.

Net cash from operating activities for Fiscal 2019 was ₹ 2,208.49 million, primarily arising out of operational revenue from annuity and toll.

Net cash used in operating activities for Fiscal 2018 was ₹ 214.78 million, primarily for construction expenses of new projects which is charged to Statement of Profit and Loss as per Ind AS.

Net cash from / (used) by / in investing activities

Net cash from investing activities for the nine months ended December 31, 2020 was ₹ 2,880.78 million, primarily due to completion of project and conversion of Capital Work in progress into financial assets..

Net cash from investing activities for Fiscal 2020 was ₹ 18,859.41 million, primarily due to completion of project and conversion of Capital Work in progress into financial assets.

Net cash used in investing activities for Fiscal 2019 was ₹ 13,015.10 million, primarily for construction expense of new projects resulting into capital work in progress.

Net cash used in investing activities for Fiscal 2018 was ₹ 11,099.63 million, primarily for construction expense of new projects resulting into capital work in progress.

Net cash from / (used) by / in financing activities

Net cash used in financing activities for the nine months ended December 31, 2020 was ₹ 6,943.50 million, primarily for repayment of borrowings and finance cost.

Net cash used in financing activities for Fiscal 2020 was ₹ 4,073.68 million, primarily due to repayment of borrowings and finance cost.

Net cash from financing activities for Fiscal 2019 was ₹ 11,540.00 million, primarily due to receipts of proceeds from long term and short term borrowings.

Net cash from financing activities for Fiscal 2018 was ₹ 12,378.99 million, primarily due to receipts of proceeds from long term and short term borrowings.

Capital Expenditure

The Project SPVs' capital expenditure has historically been principally for construction cost. In Fiscals 2018, 2019 and 2020, the capital expenditure of the Project SPVs (including capital expenditures with respect to the EPC costs and property, plant and equipment) was ₹ 8,468.27 million, ₹ 20,966.25 million and ₹ 2,747.52 million, respectively.

We expect to incur further capital expenditure in connection with additional construction for our remaining projects. For further details, please see the section entitled "*Risk Factors — The Project SPVs may be directed by the relevant Concessioning*

Authority to undertake additional construction work and therefore, may be required to perform additional construction work and/or incur capital expenditure" on page 68.

Indebtedness

The following table provides the types and amounts of the Initial Portfolio Assets' outstanding indebtedness as of December 31, 2020:

(*In ₹ million*)

Particulars	As at December 31, 2020	As at March 31, 2020	As at March 31, 2019	As at March 31, 2018
Non-current				
Secured				
a.1 Debentures	933.33	1,000.00		
a.2 Term loans				
- From Banks	40,250.35	41,665.46	40,787.07	27,123.84
- From Other Parties	71.43	731.14	785.80	235.43
Less: Current maturities of non-current borrowings disclosed under the head 'Other financial liabilities - Current'	(3,801.06)	(2,261.48)	(1,517.56)	(953.72)
Non-current borrowings	**37,454.05**	**41,135.11**	**40,055.31**	**26,405.55**
Unsecured				
Others*	10,949.37	10,739.70	10,815.74	6,940.73
Current Borrowings	**10,949.37**	**10,739.70**	**10,815.74**	**6,940.73**
Total Borrowings	**48,403.42**	**51,874.81**	**50,871.05**	**33,346.28**

**Includes amount payable to related parties of ₹ 10,060.32 million for the period ended on December 31, 2020.*
**Includes amount payable to related parties of ₹ 9,466.66 million for Fiscal 2020.*
**Includes amount payable to related parties of ₹ 8,145.45 million for Fiscal 2019.*
**Includes amount payable to related parties of ₹ 3,216.16 million for Fiscal 2018.*

As December 31, 2020, the Initial Portfolio Assets' total borrowings, comprising of unsecured loans and secured loans of the Initial Portfolio Assets, was ₹ 52,204.48 million, consisting of unsecured loans of ₹ 10,949.37 million and secured loans of ₹ 41,255.11 million including borrowings classified as other financial liabilities. Most of the Project SPVs' financing arrangements are secured by their movable and immovable assets, including charges on their equipment and intangible assets relating to toll collection rights and financial assets relating to their respective projects.

Sufficiency of Working Capital

The Investment Manager has confirmed that the Trust has the ability to meets its working capital requirements for at least 12 months from the date of listing of the Units.

Related Party Transactions

We have in the past engaged, and in the future may engage, in related party transactions. For a description of our related party transactions, see the section entitled "*Related Party Transactions*" on page 405.

Seasonality

Our business model is predominantly annuity based. However, two of the Projects are exclusively toll projects, being JDTL and Suryavanshi Infra. JDTL and Suryavanshi Infra are subject to seasonality of traffic and toll revenue. Traffic volumes tend to increase at the beginning and end of holiday seasons, but decrease during the monsoon season and on the day of a holiday. The monsoon season may also restrict our ability to carry on activities related to our operation and maintenance of the Project SPVs. Such events may result in delays in periodic maintenance and reduce productivity, thereby materially and adversely affecting our business, financial condition and results of operations.

Unusual or Infrequent Events or Transactions

Except as described in this Draft Placement Memorandum, there have been no events or transactions to our knowledge which may be described as "unusual" or "infrequent".

Total Turnover of each Major Industry Segment in which we operate

We have one primary business segment, namely the road sector. For further information, please see the section entitled "*Industry Overview*" and "*Our Business*" on pages 136 and 144, respectively.

Known Trends or Uncertainties

Other than as described in the section entitled "*Risk Factors*" on page 59 and this section entitled "*Discussion and Analysis by the Directors of the Investment Manager of the Financial Condition, Results of Operations and Cash Flows of the Initial Portfolio Assets of the Trust*" on page 379, to our knowledge there are no known trends or uncertainties that have or had or are expected to have a material adverse impact on our revenues or income from continuing operations.

Quantitative and Qualitative Disclosure about Market Risks

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk interest rate risk, currency risk and other price risk such as equity price risk and commodity risk. Financial instruments affected by market risk include borrowings, trade and other payables, security deposit, trade and other receivables, deposits with banks. Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Credit Risk

Credit risk on trade receivables is limited as the customers of the Trust mainly consists of the government promoted entities having a strong credit worthiness.

Liquidity risk

Liquidity risk relates to the risk that the Trust or the Project SPVs will not be able to meet their respective obligations associated with its financial liabilities. The Trust and the Project SPVs are exposed to liquidity risk in respect of financing arrangements and short-term and long-term investment programs mainly in their growth projects.

It is expected that the Trust, through the Investment Manager, will regularly monitor liquidity requirements to ensure that it maintains adequate means of obtaining funds necessary in order to meet liquidity requirements in the short and longer term. Further, the Trust and the Project SPVs aim to minimize the risk by generating sufficient cash flows from their current operations, cash and cash equivalents, liquid investments and by deploying a robust cash management system.

Significant Developments since December 31, 2020

Except as disclosed in this Draft Placement Memorandum and except for the ordinary course of business of the Project SPVs, we are not aware of any circumstances that have arisen since December 31, 2020, that materially and adversely affect, or are likely to affect, our operations or profitability, the value of our respective assets, or our ability to pay our respective liabilities within the next twelve months.

The Trust and the Investment Manager confirm that there has been no material change in the contingent liabilities since December 31, 2020, being the date of latest financial information included by way of the Audited Special Purpose Combined Financial Statements.

The Trust and the Investment Manager confirm that there has been no material change in the capital and other commitments since December 31, 2020, being the date of latest financial information included by way of the Audited Special Purpose Combined Financial Statements.

RELATED PARTY TRANSACTIONS

In terms of Regulation 2(1)(zv) of the InvIT Regulations, related party shall be as defined as under the Companies Act, 2013 or under the applicable accounting standards and shall also include: (i) Parties to the Trust; and (ii) promoters, directors, and partners of the Parties to the Trust. Further, related parties also include such persons and entities as defined in terms of the applicable accounting standards, being Ind AS 24 on "*Related Party Disclosures*" ("**Related Parties**") in relation to related party transactions. For further details in relation to related party transactions, please see the section entitled "*Audited Special Purpose Combined Financial Statements*" on page 458. The Parties to the Trust, may, from time to time, enter into related party transactions, in accordance with applicable law.

Procedure for dealing with Related Party Transactions

To ensure proper approval, supervision and reporting of the transactions between the Trust and its Related Parties, the board of directors of the Investment Manager has adopted the Policy in relation to Related Party Transactions and conflict of interests, pursuant to its resolution dated February 22, 2021, to regulate the transactions between the Trust and its Related Parties. The key terms of the RPT Policy are provided below:

(i). In accordance with the InvIT Regulations, the Investment Manager will ensure that all future related party transactions shall be:

(a). on an arm's length basis;
(b). in accordance with the relevant accounting standards;
(c). in the best interest of the Unitholders;
(d). consistent with the strategy and investment objectives of the Trust; and
(e). compliant with applicable law.

(ii). Review and approval of related party transactions:

(a). Each transaction which is identified as a related party transaction shall be pre-approved by the audit committee constituted by the board of directors pursuant to Section 177 of the Companies Act, 2013 ("**Audit Committee**") prior to entering into such transaction.

(b). The Audit Committee may grant omnibus approval for related party transactions. Each such omnibus approval shall be valid for a period not exceeding one year from the date of such approval, and related party transactions undertaken after the expiry of such period shall require fresh approval of the Audit Committee. The Audit Committee shall review, on a quarterly basis, the details of related party transactions entered into by the Trust pursuant to the omnibus approval.

(iii). The Investment Manager will establish an internal control system so as to ensure that all future related party transactions are compliant with the InvIT Regulations and applicable accounting standards. Further, the Investment Manager shall convene meetings of the Unitholders in accordance with Regulation 22 of the InvIT Regulations, and maintain records pertaining to such meetings in the manner prescribed. The Investment Manager shall also ensure compliance with any additional guidelines issued in this regard by SEBI and other relevant regulatory, statutory or governmental authorities from time to time.

(iv). In addition to any other requirement that may be prescribed in terms of the InvIT Regulations or other applicable laws, all related party transactions to be entered into in the future will be decided by the board of directors after the examination of the nature of the transaction and its supporting documents or such other data as may be deemed necessary by the board of directors.

(v). The Investment Manager will ensure that if the total value of all the related party transactions in a financial year pertaining to acquisition or sale of assets, whether directly or through a holding company or SPV (as defined in the InvIT Regulations), or investments into securities, exceeds 5% of the value of the assets of the Trust or any other threshold prescribed by the InvIT Regulations, approval from the Unitholders shall be obtained prior to entering into any such subsequent transaction with any related party, in accordance with Regulation 22 of the InvIT Regulations.

(vi). The Investment Manager will ensure that if the value of the funds borrowed from related parties in a financial year exceeds 5% of the total consolidated borrowings of the Trust, any holding company and the SPVs, or any other threshold prescribed by the InvIT Regulations, approval from the Unitholders shall be obtained prior to entering into any such subsequent transaction with any related party, in accordance with Regulation 22 of the InvIT Regulations.

(vii). As a general rule, the Investment Manager must demonstrate to its board of directors that future related party transactions satisfy the criteria set out in paragraph (i) above, at the time of recommending the same for the approval of its board of directors.

(viii). The Investment Manager will maintain a register to record all related party transactions entered into by the Trust and the basis on which they are entered into.

(ix). The Investment Manager will also incorporate into its internal audit plan a review of all related party transactions entered into by the Trust during each financial year, including a review of the implementation of the agreements, including any right of first offer or right of first refusal arrangements, to acquire assets from the Sponsor.

(x). The board of directors shall review at least quarterly in each financial year the related party transactions entered into during such quarter to ascertain that the guidelines and procedures established to monitor the related party transactions have been complied with.

(xi). The Investment Manager shall ensure that the profits from related party transactions have arisen from legitimate business transactions.

(xii). While considering voting on a related party transaction which requires approval of the Unitholders, voting by any person who is a related party in such transaction as well as associate of such person(s) shall not be considered on the specific issue.

Potential Conflict of Interest

(i). Subject to applicable law and the RPT Policy, all resolutions in writing of the board of directors in relation to matters concerning related party transactions of the Trust must be approved by a majority of the board of directors.

(ii). Where matters concerning the Trust relate to transactions entered into or to be entered into by the Investment Manager for and on behalf of Trust with a related party, the board of directors is required to consider the terms of the transactions to satisfy itself that the transactions are conducted in accordance with the parameters set out in the RPT Policy.

(iii). While acquiring assets in the future from the Sponsor, the Investment Manager will maintain a register of all opportunities and transactions arising from the implementation of the agreements to acquire assets from the Sponsor.

(iv). As part of its review of the internal audit reports at least quarterly in each financial year, the board of directors will review the internal audit reports of the implementation of the agreements to acquire assets from the Sponsor to ensure compliance. The review will include an examination of supporting documents and such other data deemed necessary to the board of directors.

Disclosure and Reporting

(i). The Investment Manager shall submit to the Trustee, quarterly reports on the activities of the Trust, including the status of compliance with the requirements specified under the InvIT Regulations in relation to related party transactions, within such time as may be prescribed in the InvIT Regulations and applicable law.

(ii). Related party transactions shall be disclosed: (a). in the offer document with respect to any transactions entered into prior to the offer of units and any such proposed transactions subsequent to the offer; and (b). to the stock exchanges and the Unitholders periodically, in accordance with the InvIT Regulations and the agreements to be entered into with the stock exchanges in relation to the listing of the Units. The Investment Manager shall adequately disclose the details of any fees or commissions received or to be received by such related party(ies) to the stock exchange.

(iii). In accordance with the InvIT Regulations, the annual report to be submitted by the Investment Manager to all Unitholders, electronically or by physical copies, and to the stock exchanges within three months from the end of the financial year, shall contain, *inter alia*, details of all related party transactions, including acquisitions or disposal of any projects, directly or through SPVs during the year, the value of which exceeded five percent of value of the assets of the Trust.

Related Party Transactions

Present and On-going Related Party Transactions

Related Party Transactions of the Trust in relation to the setting up of the Trust and this Issue

A number of present and on-going transactions with certain Related Parties have been, or will be, entered into in relation to the setting up of the Trust. The Trustee and the Investment Manager confirm that the following related party transactions have been, or shall be, entered into, on an arm's length basis in accordance with the relevant accounting standards, in the best interest of the Unitholders, consistent with:

(A) Securities Purchase Agreements

Please see the section entitled "– *Acquisition of the Initial Portfolio Assets by the Trust*" on page 407 for a description of the terms of the Securities Purchase Agreements.

(B) Trust Deed

Please see the section entitled "*Parties to the Trust – Key Terms of the Trust Deed*" on page 95 for a description of the terms of the Trust Deed. The Trustee has received a sum ₹ 10,000 towards the initial settlement of the Trust from the Sponsor.

(C) Investment Management Agreement

Please see the section entitled "*Parties to the Trust – Key Terms of the Investment Management Agreement*" on page 109 for a description of the terms of the Investment Management Agreement.

(D) Project Implementation and Management Agreements

Please see the section entitled "*Parties to the Trust – Key terms of the Project Implementation and Management Agreements*" on page 118 for a description of the terms of the Project Implementation and Management Agreements.

(E) Trademark License Agreement

We do not own the "Shrem" trademark and "Shrem" logo. For further details, please see the section entitled "*Risk Factors – We do not own the "Shrem" trademark and logo. Our license to use the "Shrem" trademark and logo may be terminated under certain circumstances and our ability to use the trademark and logo may be impaired*" on page 73. However, our Investment Manager and our Trustee (on our behalf) have entered into a trademark license agreement dated February 26, 2021, with Chhatwal Group Trust (the "**Trademark License Agreement**"). As per the Trademark License Agreement, Chhatwal Group Trust has granted us a non-exclusive, non-transferable right (without any right to sub-license) to use the use the aforementioned marks in relation to our business throughout the world. Under the Trademark License Agreement, the Investment Manager and the Trustee are required to pay a license fee linked to the unitholding of entities of the Shrem group in the Trust.

The Securities Purchase Agreements, the Investment Management Agreement and the Project Implementation and Management Agreements will take effect prior to the Allotment of Units.

Acquisition of the Initial Portfolio Assets by the Trust

Securities Purchase Agreements

In connection with this Issue, the Trustee (on behalf of the Trust) shall acquire the entire equity share capital of each of the Holdcos, which in turn hold certain share capital of the Initial Portfolio Assets, from the Sponsor and other shareholders of the Holdcos (the "**Holdco Shareholders**"), pursuant to which the Initial Portfolio Assets shall stand transferred to the Trust. Further, the Trust shall purchase the non-convertible debentures issued by each of the Holdcos to the Sponsor.

In terms of the Securities Purchase Agreements, the consideration payable by the Trust for the aforementioned transactions shall be payable in the form of Units. The number of Units allotted to the Sponsor and the Holdco Shareholders shall been determined upon finalization of the Issue Price, in accordance with the formula set out in the Securities Purchase Agreements.

Under the Securities Purchase Agreements, the Sponsor and the Holdco Shareholders shall provide certain representations and warranties (subject to the disclosures in the Placement Memorandum and the Final Placement Memorandum) to the Trustee (acting in its capacity as the Trustee of the Trust) and the Investment Manager, in relation to themselves and the Initial Portfolio Assets, which include:

(a). each of the Sponsor and the Holdco Shareholders are duly incorporated;
(b). due authorization and validity of the shares being sold;
(c). due accounting and finance conditions;
(d). representations in relation to taxation, litigation, corporate records and material contracts; and
(e). validity of approvals, licences, permits and authorizations.

The Sponsor and the Holdco Shareholders shall jointly and not severally, indemnify the Trust and the Investment Manager for the breach of any representations and warranties.

Borrowings from Related Parties

Borrowings in the form of inter-corporate deposits, and other short term and subordinated loans were provided by the Sponsor, the Holdcos, certain of their associates and DBL to the Initial Portfolio Assets. Further, borrowings in the form of inter-corporate deposits, and other short term and subordinated loans were provided by the Sponsor to the Holdcos. For details, please see the section entitled "*Financial Indebtedness and Deferred Payments*" on page 369.

Potential Conflicts of Interest

The Investment Manager has established certain procedures to deal with conflict of interest issues. For further details on management of potential conflicts of interest, please see the section entitled "– *Procedure for dealing with Related Party Transactions*" on page 405.

REGULATIONS AND POLICIES

The following description is a summary of certain sector specific laws currently in force in India, which are applicable to the business of the Initial Portfolio Assets, and the Trust, in the road infrastructure sector. The information summarized in this section has been obtained from statutes, regulations and sector-specific policies available in the public domain. The description set out below is not exhaustive, and is only intended to provide general information to Bidders, and is neither designed as, nor intended to substitute, professional legal advice and regulatory approvals. The interpretations, as provided hereinbelow, are subject to modification or clarification by subsequent legislative, judicial or administrative decisions. For information regarding regulatory approvals obtained by the Initial Portfolio Assets and the Trust, please see the section entitled "Regulatory Approvals" on page 417.

Regulatory Framework on Road Infrastructure

The regulatory framework in India in the highways sector, implemented on a public-private partnership ("**PPP**") basis, mainly derives its source from the primary legislations of National Highways Authority of India Act, 1988 (the "**NHAI Act**") and the National Highways Act, 1956 (the "**NH Act**") enacted by the Indian parliament, each as amended or supplemented.

The National Highways Act, 1956

The policy of the MoRTH, in implementing the NH Act, is to vest the MoRTH with the power to declare a national highway and for acquisition of land for this purpose. The GoI, by notification, can declare the intention to acquire any land for a 'public purpose' as envisaged by the law and such land can be used for the purposes of building, maintenance and operation of the declared national highways throughout the country. The NH Act prescribes the procedure for such land acquisition. The procedure includes, *inter alia*, a declaration of an intention to acquire, entering and inspecting such land, hearing of objections, a declaration of the acquisition and the power to take possession. The NH Act also provides for payment of compensation to owners and any other person whose right of enjoyment or ownership in the land has been affected. The NH Act vests MoRTH with the power to appoint a competent authority for the effective implementation of the NH Act and its policies. The said appointed authority retains the right and power to (a) survey, make any inspection, valuation or enquiry; (b) take levels; (c) dig or bore into sub-soil; (d) set out boundaries and intended lines of work; (e) mark such levels, boundaries and lines placing marks and cutting trenches; or (f) do such other acts or things as may be laid down by rules made in this behalf by that government.

All the notified national highways shall vest in the name of the Union and for the purposes, shall include all lands appurtenant thereto and all the bridges, culverts, tunnels and other enlisted constructions under the said NH Act. The Central Government shall assume the responsibility of maintaining and construction of national highways in proper condition in accordance to the law. The Central Government also retains the right to levy fee over the services and benefits rendered in relation to the use of such national highways.

The GoI is responsible for the development and maintenance of national highways. However, it may direct that such functions may also be exercised by the government of a state in which the highway is located or by any officer or authority subordinate to the GoI or to the state government. Further, the GoI has the power to enter into an agreement with any person for the development and maintenance of a part or whole of the highway. Such person would have the right to collect and retain fees at such rates as may be notified by the GoI and will also have the powers to regulate and control the traffic, for proper management of the highway, in accordance with the provisions of the Motor Vehicles Act, 1988, as amended. The GoI also has the power to make rules for carrying out the purposes of the NH Act.

The National Highways (Amendment) Act, 2017, entails the competent authority to issue reports to the Central Government in respect of any land (either acquired or proposed to be acquired) which is, either under incorrect revenue record or which is not required due to change in geometry or alignment of the construction, to issue order for the de-notification of such land from the acquisition for development and maintenance of the national highway. In pursuance of the foregoing amendment to the statute, the National Highways Rules, 1957, have been amended to ensure the exercise of the power under the NH Act. These rules provide for periodic regulatory compliance and reporting standards to be followed by the competent authority in reporting to the Central Government.

The National Highways Authority of India Act, 1988

The NHAI Act was enacted in pursuance of the powers of the Central Government for appointing a competent authority under the NH Act and provides for the constitution of an authority for the development, maintenance and management of national highways and for matters connected therewith or incidental thereto. In accordance with the NHAI Act, the GoI carries out development and maintenance of the national highways through NHAI. Subject to the provisions of the NHAI Act, the NHAI has the power to enter into and perform any contract necessary for the discharge of its functions. The NHAI has the power to acquire any land to discharge its functions, and such acquired land will be deemed to be land needed for a 'public purpose'. The NHAI Act prescribes a limit in relation to the value of the contracts that may be entered into by NHAI. However, the NHAI may enter into contracts exceeding the specified value, on obtaining prior approval of the GoI. The NHAI Act provides that the

contracts for acquisition, sale, or lease of immovable property on behalf of the NHAI cannot exceed a term of 30 years unless previously approved by the GoI.

NHAI's objective is to ensure that all contract awards and procurements conform to the best industry practices with regard to transparency of process, adoption of bid criteria to ensure healthy competition in award of contracts. The implementation of projects conforms to best quality requirements and the highway system is maintained to ensure best user comfort and convenience. NHAI has a three-tier structure. The headquarters (HQ), the regional offices (ROs) and the project implementation units (PIUs). The PIUs, headed by project directors, are responsible for implementation of projects assigned to them and ROs, headed by a Chief General Manager ("**CGM**") level officer, have been set-up in various parts of the country for decentralizing and strengthening the field level operations in NHAI. The HQ is responsible for overall supervision of the works assigned to NHAI.

In view of the challenging task of construction, development, and management of national highways being undertaken by NHAI, the Committee on Public Undertakings selected the subject "National Highways Authority of India (NHAI)" for comprehensive examination and report. The National Highways Authority of India (Amendment) Act, 2013, received the assent of the President of India on September 10, 2013, and aimed at increasing the institutional capacity of NHAI to help execute the powers delegated to it. National Highways Development Project ("**NHDP**") was launched in 1998 with the objective of developing roads of international standards which facilitate smooth flow of traffic. The NHDP envisages creation of roads with enhanced safety features, better riding surface, grade separator and other salient features.

As per the NHAI Works Manual, 2006, NHAI's mandate is the time and cost bound implementation of the NHDP. The sources of finance available to the NHAI include fund assistance from external funding agencies like the International Bank of Reconstruction and Development and the Asian Development Bank. NHAI's role encompasses involving the private sector in provision, maintenance, and operation of the national highways.

Financing of the NHDP

The GoI, under the Central Road Fund Act, 2000 created a fund which is required to be utilized for the development and maintenance of national highways (the "Central Road Fund"). Section 18 of the NHAI Act also provides for the creation of a separate NHAI Fund. Any capital grant or aid received, loan taken, borrowing made, or any other sum received by the NHAI is credited to the NHAI Fund. Certain sources for financing of the NHDP are through dedicated accruals under the Central Road Fund by levy of cess on fuel as well as involving the private sector and encouraging public private partnerships. The NHDP is also financed through long-term external loans from the International Bank of Reconstruction and Development, the Asian Development Bank and the Japan Bank for International Cooperation as well as through tolling of roads for different projects undertaken by the NHAI.

Private Participation in NHDP

In an effort to attract private sector participation in the NHDP, the NHAI has formulated model concession agreements ("**MCAs**") where a private entity, being the concessionaire, is, through an international competitive bidding ("**ICB**") process, awarded a concession (in form of a bundle of licenses) to build, operate and collect toll on a road for a specified period of time.

The bidding for the projects takes place in two stages as per the process provided below:

1. in the pre-qualification (RFQ) stage, the NHAI selects certain applicants on the basis of technical and financial expertise, prior experience in implementing similar projects and previous track record; and
2. in the bidding (RFP) stage, the NHAI invites financial bids from the pre-qualified applicants at the RFQ-stage on the basis of which the right to develop the project is awarded.

In accordance with the MCAs for projects above ₹1,000 million, the concessionaire meets the upfront cost and expenditure on annual maintenance and recovers the entire cost along with the interest from toll collections during the concession period. As per the 'Guidelines for Investment in Road Sector' issued by MoRTH in 2009, in order to increase the viability of projects, a capital grant of up to 40% of the project cost is provided by the NHAI or the GoI. The quantum of grant is determined on a case to case basis and typically constitutes the bid parameter in Build, Operate, Transfer ("**BOT**") projects which are generally not viable based on toll revenue alone. For certain projects with high traffic volumes, concessionaire also offers a negative grant (i.e., premium) to the NHAI. The concessionaire at the end of the concession period transfers the road back to the Government (free of charge and clear of all encumbrances). The concessionaire's investment in the road is recovered directly through user fees collected by way of tolls. As per the MCAs for annuity based projects, the concessionaire is required to meet the entire upfront cost (no grant is paid by the NHAI or the GoI) and the expenditure on annual maintenance for annuity based projects. The concessionaire recovers the entire investment through pre- determined annuity payments to be made by the NHAI or the GoI. Furthermore, MoRTH approved certain amendments to the model concession agreement, inter-alia, in relation to deferment of premium payments.

Exit Policy

The CCEA in May 2015 approved a comprehensive exit policy framework with the objective to mobilize funds in the market. In pursuance thereto, NHAI, vide Circular No. NHAI/1103/CGM(FA)/4/2015 dated June 09, 2015 permitted divestment of 100% equity by concessionaires/developers after two years of completion of construction to facilitate unlocking of funds for new infrastructure projects. The equity divested is required to be invested by promoters in their new projects. This comprehensive exit policy framework is expected to harmonize certain conditions across all concessions signed prior to 2009 with the policy framework for post 2009 contracts which permit divestment of equity up to 100%, two years after completion of construction. In line with the spirit of quoted circular, the NHAI issued another circular dated September 9, 2015 followed by the circular dated November 19, 2015, on the same subject, allowing the promoter to use the proceeds from the sale of divested equity of the concessionaire in one or more of the following:

(i). in incomplete NHAI projects;
(ii). any other highway projects;
(iii). any other power sector projects; or
(iv). to retire their debt to financial institutions in any other infrastructure projects.

Relaxation in the 'change in ownership' clause in Hybrid Annuity Model (HAM) projects

The MoRTH, *vide* circular dated November 10, 2020 and November 27, 2020, read along with the NHAI circular dated December 31, 2020, amended the MCAs in respect of project implemented under the HAM model, and permitted the selected bidder/consortium members, for the new as well as subsisting national highways project under the HAM-model, to dilute their equity six months after COD is achieved for the respective project.

Rationalized Compensation

The CCEA in November 2015 approved a policy for rationalized compensation to concessionaires for languishing national highway projects in BOT mode for delays that are not attributable to the concessionaires. Under the policy, the NHAI is authorized to allow an extension of the concession period for BOT (Toll) projects while keeping the original operation period unchanged. The NHAI has also been authorised to pay compensatory annuities to the concessionaire corresponding to the actual period of delay that is not attributable to the concessionaire upon successful completion of the project. In these cases, the construction period will be enhanced but the tenure of the concession will remain unchanged.

One Time Fund Infusion

The CCEA in October 2015 gave its approval to the NHAI for a one-time infusion of funds with the purpose of reviving and physically completing stalled projects in the advanced stages of completion. As per the policy, the amount of funds required in each case shall be approved by NHAI on a case to case basis.

Bidder Information

MoRTH has developed the Bidder Information Management System ("**BIMS**") to streamline the process of pre- qualification of bidders for EPC mode of contracts for all national highway works, with enhanced transparency and objectivity. BIMS works as a data base of bidder information that covers basic details, civil works experience, cash accruals and network, and annual turnover so that bidders' pre-qualification can be assessed based on evaluation parameters like threshold capacity and bid capacity from already stored data and the technical evaluation can be carried out in a faster manner.

Land Acquisition

While land is acquired for national highway projects under the NH Act, the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 (the "**Land Acquisition Act**") must also be complied with. MoRTH has issued comprehensive guidelines on land acquisition for national highways taking into account the applicability of the Land Acquisition Act.

Arbitral Awards

CCEA on August 31, 2016 approved various measures to revive the construction sector. An office memorandum dated September 5, 2016 was issued by the National Institute for Transforming India with certain proposals. On November 20, 2019, the CCEA approved certain proposals in relation to the arbitrations by or against government entities, for the effective implementation of the CCEA's decision on August 31, 2016 on its initiatives to revive the construction sector. Initially, the CCEA had approved the proposal that government agencies will be required to pay 75% of the arbitral award to the concessionaire against a bank guarantee, in cases where the award already announced is challenged. However, pursuant to a press release dated November 20, 2019, the CCEA approved, inter-alia, that where a government entity has challenged an arbitral award, resultant of which the amount of the arbitral award has not been paid, 75% of such award will be paid by the

government entity to the contractor or the concessionaire against a bank guarantee only for the said 75% and not for its interest component. In relation to interest payable to the government entity, if a subsequent court order required the refund of 75% of the amount, the payment of such amounts will be required to be made as per the court orders.

Applicable Rules

As per the NH Act and the NHAI Act, the Central Government is empowered to make rules in order to further the objects of NH Act and NHAI Act. In exercise of such power, the Central Government has framed certain rules which are as follows:

- The National Highways Rules, 1957;
- National Highways Authority of India (Budget, Accounts Audit, Investment of Funds and Powers to enter Premises) Rules, 1990, as amended;
- The National Highways (Manner of Depositing the Amount by the Central Government with Competent Authority for Acquisition of Land) Rules, 1998;
- The National Highways Tribunal (Procedure for Appointment as Presiding Officer of the Tribunal) Rules, 2003;
- The National Highways Tribunal (Procedure) Rules 2003;
- National Highways Authority of India (The Term of Office and Other Conditions of Service of Members) Rules, 2003, as amended;
- The Central Road Fund (State Roads) Rules, 2007;
- The National Highways Tribunal (Financial and Administrative Powers) Rules, 2004;
- The National Highways Tribunal (Procedure for Investigation of Misbehaviour or Incapacity of Presiding Officer) Rules, 2003;
- The National Highways Fee (Determination of Rates and Collection) Rules, 2008, as amended; and
- The Highway Administration Rules, 2004.

Environmental Compliances and Regulations

Infrastructure projects must also ensure compliance with environmental legislations such as the Water (Prevention and Control of Pollution) Act, 1974 ("**Water Pollution Act**"), the Air (Prevention and Control of Pollution) Act, 1981 ("**Air Pollution Act**") and the Environment Protection Act, 1986 ("**Environment Act**", together with the Water Pollution Act and the Air Pollution Act, the "**Environment Protection Acts**"). The Water Pollution Act aims to prevent and control water pollution. This legislation provides for the constitution of a central pollution control board ("**Central Pollution Control Board**" or "**CPCB**") at the Central level and state pollution control boards ("**State Pollution Control Boards**" or "**SPCBs**", together with the Central Pollution Control Board, the "**PCBs**") at the State levels. The functions of the CPCB includes, among other things, coordination of activities of the SPCBs, collecting data relating to water pollution and the measures devised for the prevention and control of water pollution and prescription of standards for streams or wells. The SPCBs are responsible for, among other things, the planning for programmes for prevention and control of pollution of streams and wells, collecting and disseminating information relating to water pollution and its prevention and control, inspection of sewage or trade effluents, works and plants for their treatment and to review the specifications and data relating to plants set up for treatment and purification of water, laying down or annulling the effluent standards for trade effluents and for the quality of the receiving waters, and laying down standards for treatment of trade effluents to be discharged. These authorities issue consent to establish and consent to operate which are to be required to be renewed periodically. These authorities also have the power of search, seizure and investigation if the authorities are aware of or suspect violation of such regulations. This legislation prohibits any person from establishing any industry, operation or process or any treatment and disposal system, which is likely to discharge trade effluent into a stream, well or sewer, or bring into use any new or altered outlet for discharge of sewage, or begin to make any new discharge of sewage without taking prior consent of the SPCBs.

In context of the environmental compliances and regulations, the National Green Tribunal Act, 2010 (the "**NGT Act**") is an important legislation which provides for the establishment of a National Green Tribunal ("**NGT**") for the effective and expeditious disposal of cases relating to environmental protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.

In accordance with the Forest (Conservation) Act, 1980, state governments are not permitted to make any order directing the use of forest land for a non-forest purpose, or assignment of any forest land through lease or otherwise to any private person or corporation without the approval of the GoI. The Ministry of Environment, Forest and Climate Change ("**MoEF**") mandates the Environment Impact Assessment ("**EIA**") must be conducted for specified projects. In the process, the MoEF receives proposals or the setting up of projects and assesses their impact on the environment before granting clearances to the projects.

The EIA Notification S.O. 1533, issued on September 14, 2006 (the "**EIA Notification**") and amended from time to time, under the provisions of the Environment Protection Act, prescribes that new construction of specified projects require prior environmental clearance from the MoEF. The environment clearance must be obtained from MoEF according to the procedure specified in the EIA Notification. No construction work or preparation of land by the project management except for securing

the land, relating to the setting up of a specified project can be undertaken until such clearance is obtained. Under the EIA Notification, the environmental clearance process for new projects consists of four stages – screening, scoping, public consultation and appraisal. After completion of public consultation, the applicant is required to make appropriate changes in the draft 'EIA Report' and the 'Environment Management Plan.' The final EIA Report has to be submitted to the concerned regulatory authority for appraisal. The regulatory authority is required to give its decision within 105 days of the receipt of the final EIA Report. The EIA Guidance Manual for Highways, 2010 explains the four stages of the environmental clearance process and the contents of the EIA Report required to be submitted by highway projects.

Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016

The Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016, impose an obligation and duty on the owners and operators of any facility or industry with a capability to create hazardous materials to safely dispose of such material in transport and other means of collecting and storing. Each occupier and operator of any facility generating hazardous waste is required to obtain an approval from the relevant state pollution control board for collecting, storing and treating the hazardous waste.

Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015

In September 2015, MoRTH has launched Green Highways (Plantation, Transplantation, Beautification and Maintenance) Policy, 2015, which will require road developers to earmark 1% of a project's total cost for planting of trees and shrubs along the national highways. Under this policy, the maintenance of such plantations will be outsourced through a bidding process to plantation agencies. MoRTH/NHAI will appoint the authorized agency for empanelment of such plantation agencies.

Public Liability Insurance Act, 1991

The Public Liability Insurance Act, 1991 (the "**Public Liability Act**"), imposes liability on the owner or controller of hazardous substances for any damage arising out of an accident involving such hazardous substances. A list of 'hazardous substances' covered by the legislation has been enumerated by the GoI by way of a notification. The owner or handler is also required to take out an insurance policy insuring against liability under the legislation. The rules made under the Public Liability Act mandate that the employer has to contribute towards the Environment Relief Fund, a sum equal to the premium paid on the insurance policies. This amount is payable to the insurer.

Labour Laws and Other Regulations

The laws and regulations to employment that may be applicable to the Trust, the Investment Manager, the Sponsor, and the Project SPVs include the following:

- Contract Labour (Regulation and Abolition) Act, 1970;
- Payment of Bonus Act, 1965;
- Employees' State Insurance Act, 1948;
- Employees' Provident Funds and Miscellaneous Provisions Act, 1952;
- Payment of Gratuity Act, 1972;
- Shops and Commercial Establishments Acts, where applicable;
- Minimum Wages Act 1948;
- Industrial Disputes Act, 1947;
- Employee's Compensation Act, 1923;
- Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013;
- Child Labour (Prohibition and Regulation) Act, 1986; and
- The Maternity Benefit Act, 1961.

Further, the Code on Wages, 2019, the Code on Social Security, 2020, the Occupational Safety, Health and Working Conditions Code, 2020 and the Industrial Relations Code, 2020 have been published in the official gazette by the Government of India. These will come into effect on dates as notified by the Government of India in the official gazette.

In addition to the above, various state shops and commercial establishments acts are also applicable to the Trust.

Other applicable law

The Motor Vehicles Act, 1988

The development, maintenance and management as well as control of the National Highways are regulated by the NH Act and the NHAI Act. Under the Motor Vehicles Act, 1988, some powers have been delegated to the Transport Department of the State Governments.

Section 138 of the Motor Vehicles Act, 1988 further empowers the State Governments to make rules for the control of traffic, including for the purpose of the removal and the safe custody of vehicles including their loads which have broken down or which have been left standing or have been abandoned on roads; the installation and use of weighing devices; the maintenance and management of wayside amenities complexes; the exemption from all or any of the provisions of relating to fire brigade vehicles, ambulances and other special classes or descriptions of vehicle, subject to such conditions as may be prescribed; the maintenance and management of parking places and stands and the fee, if any, which may be charged for their use; prohibiting the taking hold of or mounting of a motor vehicle in motion; prohibiting the use of foot-paths or pavements by motor vehicles, generally, the prevention of danger, injury or annoyance to the public or any person, or of danger or injury to property or of obstruction to traffic.

Motor Vehicles (Amendment) Act, 2019

The Motor Vehicles (Amendment) Act, 2019 is targeted towards bringing changes in the transport sector to encourage safer driving practices among Indian motor vehicle drivers. The draft for the amendment was put forward in the lower house of the Parliament, with a proposal to impose strict fines on the violators of traffic rules. The Act proposes to create a National Road Safety Board to be created by the Central Government through a notification. The Board will advise the Central and State governments on all aspects of road safety and traffic management.

Indian Trusts Act, 1882

The Indian Trusts Act, 1882 ("**Trusts Act**") governs all private trusts in India.

The Trusts Act sets out the purpose for which private trusts can be established, the manner in which they may be created, executed and extinguished. The person creating a trust under the Trusts Act is the author of such trust, the person to whom the author grants the power and authority to regulate the trust is the trustee and the persons for whose benefit such trust has been created are the beneficiaries of such trust. The Trust Act sets out the rights, duties, liabilities and powers of the trustees and the beneficiaries vis-a-vis the trust. The Trust has been settled in accordance with the provisions of the Trusts Act.

Control of National Highways (Land and Traffic) Act, 2002

The Control of National Highways (Land and Traffic) Act, 2002 (the "**Control of NH Act**") provides for control of land within national highways, right of way and traffic moving on national highways and also for removal of unauthorised occupation thereon.

In accordance with the provisions of the Control of NH Act, the Central Government has established Highway Administrations. Under the Control of NH Act, all land that forms part of a highway which vests in the Central Government, or that which does not already vest in the Central Government but has been acquired for the purpose of highways shall be deemed to be the property of the Central Government. The Control of NH Act prohibits any person from occupying any highway land or discharging any material through on such land without the permission of the Highway Administration or any officer authorised by such administration. The Control of NH Act permits the grant of lease and license for use of highway land for temporary use.

Indian Tolls Act, 1851

In accordance with the Indian Tolls Act, 1851 (the "**Tolls Act**"), the state governments have been vested with the power to levy tolls at such rates as they deem fit, to be levied upon any road or bridge, made or repaired at the expense of the Central or any state government. The tolls levied under the Tolls Act, are deemed to be 'public revenue' and the collection of tolls can be placed under any person the State governments' deem fit. Such persons are enjoined with the same responsibilities as if they were employed in the collection of land revenue. Further, all police officers are bound to assist the toll collectors when required in the implementation of the Tolls Act. The Tolls Act further gives power for recovery of toll and exempts certain category of people from payment of toll.

National Highways Fee (Determination of Rates and Collection) Rules, 2008

The National Highways Fee (Determination of Rates and Collection) Rules, 2008 (the "**NH Fee Rules**"), regulates the collection of fee for the use of national highways. In accordance with the NH Fee Rules, the GoI may, by a notification, levy fee for use of any section of a national highway, permanent bridge, bypass or tunnel forming part of a national highway, as the case may be. However, the GoI may, by notification, exempt any section of a national highway, permanent bridge, bypass or tunnel constructed through a public funded project from levy of such fee.

The NH Fee Rules supersede the National Highways (Temporary Bridges) Rules, 1964, the National Highways (Collection of Fees by any Person for the Use of Section of National Highways/ Permanent Bridge/ Temporary Bridge on National Highways) Rules, 1997, the National Highways (Fees for the use of National Highways Section and Permanent Bridges Public Funded Project) Rules, 1997 and the National Highways (Rate of Fees) Rules, 1997 other than in respect of things done or omitted to

be done under such rules prior to supersession. The NH Fee Rules do not apply to agreements and contracts executed or bids invited prior to the publication of such rules i.e. prior to December 5, 2008.

The collection of fee in case of a public funded project shall commence within 45 days from the date of completion of the project. The NH Fee Rules further provide for the base rate of fee applicable for the use of a section of the national highway for different categories of vehicles and the fees collected by the executing authority shall be remitted to the GoI. However, the GoI may, by notification, allow any or all of the executing authorities to appropriate the whole, or part of such fees for purposes as may be specified.

FASTag lanes on fee plazas is a policy initiative of the GoI in which there is an exclusive lane in the fee plaza for movement of vehicles fitted with FASTag. The FASTag is a device which is fitted on the front windscreen of vehicles to indicate online toll payment. The amended NH Fee Rules impose a penalty equivalent to two times the fee applicable if a vehicle not fitted with FASTag enters the exclusive FASTag lane. However, in case a user is unable to pay, due to malfunctioning electronic toll collection infrastructure, the user will be permitted to pass the fee plaza without payment.

The NH Fee rules were also amended to provide that the driver or owner of a mechanical vehicle which is loaded in excess of permissible load specified for its category, (i) shall not be permitted to use the national highway or cross the fee plaza until the excess load has been removed, and (ii) shall be liable to pay a fee to the toll collection agency equal to ten times of the fee applicable to such category of mechanical vehicle. However, in case no weighbridge has been installed at the toll plaza, no fee for overloading shall be levied.

The National Highways Rules, 1957 (the "NH Rules")

The NH Rules provide that in situations where the estimate cost of the execution of any original work on a national highway exceeds ₹ 1,000,000, a detailed estimated of the cost is to be forwarded to the GoI. An application for allotment of funds for meeting expenditure on an original work on a national highway must also be made to the GoI. The executing agency of the highway is required to furnish monthly progress reports and a completion report on the conclusion of the work. The NH Rules also give the consulting engineer of the GoI the right to inspect the work while it is in progress or after completion.

Provisions under the Constitution of India and other legislations in relation to collection of toll

Entry 59, List II of Schedule VII read with Article 246 of the Constitution of India vests state governments with the power to levy tolls. Further, in accordance with the Tolls Act, state governments have been vested with the power to levy tolls at such rates as they deem fit.

Foreign Investment Regulations

Foreign investment in Indian securities is governed by the provisions of the FEMA, read with the applicable FEMA Rules, the FEMA (Mode of payment and Reporting of Non-Debt Instruments) Regulations, 2019 and the consolidated FDI Policy issued by the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, Government. Foreign investment is permitted (except in the prohibited sectors) either through the automatic route or the approval route, depending upon the sector in which foreign investment is sought to be made. Under the FEMA Rules and the current consolidated FDI Policy, effective from October 15, 2020, an infrastructure investment trust registered and regulated by the SEBI under the InvIT Regulations, being an 'investment vehicle', is permitted to receive foreign investment from a person resident outside India (subject to Press Note 3 (2020 series)), including an FPI or an NRI subject to the terms and conditions specified in the FEMA Rules.

Downstream investment by an infrastructure investment trust shall be regarded as indirect foreign investment if neither the sponsor nor the investment manager of such an infrastructure investment trust is Indian 'owned and controlled' as defined in FEMA Rules.

Downstream investment by an 'investment vehicle' shall have to conform to the sectoral caps and conditions/restrictions, if any, as applicable to the company in which the downstream investment is made as per the FDI Policy. Foreign investment of up to 100% through the automatic route is permitted in the infrastructure sector in India. An infrastructure investment trust that receives foreign investment shall be required to make such report and in such format to the RBI or to the SEBI as may be prescribed by them from time to time.

The payment for the units of an infrastructure investment trust acquired by a person resident or registered/ incorporated outside India shall be made by an inward remittance from abroad through banking channels or by way of swap of shares of an SPV, or out of funds held in a Non-resident External ("**NRE**") or Foreign Currency Non-resident Bank ("**FCNR(B)**") account maintained in accordance with the Foreign Exchange Management (Deposit) Regulations, 2016.

Further, any person who is a non-resident and holds units of an infrastructure investment trust in accordance with the FEMA Rules may pledge such units (i) in favour of a bank in India to secure the credit facilities being extended to the Indian company

for bona fide purposes; (ii) in favour of an overseas bank to secure the credit facilities being extended to the person, or a person resident outside India who is the promoter of the Indian company or the overseas group company of the Indian company; (iii) in favour of a Non-Banking Financial Company registered with the RBI to secure credit facilities being extended to the Indian company for bona fide purposes; and (iv) subject to the authorized dealer bank satisfying itself of the compliance of the conditions stipulated by the RBI in this regard.

REGULATORY APPROVALS

Provided below are the material consents, licenses, permissions, registrations and approvals from the Government, various governmental agencies and other statutory and/or regulatory authorities, in relation to the Trust, SIPL, SRPL and STPL, required to be obtained by SIPL, SRPL and STPL for carrying out its present business, as applicable. Unless otherwise stated, these approvals are valid as of the date of this Draft Placement Memorandum. In the event that any of the approvals and licenses that are required for SIPL, SRPL and STPL's business operations expire in the ordinary course of business, SIPL, SRPL and STPL will apply for such renewal from time to time. Further, provided below are the approvals in relation to the Issue and in relation to the Trust.

A. Approvals in relation to the Issue

1. In-principle listing approval from NSE dated [●].

***B.* Approvals in relation to the Trust**

1. Certificate of registration dated February 4, 2021, bearing registration number IN/InvIT/20-21/0017, issued by SEBI to the Trust pursuant to Regulation 3 of the InvIT Regulations, for registration of the Trust as an infrastructure investment trust.

C. Material Business Approvals in relation to Initial Portfolio Assets

1. Certificate of completion dated April 10, 2014 issued by Sai Consulting Engineers Private Limited certifying March 29, 2014 as the date for commencement of commercial operation of the project highway, to DBL Nadiad-Modasa Tollways Limited;

2. Certificate of completion dated July 6, 2019 issued by TPF Getinsa Euroestudios certifying July 3, 2019 as the date for commencement of commercial operation of the project highway, to DBL Lucknow Sultanpur Highways Limited;

3. Certificate of completion dated February 12, 2018 issued by MC Consulting Engineers Private Limited certifying February 12, 2018 as the date for commencement of commercial operation of the project highway, to DBL Patan Rehli Tollways Limited;

4. Certificate of completion dated November 5, 2018 issued by Aarvee Associates Architects Engineers and Consultants Private Limited certifying September 15, 2018 as the date for commencement of commercial operation of the project highway, to Jalpa Devi Tollways Limited;

5. Certificate of completion dated August 6, 2014 issued by Mahinder Singh certifying August 6, 2014 as the date for commencement of commercial operation of the project highway, to DBL Jaora-Sailana Tollways Limited;

6. Certificate of completion dated July 1, 2014 issued by Poonam Chand Agarwal certifying July 01,2014 as the date for commencement of commercial operation of the project highway, to DBL Bankhlafata - Dogawa Tollways Limited;

7. Certificate of completion dated October 22, 2014 issued by R.P. Mishra certifying October 22, 2014 as the date for commencement of commercial operation of the project highway, to DBL Ashoknagar Vidisha Tollways Limited;

8. Certificate of completion dated February 28, 2013 issued by SAI Consulting Engineers Private Limited certifying February 28, 2013 as the date for commencement of commercial operation of the project highway, to DBL Silwani-Sultanganj Tollways Limited;

9. Certificate of completion dated June 15, 2013 issued by Theme Engineering Services Private Limited certifying June 15, 2013 as the date for commencement of commercial operation of the project highway, to DBL Sitamau-Suwasara Tollways Limited;

10. Certificate of completion dated July 8, 2013 issued by Poonam Chand Agarwal certifying July 08, 2013 as the date for commencement of commercial operation of the project highway, to DBL Mundi-Sanawad Tollways Limited;

11. Certificate of completion dated August 5, 2014 issued by Redecon (India) Private Limited certifying August 05, 2014 as the date for commencement of commercial operation of the project highway, to DBL Uchera – Nagod Tollways Limited;

12. Certificate of completion dated November 11, 2015 issued by K.H. Waghmare certifying November 11, 2015 as the date for commencement of commercial operation of the project highway (except for 4.780 kms from km 75+500 km to 80+780 km), to DBL Betul-Sarni Tollways Limited;

13. Certificate of completion dated August 13, 2015 issued by Highway Engineering Consultant certifying August 13, 2015 as the date for commencement of commercial operation of the project highway, to DBL Tikamgarh-Nowgaon Tollways Limited;

14. Certificate of completion dated September 5, 2012 issued by Rajeev K. Bidwai certifying September 05, 2012 as the date for commencement of commercial operation of the project highway, to DBL Sardarpur Badnawar Tollways Limited;

15. Provisional certificate of completion dated May 23, 2020 issued by Artefact Projects Limited certifying section of 72.089 kms out of 79.995 kms of the project highway being fit to enter into commercial operation from May 23, 2020, to DBL Mahagaon Yavatmal Highways Private Limited;

16. Provisional certificate of completion dated November 18, 2019 issued by Lion Engineering Consultants certifying partial completion of the project highway comprising the section from Km. 0+000 to Km. 5+460, Km. 6+500 to Km. 54.820 and Km. 55+350 to Km. 55+835 being fit to enter into commercial operation from November 18, 2019, to DBL Tuljapur Ausa Highways Limited;

17. Provisional certificate of completion dated November 20, 2019 issued by Lion Engineering Consultants certifying completion of the project highway comprising the section from Km. 465+500to km 467+525, km 472+900 to km 507+200, km 508+320 to km 514+660 and km 515+260 to km 524+690 being fit to enter into commercial operation from November 20, 2019, to DBL Wardha Butibori Highways Private Limited;

18. Provisional certificate of completion dated March 30, 2018 issued by Intercontinental Consultants and Technocrats Private Limited certifying completion of 50.071 kms out of 55.693 kms of the project highway being fit for commercial operation from February 24, 2018, to DBL Hirekerur Ranibennur Tollways Limited;

19. Provisional certificate of completion dated March 31, 2018 issued by Consulting Engineers Group Limited certifying the project highway to be provisionally fit for commercial operation from February 5, 2018, to DBL Mundargi Harappanahalli Tollways Limited;

20. Provisional certificate of completion dated June 27, 2009 issued by Madhya Pradesh Road Development Corporation Limited, certifying the project to be provisionally completed on February 05, 2009 to Suryavanshi Infrastructure Private Limited;

21. Provisional certificate of completion dated March 6, 2017 issued by MSV International Inc., certifying project highway being fit for entry into commercial operation from March 6, 2017, to DBL Hata-Dargawan Tollways Limited;

22. Provisional certificate of completion dated August 2, 2019 issued by Lion Engineering Consultants, certifying partial completion of the project highway comprising the section from Km. 400+575 to Km. 406+750 and Km. 407+250 to Km. 465+500 being fit for operation from August 02, 2019, to DBL Yavatmal Wardha Highways Private Limited;

23. Provisional certificate of completion dated March 23, 2020 issued by Artefact Projects Limited certifying length of 40.108 Km out of 43.905 Km being fit for entry into commercial operations from March 23, 2020, to DBL Kalmath Zarap Highways Limited;

24. Provisional certificate of completion dated April 6, 2018 issued by Roughton International Limited in association with Satra Infrastructure Management Services Private Limited certifying length of 71.940 Km out of 73.690 Km being fit for entry into commercial operations from February 28, 2018, to DBL Hassan Periyapatna Tollways Ltd;

25. Labour license issued by the Office of the Licensing Officer, Government of India under Rule 25(1) of the Contract Labour (Regulation and Abolition) Central Rules, 1971 dated November 19, 2020, to DBL Wardha Butibori Highways Private Limited;

26. Certificate of registration for employer issued by the Office of the Registering Officer, Government of India under Rule 24(1) of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998 dated November 26, 2020, to DBL Wardha Butibori Highways Private Limited;

27. Labour license issued by the Office of the Licensing Officer, Government of India under Rule 25(1) of the Contract Labour (Regulation and Abolition) Central Rules, 1971 dated November 19, 2020, to DBL Yavatmal Wardha Highways Private Limited;

28. Certificate of registration for employer issued by the Office of the Registering Officer, Government of India under Rule 24(1) of the Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Central Rules, 1998 dated November 26, 2020, to DBL Yavatmal Wardha Highways Private Limited;

29. Consent to establish issued by the Maharashtra Pollution Control Board dated August 09, 2017 under the provisions of the Air (Prevention and Control of Pollution Act) 1981, Water (Prevention Control of Pollution) Act, 1974 and authorization under the Hazardous and other Waste (Management and Transboundary movement) Rules, 2008 to Dilip Buildcon Limited S. No. 98/2, 130, 132/1, Village Mahasola, Taluka District Yavatmal, valid until commissioning of the unit or for a period of five years, whichever is earlier;

30. Consent to establish issued by the Maharashtra Pollution Control Board dated August 09, 2017 under the provisions of the Air (Prevention and Control of Pollution Act) 1981, Water (Prevention Control of Pollution) Act, 1974 and authorization under the Hazardous and other Waste (Management and Transboundary movement) Rules, 2008 to Dilip Buildcon Limited S. No. 478, 478/4, 475, 475/1, 475/1/1, 475/1/2, 475/3, 477, 478, 476, 472/3, 329, Village Sukuli, Taluka Arni, District Yavatmal, valid until commissioning of the unit or for a period of five years, whichever is earlier;

31. Consent to Operate issued by the Maharashtra Pollution Control Board dated October 03, 2019 under the provisions of the Air (Prevention and Control of Pollution Act) 1981, Water (Prevention Control of Pollution) Act, 1974 and authorization under the Hazardous and other Waste (Management and Transboundary movement) Rules, 2008 to Dilip Buildcon Limited Gat. No. 362, 363 and 375, Village Belkund, Taluka Ausa, District Latur, valid up to July 31, 2021; and

32. Consent to Operate issued by the Maharashtra Pollution Control Board dated September 27, 2019 under the provisions of the Air (Prevention and Control of Pollution Act) 1981, Water (Prevention Control of Pollution) Act, 1974 and authorization under the Hazardous and other Waste (Management and Transboundary movement) Rules, 2008 to Dilip Buildcon Limited Gat. No. 90, 91, 92 and 93, Village Khandala, Post Wadgaon, Taluka Tuljapur, District Osmanabad, valid up to July 31, 2022.

D. Approvals applied for, but not yet received

As on the date of this Draft Placement Memorandum, there are no approvals required to be obtained by the Trust and the Initial Portfolio Assets, for which applications have been made, but approvals have not been received, other than as described below:

Each of the Project SPVs has applied to its relevant Concessioning Authority to obtain the consent of the relevant Concessioning Authority for the indirect transfer of the shareholding of such Project SPV from the Sponsor to the Trust.

E. Approvals for which applications are yet to be made

As on the date of this Draft Placement Memorandum, there are no approvals required to be obtained by the Trust and the Initial Portfolio Assets, for which applications are yet to be made.

For further details, please see the section entitled "*Risk Factors – Some of our business approvals and applications for business approvals are not traceable*" on page 59.

LEGAL AND OTHER INFORMATION

Except as stated in this section, there is no material civil litigation or actions by regulatory authorities, in each case against all Holdcos and SPVs, the Trust, the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates and the Trustee, that are currently pending as on the date of this Draft Placement Memorandum.

For the purpose of this section, details of all regulatory actions involving the Trust (including the Holdcos and SPVs), the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates, and the Trustee, that are currently pending have been disclosed. All criminal matters involving the Trust (if any), the Sponsor, the Investment Manager, the Project Manager, or any of their respective Associates, and the Trustee, that are currently pending have been disclosed. All claims involving the SPVs that are currently pending have been disclosed. Further, any civil matter involving an amount equivalent to, or more than, the amount as disclosed below, in respect of the Trust, the Sponsor, the Project Manager, the Investment Manager and each of their respective Associates, the Trustee and the Initial Portfolio Assets has also been disclosed.

For the Trust (including the Holdcos and Project SPVs), the total combined income for the period ended December 31, 2020 was ₹ 9,071.87 million and the combined net worth (i.e. the total of share capital and consolidated reserves and surplus) was ₹ 1,403.67 million. Accordingly, in respect of the Trust (including the Holdcos and Project SPVs), all outstanding civil matters which involve an amount equal to or exceeding ₹ 70.18 million (being 5% of the total combined net worth for Fiscal 2020) have been considered material.

For the Sponsor, the total consolidated income for Fiscal 2020 was ₹ 1,729.44 million and the consolidated net worth (i.e. the total of share capital and consolidated reserves and surplus) was ₹ 1,936.07 million. Accordingly, in respect of the Sponsor and its Associates, all outstanding civil matters which involve an amount equal to or exceeding ₹ 86.47 million (being 5% of the total consolidated income for Fiscal 2020) have been considered material.

For the Investment Manager, all outstanding civil matters which involve an amount equal to or exceeding ₹ 1.00 million have been considered material.

For the Project Manager, all outstanding civil matters which involve an amount equal to or exceeding ₹ 1.00 million have been considered material.

For the Trustee, the total consolidated income for Fiscal 2020 was ₹ 352.96 million and the consolidated net worth (i.e. the total of share capital and consolidated reserves and surplus) was ₹ 649.25 million. Accordingly, in respect of the Trustee, all outstanding civil matters which involve an amount equal to or exceeding ₹ 17.65 million (being 5% of the total consolidated income for Fiscal 2020) have been considered material.

For entities which are common Associates of the Sponsor, the Investment Manager and the Project Manager, where the above-mentioned materiality thresholds in relation to the Sponsor, the Investment Manager and the Project Manager apply, all outstanding civil matters which involve an amount equal to or exceeding ₹ 86.47 million (being the higher of the thresholds (in terms of amount) applicable to the Sponsor, the Investment Manager and the Project Manager) have been considered material.

Further, all pending cases, where the amount is not ascertainable but considered material by the Trust, the Sponsor, the Investment Manager, the Project Manager or any of their Associates and the Trustee as on the date of this Draft Placement Memorandum have been disclosed. Also, in cases where outcome of one litigation impacts one or more other litigations, which individually are below materiality threshold, but collective above, such cases have also been disclosed.

I. Litigation involving the Trust

(i) There is no litigation involving the Trust.

II. Litigation involving the Initial Portfolio Assets

Material civil litigation

(i). A notice of dispute dated September 17, 2020, under the relevant Concession Agreement, has been issued by DBL Hassan Periyapatna Tollways Limited (the "**Affected Party**") to Karnataka Road Development Corporation Limited (the "**KRDCL**") in relation to, amongst others, (i) failure of KRDCL to provide encumbrance free right of way ("**ROW**"), (ii) unlawful withholding of annuity payments and interest payment on delayed annuity payments, (iii) change in scope of work, and (iv) delay in payment of increased costs borne by the Affected Party due to change in law, by KRDCL. As a measure for overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of KRDCL, the Affected Party has, amongst others, claimed damages for, (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in release of annuity payments including interest thereon, (iii) delay in payments for change of scope, and (iv) additional expenses incurred due to change in law. Owing to the failure of the respective independent engineers under the relevant concession agreement to amicably settle the disputes, the disputes

were referred to the dispute review board (the "**DRB**") constituted in accordance with the terms of the relevant Concession Agreement. However, on account of the DRB being terminated by the parties, the Affected Party has served a notice to KRDCL dated October 9, 2020 invoking arbitration as the means for adjudication of the aforementioned disputes. The estimated amount involved in this matter is ₹ 890 million. The parties are yet to constitute the relevant arbitration panel. The dispute is currently pending.

(ii). A notice of dispute dated August 18, 2020, under the relevant Concession Agreement, has been issued by DBL Hirekerur Ranibennur Tollways Limited (the "**Affected Party**") to Karnataka Road Development Corporation Limited (the "**KRDCL**") in relation to, amongst others, (i) failure of KRDCL to provide encumbrance free and hindrance free ROW, (ii) unlawful withholding of annuity payments and interest payment on delayed annuity payments, (iii) change in scope of work, and (iv) delay in payment of increased costs borne by the Affected Party due to change in law, by KRDCL. As a measure for overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of KRDCL, the Affected Party has, amongst others, claimed damages for, (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in release of annuity payments including interest thereon, (iii) delay in payments for change of scope, and (iv) additional expenses incurred due to change in law. Owing to the failure of the respective independent engineers under the relevant concession agreement to amicably settle the disputes, the disputes were referred to the dispute review board (the "**DRB**") constituted in accordance with the terms of the relevant Concession Agreement. However, on account of the DRB being terminated by the parties, the Affected Party has served a notice to KRDCL dated September 19, 2020 invoking arbitration as the means for adjudication of the aforementioned disputes. The estimated amount involved in this matter is ₹ 518.90 million. The parties are yet to constitute the relevant arbitration panels. The dispute is currently pending.

(iii). A notice of dispute dated August 18, 2020, under the relevant Concession Agreement, has been issued by DBL Mundargi Harpanhalli Tollways Limited (the "**Affected Party**") to Karnataka Road Development Corporation Limited (the "**KRDCL**") in relation to, amongst others, (i) failure of KRDCL to provide encumbrance free ROW, (ii) unlawful withholding of annuity payments and interest payment on delayed annuity payments, (iii) change in scope of work, and (iv) delay in payment of increased costs borne by the Affected Party due to change in law, by KRDCL. As a measure for overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of KRDCL, the Affected Party has, amongst others, claimed damages for (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in release of annuity payments including interest thereon, (iii) delay in payments for change of scope, and (iv) additional expenses incurred due to change in law. Owing to the failure of the respective independent engineers under the relevant concession agreements to amicably settle the disputes, the disputes were referred to the dispute review board (the "**DRB**") constituted in accordance with the terms of the relevant Concession Agreement. However, on account of the DRB being terminated by the parties, the Affected Party has served a notice to KRDCL dated September 19, 2020 invoking arbitration as the means for adjudication of the aforementioned disputes. The estimated amount involved in this matter is ₹ 406 million. The parties are yet to constitute the relevant arbitration panel. The dispute is currently pending.

(iv). A notice of dispute dated June 23, 2020, under the relevant Concession Agreement, has been issued by DBL Lucknow - Sultanpur Highways Limited (the "**Affected Party**") to NHAI in relation to, amongst others, (i) failure of NHAI to provide encumbrance free ROW, (ii) payment of annuity, bonus and milestone payments as per revised project bid cost of ₹ 20837.4 million along with losses and damages, (iii) change in scope of work, and (iv) delay in release of bonus payment, by NHAI. As a measure for overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of NHAI, the Affected Party has, amongst others, claimed damages for (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in release of annuity, bonus and milestone payments, and (iii) delay in payments for change of scope. Owing to the failure of NHAI to amicably settle the disputes, the Affected Party has served a notice to NHAI dated September 23, 2020 invoking arbitration as the means for adjudication of the aforementioned disputes under Section 21 of the Arbitration and Conciliation Act, 1996. The estimated amount involved in this matter is ₹ 1,300 million. The parties have not been able to constitute the relevant arbitration panel and are therefore considering other methods of resolution of the disputes. The dispute is currently pending.

(v). A notice of dispute dated March 18, 2020, under the relevant Concession Agreement, has been issued by DBL Tuljapur Ausa Highways Limited (the "**Affected Party**") to NHAI in relation to, amongst others, (i) failure of NHAI to provide encumbrance free ROW, (ii) delay in execution of the concession agreement and fixing of appointed date, (iii) change in scope of work, and (iv) delay in payment of increased costs borne by the Affected Party due to change in law, by NHAI. As a measure for overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of NHAI, the Affected Party has, amongst others, claimed damages for (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in payments for change of scope, and (iii) additional expenses incurred due to change in law. The estimated amount involved in this matter is ₹ 930 million. The dispute is currently pending.

(vi). A notice of dispute dated November 28, 2020, under the relevant Concession Agreement, has been issued by Jalpa Devi Tollways Limited (the "**Affected Party**") to NHAI in relation to, amongst others, (i) failure of NHAI to provide encumbrance free ROW, (ii) delay in execution of the concession agreement, (iii) change in scope of work, and (iv) delay in payment of increased costs borne by the Affected Party due to change in law, by NHAI. As a measure for

overcoming the monetary losses faced by the Affected Party, owing to the acts/omissions on part of NHAI, the Affected Party has, amongst others, claimed damages for (i) delay in handing over of unencumbered and unhindered ROW, (ii) delay in payments for change of scope, and (iii) additional expenses incurred due to change in law. The estimated amount involved in this matter is ₹ 720 million. The dispute is currently pending.

(vii). A petition has been filed by MPRDC ("**Petitioner**") to challenge the arbitral award dated November 13, 2015 before the District and Sessions Court, Bhopal, against DBL Mundi Sanawad Tollways Limited, in relation to alleged incorrect declaration of the 'Appointed Date', the corresponding payment of revised bonus, damages due to non-handing over of right of way and claim for idling of resources. The estimated amount involved in this matter is ₹ 147 million. The matter is currently pending.

(viii). A petition has been filed by MPRDC ("**Petitioner**") to challenge the arbitral award dated February 26, 2016 before the Additional District Judge, District Court, Bhopal against DBL Uchera Nagod Tollways Limited, in relation to construction of road work, handing over of right of way, delay in fixing of appointed date, and damages for delay, etc. The estimated amount involved in this matter is ₹ 138.5 million. The matter is currently pending.

III. Litigation involving the Sponsor

(i) There is no litigation involving the Sponsor.

IV. Litigation involving the Investment Manager

(i) There is no litigation involving the Investment Manager.

V. Litigation involving the Project Manager

(i) There is no litigation involving the Project Manager.

VI. Litigation involving the Associates of the Sponsor, Investment Manager and Project Manager, including the common associates of the Sponsor, the Investment Manager and the Project Manager

Criminal matters

(i). Shrem Alloys Private Limited has filed an application before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Hallmark Steel Private Limited, pursuant to section 138 of the Negotiable Instruments Act, 1881. The total estimated amount involved in this matter is approximately ₹ 49.68 million. The matter is currently pending.

(ii). Shrem Hallmark Alloys Private Limited has filed an application before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Hallmark Steel Private Limited and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The total estimated amount involved in this matter is approximately ₹ 20 million. The matter is currently pending.

(iii). Shrem Hallmark Alloys Private Limited has filed an application before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Hallmark Steel Private Limited, pursuant to section 138 of the Negotiable Instruments Act, 1881. The total estimated amount involved in this matter is approximately ₹ 10 million. The matter is currently pending.

(iv). Shrem Investments Private Limited has filed five applications before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Kishor Ladulal Gokhru, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amounts involved in these matters are approximately ₹ 0.81 million, ₹ 0.81 million, ₹ 0.81 million, ₹ 0.27 million and ₹ 20 million. These matters are currently pending.

(v). Shrem Investments Private Limited has filed three applications before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Kishor Ladulal Gokhru and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amounts involved in these matters are approximately ₹ 0.81 million, ₹ 0.81 million and ₹ 0.81 million. These matters are currently pending.

(vi). Shrem Investments Private Limited has filed an application before the Court of Metropolitan Magistrate, Andheri, Mumbai, against Shri Ramgiri Sugars Limited and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amount involved in this matter is approximately ₹ 18.29 million. The matter is currently pending.

(vii). Dhanashri Dagade has filed an application before the Chief Judicial Magistrate, Pune, against Shrem Trading LLP and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amount involved in this matter is approximately ₹ 0.19 million. The matter is currently pending.

(viii). Sunita Shankar Dagade has filed an application before the Chief Judicial Magistrate, Pune, against Shrem Trading LLP and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amount involved in this matter is approximately ₹ 1.28 million. The matter is currently pending.

(ix). Vilas Shankar Dagade has filed three applications before the Chief Judicial Magistrate, Pune, against Shrem Trading LLP and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amounts involved in these matters are approximately ₹ 13.66 million, ₹ 8.41 million and ₹ 24.75 million. These matters are currently pending.

(x). Vrushali Vilas Dagade has filed an application before the Chief Judicial Magistrate, Pune, against Shrem Trading LLP and others, pursuant to section 138 of the Negotiable Instruments Act, 1881. The estimated amount involved in this matter is approximately ₹ 0.19 million. The matter is currently pending.

Tax matters

(i). Nitan Chhatwal filed two separate appeals before the Commissioner of Income Tax (Appeals) ("**CIT(A)**"), invoking provisions of section 68 of the Income Tax Act, 1961, in relation to addition of ₹ 384.2 million for the assessment year 2013-2014, and addition of ₹ 305.7 million for the assessment year 2015-2016. The matters are currently pending before the CIT(A).

(ii). Nitan Chhatwal filed an appeal before the Commissioner of Income Tax (Appeals) ("**CIT(A)**"), in relation to the assessment year 2018-2019, invoking provisions of section 68 of the Income Tax Act, 1961, appealing against the writing-off of the investments of Surbhi Chemicals and Investment Limited, whose value has become zero and trading has been suspended. The estimated amount involved in this matter is ₹ 15.1 million. The matter is currently pending before CIT(A).

(iii). Hitesh Chhatwal filed an appeal before the Commissioner of Income Tax (Appeals) ("**CIT(A)**"), in relation to the assessment year 2018-2019, for inclusion of certain jewellery invoices which were not included as a result of non-production. The estimated amount involved in this matter is ₹ 1.625 million. The matter is currently pending before CIT(A).

(iv). Shrem Constructions Private Limited filed an appeal before the Commissioner of Income Tax (Appeals) ("**CIT(A)**"), in relation to the assessment year 2016-2017, for disallowance of expenses pursuant to section 14A of the Income Tax Act, 1961. The estimated amount involved in this matter is ₹ 2.37 million. The matter is currently pending before CIT(A).

Other matters

(i). Pursuant to an application by the Reserve Bank of India, the National Company Law Tribunal, Mumbai Bench ("**NCLT**"), through an order dated December 3, 2019, directed the commencement of the corporate insolvency resolution process ("**CIRP**") against Dewan Housing Finance Corporation Limited ("**DHFL**") under the provisions of the Insolvency and Bankruptcy Code, 2016 ("**IBC**"). The administrator appointed in relation to the CIRP (the "**Administrator**") has filed an application (the "**Avoidance Application**") under the provisions of sections 25(2) (j), 26, 45, 46, 49 and 66 of the IBC before the NCLT, for avoidance of certain transactions between DHFL and Shrem Investments Private Limited and Shrem Construction Private Limited (together, the "**Shrem Entities**") and Nitan Chhatwal, each an associate of the Sponsor and not a party to the Trust. In the Avoidance Application, the Administrator has, amongst others, alleged that the Shrem Entities and Nitan Chhatwal, as the managing director of the Shrem Entities, are involved in transactions aggregating to about ₹ 810 million with DHFL and DHFL Sales and Services Limited, which purported to potentially fall under sections 45, 49 and 66 of the IBC. This matter is currently pending.

(ii). Pursuant to an application by Shrem Residency Private Limited against Shraman Estate Private Limited ("**Affected Party**"), the National Company Law Tribunal, New Delhi ("**NCLT**"), passed an order ("**Order**"), rejecting the claims of Shrem Residency Private Limited for repayment of the inter-corporate deposits aggregating to ₹ 120 million, for a period of six months at an interest of 24% per annum ("**ICDs**") and held that the ICDs issued by Shrem Residency Private Limited to the Affected Party under a joint venture agreement were non-repayable on account of the ICDs being repayable out of the proceeds of the project under the relevant joint venture agreement and that there was no default on part of the Affected Party. Aggrieved by the Order, Shrem Residency Private Limited has filed an appeal before the National Company Law Appellate Tribunal under section 61 of the IBC against the Order. The matter is currently pending.

(iii). Pursuant to an application by Shrem Residency Private Limited against GRG Estate Private Limited ("**Affected Party**"), the National Company Law Tribunal, New Delhi ("**NCLT**"), passed an order ("**Order**"), rejecting the claims of Shrem Residency Private Limited for repayment of the inter-corporate deposits aggregating to ₹ 120 million, for a period of six months at an interest of 24% per annum ("**ICDs**") and held that the ICDs issued by Shrem Residency Private Limited to the Affected Party under a joint venture agreement were non-repayable on account of the ICDs being repayable out of the proceeds of the project under the relevant joint venture agreement and that there was no default on part of the Affected

Party. Aggrieved by the Order, Shrem Residency Private Limited has filed an appeal before the National Company Law Appellate Tribunal under section 61 of the IBC against the Order. The matter is currently pending.

(iv). The Authorities under the Benami Transactions (Prohibition) Act, 1988 ("**Authorities**") have filed a petition against Pravin Kumar Ostwal and Nitan Chhatwal ("**Respondents**") under the Smugglers and Foreign Exchange Manipulators (Forfeiture of Property) Act, 1976. The Respondents have approached the Appellate Tribunal for quashing the aforementioned petition. The matter is currently pending.

(v). Milan Ratilal Dodhia ("**Petitioner**") has filed a petition against Nitan Chhatwal, Smita Chhatwal and Hitesh Chhatwal ("**Respondents**") before the Metropolitan Magistrates Court, Vikhroli ("**Magistrate Court**"). The Respondents have approached the Magistrate Court for quashing the aforementioned petition on the ground that the matter has been wrongly filed against them. The matter is currently pending.

VII. Litigation involving the Trustee

There is currently no pending litigation involving the Trustee.

SECURITIES MARKET OF INDIA

The information in this section has been extracted from documents available on the website of SEBI and the Stock Exchange and has not been prepared or independently verified by the Parties to the Trust or the Lead Manager or any of their respective affiliates or advisors.

The Indian Securities Market

India has a long history of organized securities trading. In 1875, the first stock exchange was established in Mumbai. The BSE and the NSE, together hold a dominant position among the stock exchanges in terms of the number of listed companies, market capitalisation and trading activity.

Stock Exchange Regulation

Indian stock exchanges are regulated primarily by SEBI, as well as by the Government acting through the Ministry of Finance, Capital Markets Division, under the Securities Contracts (Regulation) Act, 1956 ("**SCRA**") and the Securities Contracts (Regulation) Rules, 1957 ("**SCRR**"). SEBI, in exercise of its powers under the SCRA and the SEBI Act, notified the SCR (SECC) Regulations, which regulate *inter alia* the recognition, ownership and internal governance of stock exchanges and clearing corporations in India together with providing for minimum capitalisation requirements for stock exchanges. The SCRA, the SCRR and the SCR (SECC) Regulations along with various rules, bye-laws and regulations of the respective stock exchanges, regulate the recognition of stock exchanges, the qualifications for membership thereof and the manner, in which contracts are entered into, settled and enforced between members of the stock exchanges.

The SEBI Act empowers SEBI to regulate the Indian securities markets, including stock exchanges and intermediaries in the capital markets, promote and monitor self-regulatory organisations and prohibit fraudulent and unfair trade practices. Regulations concerning minimum disclosure requirements by public companies, rules and regulations concerning investor protection, insider trading, substantial acquisitions of shares and takeover of companies, buy-backs of securities, employee stock option schemes, stockbrokers, merchant bankers, underwriters, mutual funds, foreign institutional investors, credit rating agencies and other capital market participants have been notified by the relevant regulatory authority.

Listing and Delisting of Units

The InvIT Regulations provide for listing and delisting of units of infrastructure investment trusts on the stock exchanges.

BSE

Established in 1875, it is the oldest stock exchange in India. In 1956, it became the first stock exchange in India to obtain permanent recognition from the Government under the SCRA. It has evolved over the years into its present status as one of the premier stock exchanges of India.

NSE

NSE was established by financial institutions and banks to provide nationwide online, satellite-linked, screen-based trading facilities with market-makers and electronic clearing and settlement for securities including government securities, debentures, public sector bonds and units. It has evolved over the years into its present status as one of the premier stock exchanges of India. NSE was recognised as a stock exchange under the SCRA in April 1993 and commenced operations in the wholesale debt market segment in June 1994. The capital market (equities) segment commenced operations in November 1994 and operations in the derivatives segment commenced in June 2000.

Internet-based Securities Trading and Services

Internet trading takes place through order routing systems, which route client orders to exchange trading systems for execution. Stockbrokers interested in providing this service are required to apply for permission to the relevant stock exchange and also have to comply with certain minimum conditions stipulated by SEBI. The NSE became the first exchange to grant approval to its members for providing internet-based trading services. Internet trading is possible on both the "equities" as well as the "derivatives" segments of the NSE.

Trading Hours

Trading on both the NSE and the BSE occurs from Monday to Friday, between 9:15 a.m. and 3:30 p.m. 1ST (excluding the 15 minutes pre-open session from 9:00 a.m. to 9:15 a.m. that has been introduced recently). The NSE and the BSE are closed on public holidays. The recognised stock exchanges have been permitted to set their own trading hours (in the cash and derivatives segments) subject to the condition that (i) the trading hours are between 9.00 a.m. and 5.00 p.m.; and (ii) the stock exchange has in place a risk management system and infrastructure commensurate to the trading hours.

Trading Procedure

In order to facilitate smooth transactions, the BSE replaced its open outcry system with BSE On-line Trading facility in 1995. This totally automated screen-based trading in securities and was put into practice nationwide. This has enhanced transparency in dealings and has assisted considerably in smoothening settlement cycles and improving efficiency in back-office work.

NSE has introduced a fully automated trading system called NEAT, which operates on strict time/price priority besides enabling efficient trade. NEAT has provided depth in the market by enabling large number of members all over India to trade simultaneously, narrowing the spreads.

Depositories

The Depositories Act provides a legal framework for the establishment of depositories to record ownership details and effect transfer in book-entry form. Further, SEBI framed regulations in relation to the registration of such depositories, the registration of participants as well as the rights and obligations of the depositories, participants, companies and beneficial owners. The depository system has significantly improved the operation of the Indian securities markets.

SELLING AND TRANSFER RESTRICTIONS

The distribution of this Draft Placement Memorandum and the offer, sale or delivery of the Units is restricted by law in certain jurisdictions. Persons who may come into possession of this Draft Placement Memorandum are advised to consult with their own legal advisors as to what restrictions may be applicable to them and to observe such restrictions. This Draft Placement Memorandum may not be used for the purpose of an offer or invitation in any circumstances in which such offer or invitation is not authorized. Due to the following restrictions, investors are advised to consult legal counsel prior to purchasing Units or making any resale, pledge or transfer of the Units.

European Economic Area

Nothing in this Preliminary Placement Memorandum should be construed as an offer or solicitation or as marketing of any Alternative Investment Fund ("AIF") in the European Economic Area (the "EEA") save in circumstances where such AIF is permitted to be marketed in accordance with the Alternative Investment Fund Managers Directive (2011/61/EU) (the "Directive") and the laws, regulations or delegated acts implementing the directive in any EEA member state. As such, the Trust may not be marketed to, and this Preliminary Placement Memorandum may not be sent to, investors resident, domiciled or with a registered office in any EEA member state unless: (a) in the United Kingdom, Luxembourg or Ireland where the applicable AIF has been notified to the competent authority of the relevant EEA member state by its Alternative Investment Fund Manager ("AIFM") pursuant to Article 42 of the Directive in which case such AIF may be marketed to professional investors in that EEA member state subject to the requirements set forth for each such jurisdiction below; (b) the applicable AIF may be marketed under any other private placement regime or other exemption in the relevant EEA member state; or (c) such dialogue with an investor was responsive to an unsolicited specific request from the investor. This Preliminary Placement Memorandum must not be distributed to, or relied upon by, investors in the EEA in any other circumstances.

Hong Kong

The Units may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong), (ii) to ''professional investors'' within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a ''prospectus'' within the meaning of the Companies Ordinance (Cap. 32, Laws of Hong Kong) and no advertisement, invitation or document relating to the Units may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to the Units which are or are intended to be disposed of only to persons outside Hong Kong or only to ''professional investors'' within the meaning of the Securities and Futures Ordinance (Cap. 571, Laws of Hong Kong) and any rules made thereunder.

Saudi Arabia

This Preliminary Placement Memorandum does not constitute an offer to sell, or the solicitation of an offer to subscribe for or buy, the Units in the Kingdom of Saudi Arabia. The Units have not been licensed for offering, promotion, marketing, advertisement or sale in the Kingdom of Saudi Arabia by the Capital Markets Authority or any other relevant Saudi Arabian government agency.

Singapore

The Lead Manager has acknowledged that this Preliminary Placement Memorandum has not been and will not be registered as a prospectus with the Monetary Authority of Singapore. Accordingly, the Lead Manager has represented and agreed that it has not offered or sold any Units or caused such Units to be made the subject of an invitation for subscription or purchase and will not offer or sell such Units or cause such Units to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Preliminary Placement Memorandum or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of such Units, whether directly or indirectly, to any persons in Singapore other than (i) to an institutional investor (as defined in Section 4A of the SFA) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA and (in the case of an accredited investor) Regulation 3 of the Securities and Futures (Classes of Investors) Regulations 2018, or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the Units are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Units pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law;

(4) as specified in Section 276(7) of the SFA; or

(5) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification: The Units are prescribed capital markets products (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

United Arab Emirates

This Preliminary Placement Memorandum constitutes the promotion of a foreign fund in the United Arab Emirates (the "UAE") for the purposes of Securities & Commodities Authority ("SCA") Chairman Decision No. (9/R.M) of 2016 Concerning the Regulations as to Mutual Funds (the "Fund Regulations") and SCA Chairman Decision No. (3/R.M) of 2017 Concerning the Regulation of Promotion and Introduction (the "Promotion Regulations"). This Preliminary Placement Memorandum is strictly private and confidential, is directed only at, and any investment or investment activity to which this Preliminary Placement Memorandum relates will be engaged in only with, persons who fall within the exceptions set out in the Fund Regulations and the Promotion Regulations (Qualified Investors excluding natural persons). Persons that do not meet this criteria should not rely on, or act on, this Preliminary Placement Memorandum.

By receiving this Preliminary Placement Memorandum, the person to whom it has been issued understands and acknowledges that this Preliminary Placement Memorandum has not been approved by the UAE Central Bank, the SCA, the UAE Ministry of Economy and Planning or any other relevant licensing authority or governmental agency in the UAE, nor has the placement agent, if any, received authorisation or licensing from the UAE Central Bank, the SCA, the UAE Ministry of Economy and Planning or any other relevant licensing authority or governmental agency in the UAE to market or sell securities or fund units within the UAE.

This Preliminary Placement Memorandum is not for general circulation in the UAE and does not constitute a public offer of securities in the UAE in accordance with the Commercial Companies Law (Federal Law No. 2 of 2015), or otherwise.

United States of America

The Units have not been and will not be registered under the Securities Act and may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and applicable U.S. state securities laws. The Units are being offered and sold only outside the United States in offshore transactions in reliance on Regulation S, in each case in compliance with the applicable laws of the jurisdictions where those offers and sales are made.

All Other Units Issued and Sold in this Issue

By accepting delivery of this Draft Placement Memorandum, submitting a bid to purchase the Units and accepting delivery of the Units, you will be deemed to have represented and agreed as follows:

(a) you acknowledge that the Units have not been and will not be registered under the Securities Act, or with any securities regulatory authority of any state of the United States, and accordingly may not be offered or sold within the United States except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act;

(b) you and the person, if any, for whose account or benefit you are acquiring the Units, is purchasing the Units in an offshore transaction meeting the requirements of Rule 903 of Regulation S under the Securities Act;

(c) you and the person, if any, for whose account or benefit you are acquiring the Units, was located outside the United States at the time the Issue was made to it and when the buy order for the Units was originated, and continues to be located outside the United States and has not purchased the Units for the account or benefit of any person in the United States or entered into any arrangement for the transfer of the Units or any economic interest therein to any person in the United States;

(d) you are not an affiliate (as defined in Rule 405 under the Securities Act) of the Trust, or a dealer or an underwriter or a person acting on behalf of such affiliate; and you are not in the business of buying and selling securities as a dealer or an underwriter;

(e) you are aware of the restrictions on the offer and sale of the Units pursuant to Regulation S described in this Draft Placement Memorandum;

(f) neither you, nor any of your affiliates, nor any person acting on your behalf or any of your affiliates, will make any "directed selling efforts" as defined in Regulation S under the Securities Act in the United States with respect to the Units; and

(g) you acknowledge that the Trust, the Investment Manager and the Lead Manager and their respective affiliates (as defined in Rule 405 under the Securities Act), and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agree that, if any of such acknowledgements, representations and agreements deemed to have been made by virtue of your purchase of the Units are no longer accurate, you will promptly notify the Trust and the Investment Manager, and if you are acquiring any of the Units as a fiduciary or agent for one or more accounts, you represent that you have sole investment discretion with respect to each such account and that you have full power to make the foregoing acknowledgements, representations and agreements on behalf of such accounts.

YOU ARE ADVISED TO CONSULT YOUR OWN LEGAL COUNSEL PRIOR TO MAKING ANY OFFER, RE-SALE, PLEDGE OR TRANSFER OF THE UNITS.

RIGHTS OF UNITHOLDERS

The rights and interests of Unitholders are included in this Draft Placement Memorandum and the InvIT Regulations. Under the Trust Deed and the Investment Management Agreement, these rights and interests are safeguarded by the Trustee and the Investment Manager, respectively. Any rights and interests of Unitholders as specified in this Draft Placement Memorandum would be deemed to be amended to the extent of any amendment to the InvIT Regulations.

Beneficial Interest

Each Unit represents an undivided beneficial interest in the Trust. A Unitholder has no equitable or proprietary interest in the InvIT Assets and is not entitled to transfer of the InvIT Assets (or any part thereof) or any interest in the InvIT Assets (or any part thereof) of the Trust. A Unitholder's right is limited to the right to require due administration of the Trust in accordance with the provisions of the Trust Deed and the Investment Management Agreement.

Ranking

No Unitholder of the Trust shall enjoy superior voting or any other rights over another Unitholder. Further, the Units shall not have multiple classes, except any subordinate Units that may be issued only to the Sponsors and its Associates, where such subordinate units carry only inferior voting or any other rights compared to other Units in the future in accordance with Regulation 4(2)(h) of the InvIT Regulations.

Redressal of grievances

The Trustee shall periodically review the status of Unitholders' complaints and their redressal undertaken by the Investment Manager. The Stakeholders' Relationship Committee of the Investment Manager shall monitor the status of complaints and their redressal. For details, please see the section entitled "*Corporate Governance*" on page 127.

Distribution

The Unitholders shall have the right to receive distribution in accordance with the InvIT Regulations and in the manner provided in this Draft Placement Memorandum. For details, please see the section entitled "*Distribution*" on page 376.

Meeting of Unitholders

Meetings of Unitholders will be conducted in accordance with the InvIT Regulations.

Passing of resolutions

1. With respect to any matter requiring approval of the Unitholders:

   (i) a resolution shall be considered as passed when the votes cast by Unitholders, so entitled and voting, in favour of the resolution exceed a certain percentage as specified in the InvIT Regulations, of votes cast against;

   (ii) the voting may be done by postal ballot or electronic mode;

   (iii) a notice of not less than 21 days shall be provided to the Unitholders;

   (iv) voting by any Unitholder (including, the Sponsor in its capacity as a Unitholder), who is a related party in such transaction, as well as associates of such Unitholder(s) shall not be considered on the specific issue;

   (v) the Investment Manager shall be responsible for all the activities pertaining to conducting of meeting of the Unitholder, subject to oversight by the Trustee.

   However, for issues pertaining to the Investment Manager, including a change in Investment Manager, removal of Investment Manager or change in control of Investment Manager; the Trustee shall convene and handle all activities pertaining to conduct of the meetings. Additionally, for issues pertaining to the Trustee, including change in Trustee, the Trustee shall not be involved in any manner in the conduct of the meeting.

2. For the Trust:

   (i) an annual meeting of all Unitholders shall be held not less than once a year within 120 days from the end of each financial year and the time between two meetings shall not exceed 15 months;

   (ii) with respect to the annual meeting of Unitholders,

      (a) any information that is required to be disclosed to the Unitholders and any issue that, in the ordinary course of business, may require approval of the Unitholders may be taken up in the meeting including:

         - latest annual accounts and performance of the Trust;

- approval of auditors and fee of such auditors, as may be required;
- latest valuation reports;
- appointment of valuer, as may be required; and
- any other issue;

(b) for any issue taken up in such meetings which require approval from the Unitholders other than as specified in Regulation 22(6) of the InvIT Regulations, votes cast in favour of the resolution shall be more than the votes cast against the resolution.

3. In case of the following, approval from the Unitholders shall be required where the votes cast in favour of the resolution shall be more than the votes cast against the resolution:

(i) any approval from the Unitholders required in terms of Regulation 18 (*Investment conditions and dividend policy)*, Regulation 19 (*Related Party Transactions*) and Regulation 21 *(Valuation of assets*) of the InvIT Regulations;

(ii) any borrowings, in excess of the limits specified under Regulation 20(2) of the InvIT Regulations;

(iii) any transaction, other than any borrowing, the value of which is equal to or greater than 25% of the InvIT Assets;

(iv) increasing period for compliance with investment conditions to one year in accordance with Regulation 18(5)(c) of the InvIT Regulations;

(v) any issue, in the ordinary course of business, which in the opinion of the Sponsor or the Trustee or the Investment Manager, is material and requires approval of the Unitholders, if any;

(vi) any issue for which SEBI or the designated stock exchanges requires approval; and

(vii) de-classification of the status of Sponsor.

4. In case of the following, approval from the Unitholders shall be required where the votes cast in favour of the resolution shall not be less than one and a half times the votes cast against the resolution:

(i) any issue, not in the ordinary course of business, which in the opinion of the Sponsor or Investment Manager or Trustee requires approval of the Unitholders;

(ii) any issue for which SEBI or the designated stock exchanges require approval;

(iii) any issue taken up on request of the Unitholders including:

(a) removal of the Investment Manager and appointment of another investment manager to the Trust;

(b) removal of the Auditors and appointment of another auditors to the Trust;

(c) removal of the Valuer and appointment of another valuer to the Trust;

(d) any issue which the Unitholders have sufficient reason to believe that is detrimental to the interest of the Unitholders; and

(e) change in the Trustee, if Unitholders have sufficient reason to believe that acts of the Trustee are detrimental to the interest of Unitholders.

With respect to the rights of the Unitholders under clause 4(iii) above:

(i) not less than 25% of the Unitholders by value, other than any party related to the transactions and its associates, shall apply, in writing, to the Trustee for the purpose;

(ii) on receipt of such application, the Trustee shall require, with the Investment Manager to place the issue for voting in the manner as specified in the InvIT Regulations;

(iii) with respect to clause 4(iii)(e) above, not less than 60% of the Unitholders by value shall apply, in writing, to the Trustee for the purpose.

Information rights

The Investment Manager, on behalf of the Trust, shall also submit such information to the Stock Exchange and Unitholders, on a periodical basis as may be required under the InvIT Regulations and the Listing Agreement to be entered into with the Stock Exchange. The Investment Manager (on behalf of the Trust) shall disclose to the Stock Exchange, Unitholders and SEBI, all such information and in such manner as specified under the InvIT Regulations and such other requirements as may be specified by SEBI. The Investment Manager, on behalf of the Trust, shall also provide disclosures or reports specific to the sector or sub-sector in which the Trust has invested or proposes to invest, in the manner as may be specified by SEBI.

Buyback and Delisting of Units

Any buyback or delisting of Units, shall be in accordance with the Trust Deed and the InvIT Regulations.

DILUTION

Dilution is the amount by which the Issue Price exceeds the net asset value ("**NAV**") per Unit, immediately after the completion of this Issue. NAV per Unit is determined by subtracting the total liabilities of the Trust from the total assets of the Trust and dividing by the number of Units issued and outstanding immediately before this Issue. There was no *pro forma* NAV before this Issue for the Units.

The Trust will issue [●] Units at an Issue Price of ₹ [●] for each Unit, resulting in a combined NAV of the Trust of approximately ₹ [●] million or ₹ [●] per Unit based on the total number of Units outstanding after the completion of this Issue. This represents an immediate dilution in combined NAV of approximately ₹ [●] per Unit to the Sponsor and an immediate dilution in combined NAV of approximately ₹ [●] per Unit to other Unitholders, subscribing in this Issue.

The following provides the per Unit dilution as on December 31, 2020:

Combined NAV per Unit before this Issue	Not Applicable
Combined NAV per Unit after this Issue	₹ [●]
Dilution in NAV per Unit to the Sponsor attributable to the Sponsor	₹ [●]
Dilution in NAV per Unit to Unitholders (other than the Sponsor)	₹ [●]
Dilution to Unitholders (other than the Sponsor) as a percentage of the Issue Price	[●]%

ISSUE STRUCTURE

Initial offer through a private placement of up to [●] Units for cash at price of ₹ [●] per Unit, aggregating up to ₹ 6,000 million by the Trust. In accordance with Regulation 14(1A) of the InvIT Regulations, this Issue shall constitute at least 25% of the total outstanding Units on a post-Issue basis.

Particulars	Details
Number of Units available for Allotment/allocation	Up to [●] Units
Basis of Allotment/ allocation	Discretionary
Minimum Bid	Such number of Units that the Bid Amount is not less than ₹ 260 million, and in multiples of 200,000 Units thereafter
Maximum Bid	Such number of Units (in multiples of 200,000 Units) not exceeding the size of this Issue, subject to applicable investment limits
Mode of Allotment	Compulsorily in dematerialised form
Bid Lot	A minimum of 2,600,000 Units, and in multiples of 200,000 Units thereafter
Allotment Lot	A minimum of 2,600,000 Units, and in multiples of 200,000 Units thereafter
Trading Lot[(1)]	Upon listing, such number of Units, the value of which is, or exceeds, ₹ 20 million
Arrangements for Disposal of Odd Lots	The Stock Exchange will provide for an odd lot window to facilitate the trading of odd lots of Units that may be created from time to time on account of various events, including instances such as declaration of NAV and any distributions in respect of the Units
Who can apply	(i) Institutional Investors; and (ii) Bodies Corporate
Terms of Payment	Entire Bid Amount shall be payable along with the Application Form

[(1)] *The trading lot post-listing of the Units may be modified in accordance with the InvIT Regulations and other applicable law.*

Indicative Issue Timeline

Event	Indicative Date
Bid/Issue Opening Date	[●]
Bidders to submit completed Application Forms	[●]
Bid/Issue Closing Date	[●]
Dispatch of CANs to successful Bidders	On or about [●]
Closing Date	On or about [●]
Designated Date	On or about [●]
Initiation of refunds, if any, in the event of any failure to obtain final listing and trading approval within 30 Working Days from the date of Allotment	On or about [●]
Listing Date	On or about [●]

The above timetable is indicative and does not constitute any obligation or liability on the Trust, the Investment Manager, the Trustee or the Lead Manager.

While the Investment Manager shall ensure that all steps for the completion of the necessary formalities for the listing and the commencement of trading of the Units on the Stock Exchange is completed within 30 Working Days from the date of Allotment, the timetable may change due to various factors, such as, any extension of the Bid/Issue Period by the Investment Manager or any delay in receiving the final listing and trading approval from the Stock Exchange. The commencement of trading of the Units will be entirely at the discretion of the Stock Exchange and in accordance with applicable law.

ISSUE INFORMATION

Below is a summary, intended to provide a general outline of the procedures for the bidding, application, payment, Allocation and Allotment of the Units to be offered pursuant to the Issue.

Eligible Investors are advised to inform themselves of any restrictions or limitations that may be applicable to them under applicable law to which they are subject, and should consult their respective advisors in this regard. Eligible Investors that apply in this Issue will be required to confirm, and will be deemed to have represented to the Trustee, the Investment Manager, the Lead Manager and their respective directors, officers, agents, affiliates and representatives, that they are eligible under all applicable laws, rules, regulations, guidelines and approvals to acquire the Units. The Investment Manager, the Sponsor and the Lead Manager and their respective directors, officers, agents, affiliates and representatives accept no responsibility or liability for advising any investor on whether such investor is eligible to acquire the Units.

Authority for the Issue

The Trust is making this Issue in accordance with Regulation 14(2) of the InvIT Regulations. The Issue was authorised and approved by the board of directors of the Investment Manager on February 22, 2021.

The Trust has received the in-principle approval of the NSE for the listing of the Units on the NSE, pursuant to the letter dated [●]. The Investment Manager has filed a copy of this Draft Placement Memorandum, and will file a copy of the Placement Memorandum and the Final Placement Memorandum, with SEBI and the Stock Exchange.

The Units have not been and will not be registered, listed or otherwise qualified in any jurisdiction outside India and may not be offered or sold, and Bids may not be made by persons in any such jurisdiction, except in compliance with the applicable law of such jurisdiction. The Units shall not be offered or sold where such offer or sale would require registration, qualification or listing.

Eligible Investors should note that Allotment to successful Bidders will only be in the dematerialized form. Application Forms which do not have the details of the Bidders' demat accounts including DP ID, PAN and Client ID will be treated as incomplete and rejected. Bidders will not have the option of receiving Allotment in physical form. On Allotment, the Units will be traded only on the dematerialized segment of the Stock Exchange.

Issue Procedure

1. The Lead Manager, in consultation with the Investment Manager, shall electronically circulate serially numbered copies of the Placement Memorandum and the Application Form to Eligible Investors. The Application Form will be specifically addressed to each Eligible Investor. The list of Eligible Investors to whom the serially numbered copies of the Placement Memorandum and the Application Form will be circulated, shall be determined by the Investment Manager, in consultation with the Lead Manager.

2. **Unless a serially numbered Placement Memorandum along with an Application Form is addressed to a particular Eligible Investor, no invitation to subscribe shall be deemed to have been made to such Eligible Investor.** Even if such documentation were to come into the possession of any person other than the intended recipient, no offer or invitation to offer shall be deemed to have been made to such person and such person shall not be eligible to participate in the Issue.

3. Bidders may submit an Application Form to the Lead Manager, only during the Bid/Issue Period and not later than the Bid/Issue Closing Date.

4. Bidders will be required *inter alia*, to indicate the following in the Application Form:

    a. a representation that it is outside the United States acquiring the Units in an offshore transaction under Regulation S has agreed to certain other representations set forth in the Application Form;

    b. name of the Bidder to whom the Units are to be Allotted;

    c. number of Units Bid for;

    d. details of the demat accounts to which the Units should be credited;

    e. details of the Bid Amount deposited by the Bidder into the Cash Escrow Account;

    f. a representation that such person is an "Institutional Investor" or a "Body Corporate" in terms of the InvIT Regulations;

g. the details of Bidder's bank account along with fund transfer details, in case of any refund; and

h. any other information which may be relevant to the Bid.

Note: The Bids made by asset management companies or custodians of Mutual Funds, if permitted under applicable law, shall specifically state the names of the concerned schemes for which the Bids are made. In case of a Mutual Fund, a separate Bid can be made in respect of each scheme of the Mutual Fund registered with SEBI and such Bids in respect of more than one scheme of the Mutual Fund will not be treated as multiple Bids provided that the Bids clearly indicate the scheme for which the Bid has been made. Bidders are advised to ensure that any single Bid from them does not exceed the investment limits or maximum number of Units that can be held by them under applicable law.

5. Each Bidder shall be required to make payment of the entire Bid Amount for the Units at the Offer Price, only through electronic transfer to the Cash Escrow Account during the Bid/Issue Period, along with the completed Application Form.

6. No payment shall be made by Bidders in cash. Please note that any payment of Bid Amount for Units shall be made from the bank account of the relevant Bidder applying for Units, and the Lead Manager, on behalf of the Investment Manager, shall keep a record of the bank account from where such Bid Amounts have been received. The Bid Amount payable on Units to be held by joint holders shall be paid from the bank account of the person whose name appears first in the completed Application Form. Pending listing, all Bid Amounts received from Bidders shall be kept by in a separate bank account with a scheduled bank (i.e. the Cash Escrow Account).

7. Once a duly completed Application Form is submitted by a Bidder on the basis of disclosures in the Placement Memorandum, such Application Form constitutes an irrevocable offer and cannot be withdrawn.

8. Upon receipt of the completed Application Form and the receipt of the Bid Amount in the Cash Escrow Account, the Investment Manager shall, after Bid/Issue Closing Date, determine the number of the Units to be Allotted pursuant to the Issue, in consultation with the Lead Manager.

9. Upon determination of the Bidders to whom Allocation shall be made, the Lead Manager, on behalf of the Investment Manager, will send the CANs, along with serially numbered Placement Memorandum, to the Bidders who have been Allocated Units. The dispatch of a CAN shall be deemed a valid, binding and irrevocable contract in respect of the number of Units Allocated to the Bidder. **Please note that the Allocation and Allotment will be at the absolute discretion of the Investment Manager, and will be based on the recommendation of the Lead Manager**.

10. Upon the dispatch of CAN to successful Bidders, the Investment Manager shall Allot Units of the Trust as per the details in the CAN sent to successful Bidders. The Investment Manager will intimate to the Stock Exchange about the details of the Allotment and apply for approval of the Units for listing and trading of the Units on the Stock Exchange after the credit of Units into the demat accounts of the successful Bidders.

11. Allottees are advised to instruct their respective Depository Participant to accept the Units that may be Allotted to them pursuant to the Issue into their respective demat accounts.

12. In the event the Investment Manager is unable to Allot the Units or upon cancellation of the Issue, the Investment Manager shall be liable to refund the Bid Amounts with interest to the Bidders in accordance with applicable law. For each Bidder to whom any amounts are to be refunded, the refund shall be made to the same bank account from which the Bid Amount was remitted by such Bidder.

13. The Units that have been credited to the demat accounts of the Bidders shall be eligible for trading on the Stock Exchange only upon the receipt of final listing and trading approval from the Stock Exchange. Bidders are advised to apprise themselves of the status of the receipt of the permissions from the Stock Exchange or the Investment Manager.

14. The Bid Amount will be transferred to the account of the Trust from the Cash Escrow Account only after receipt of the final listing and trading approval for the Units from the Stock Exchange.

Who can Bid?

Each Bidder should check if it is eligible to Bid under applicable law. Furthermore, certain categories of Bidders may not be permitted to Bid in the Issue or hold Units in excess of the limits specified under applicable law.

Only Institutional Investors and Bodies Corporate are eligible to participate in this Issue.

An Institutional Investor is defined in Regulation 2(1)(ya) of the InvIT Regulations.

A Body Corporate is defined in Section 2(11) of the Companies Act, 2013 to include a company incorporated outside India, but does not include (i) a co-operative society registered under any law relating to co-operative societies; and (ii) any other body corporate (not being a company as defined in the Companies Act, 2013) which the Central Government may, by notification, specify in this regard.

Bodies Corporate incorporated outside India are permitted to participate in the Issue subject to compliance with Schedule VIII of the Foreign Exchange Management (Non-debt Instruments) Rules, 2019.

The Trustee, the Valuer and the employees of the Valuer who were involved in the valuation of the Trust are not permitted to Bid in this Issue.

Bids by FPIs

Foreign Portfolio Investors (other than individuals, corporate bodies and family offices) are permitted to participate in the Issue subject to compliance with Schedule VIII of Foreign Exchange Management (Non-debt Instruments) Rules, 2019. In case of Bids by FPIs the payment should be paid as inward remittance from abroad through banking channels or out of funds held in NRE, SNRR or FCNR(B) account maintained in accordance with the Foreign Exchange Management (Deposit) Regulations, 2016, along with documentary evidence in support of the remittance. In case of Bids made by FPIs, a verified true copy of the certificate of registration issued by the designated depository participant under the SEBI FPI Regulations is required to be attached along with the Application Form, failing which the Investment Manager, in consultation with the Lead Manager, reserves the right to reject the Bid.

Bids by SEBI registered VCFs and AIFs

The SEBI VCF Regulations prescribe, amongst others, the investment restrictions on VCFs registered with SEBI. Further, the SEBI AIF Regulations prescribe, amongst others, the investment restrictions on AIFs. Further, VCFs which have not re-registered as an AIF under the SEBI AIF Regulations shall continue to be regulated by the SEBI VCF Regulations until the existing fund or scheme managed by the fund is wound up and such funds shall not launch any new scheme after the notification of the SEBI AIF Regulations. Additionally, VCFs and AIFs are subject to certain investment restrictions, including with respect to the percentage of investible funds held in each investee entity. Allotments made in respect of Bids by VCFs and AIFs in this Issue shall be subject to the rules and regulations that are applicable to each of them respectively.

Bids by Banking Companies

Bids may be made by banks as permitted by the RBI and is subject to conditions specified in the Prudential Guidelines – Banks' investment in units of REITs and InvITs dated April 18, 2017. In case of Bids made by banking companies registered with the RBI, certified copies of (i) the certificate of registration issued by the RBI, and (ii) the approval of such banking company's investment committee are required to be attached to the Application Form. Failing this, any such Bid is liable to be rejected.

Bids by Provident Funds/Pension Funds

On March 2, 2015, the Ministry of Finance issued a notification allowing investments by non-government provident funds, pension funds, superannuation funds and gratuity funds up to 5% in infrastructure investment trusts, as specified. On May 29, 2015, the Ministry of Labour and Employment issued a notification allowing investments by provident funds up to 5% in infrastructure investment trusts, as specified. However, such investments by provident funds, pension funds, superannuation funds and gratuity funds will be subject to, amongst others, the sponsor entity of the InvIT having a minimum of AA or equivalent rating in the applicable rating scale from at least two credit rating agencies registered with SEBI. In case of Bids made by provident funds/ pension funds, subject to applicable laws, with minimum corpus of ₹ 250 million, a certified copy of certificate from a chartered accountant certifying the corpus of the provident fund/pension fund must be attached to the Application Form. Failing this, any such Bid is liable to be rejected.

Bids by NPS Schemes

The Pension Fund Regulatory and Development Authority issued circulars dated June 3, 2015 and September 2, 2015, respectively, allowing investments by national pension fund schemes ("**NPS Schemes**") up to 5% in infrastructure investment trusts, as specified. However, in accordance with the circular dated May 4, 2017 (effective from May 8, 2017), as amended by the circular dated May 8, 2018, issued by PFRDA, such investments by NPS Schemes will be subject to, amongst others, such securities having a minimum of A or equivalent rating in the applicable rating scale from at least two credit rating agencies registered with SEBI, subject to the maximum permissible amount of investments in securities rated between A- and AA. In case of Bids made by NPS Schemes, with minimum corpus of ₹ 250 million, a certified copy of certificate from a chartered accountant certifying the corpus of the provident fund/pension fund must be attached to the Application Form. Failing this, any such Bid is liable to be rejected.

Bids by Mutual Funds

Bids may be made by mutual funds under all its schemes, existing and future, subject to the investment conditions and other restrictions prescribed under the Securities and Exchange Board of India (Mutual Funds) Regulations, 1996 (including, the circular on mutual funds dated February 28, 2017 and any other circulars, notifications and guidelines issued thereunder).

Bids by Insurance Companies

Bids may be made by insurance companies as permitted by the Insurance Regulatory and Development Authority of India in terms of the Master Circular – Investments, 2016 and the circular issued by the IRDAI entitled, Investment in Units of Real Estate Investment Trusts (REIT) & Infrastructure Investment Trusts (InvIT), dated March 14, 2017.

Bids under Power of Attorney

In case of Bids made pursuant to a power of attorney by Institutional Investors or bodies corporate, a certified copy of the power of attorney or the relevant resolution or authority, as the case may be, along with a certified copy of the memorandum of association and articles of association and/or bye laws must be submitted along with the Application Form. Failing this, any such Bid is liable to be rejected.

The Investment Manager, in consultation with the Lead Manager, in its absolute discretion, reserves the right to relax the above condition of simultaneous lodging of the power of attorney along with the Application Form.

Allotments, if any, made to FVCIs in the Issue are subject to the respective rules and regulations that are applicable to each of them.

The Parties to the Trust and the Lead Manager are not liable for any amendment or modification or change to applicable law or regulations, which may occur after the date of the Placement Memorandum. Eligible Investors are advised to make their independent investigations and satisfy themselves that they are eligible to apply in this Issue. Eligible Investors are advised to ensure that any single application from them does not exceed the investment limits or maximum number of Units that can be held by them under applicable law or regulation or as specified in the Placement Memorandum.

Note: *Affiliates or associates of the Lead Manager who are Eligible Investors may participate in the Issue in compliance with applicable law.*

Maximum and Minimum Bid Size

(i) Each Bidder is required to Bid for a Minimum Bid Size of ₹ 260 million and in multiples of 200,000 Units thereafter.

(ii) No Bidder shall Bid for such number of Units that exceeds the Issue size.

Application Process

Application Form

Bidders shall only use the Application Forms provided by the Investment Manager electronically, for the purpose of making a Bid in terms of the Placement Memorandum.

By making a Bid for the Units through Application Forms, Bidders will be deemed to have made the following representations and warranties, respectively:

1. The Bidder confirms that it is an Institutional Investor or a Body Corporate, and is eligible to participate in the Issue;
2. The Bidder has deposited the Bid Amount in the Cash Escrow Account;
3. The Bidder has no right to withdraw its Bid once such Bid is submitted to the Lead Manager;
4. The Bidder confirms that it is eligible to apply for, and hold, any Units that may be Allotted to the Bidder pursuant to the Issue. The Bidder further confirms that any such Allotment of Units to, and the holding of Units by, the Bidder does not, and shall not, exceed the level permissible as per any law applicable to the Bidder; and
5. The Bidder confirms that it is outside the United States and it is purchasing the Units in an offshore transaction in reliance on Regulation S under the U.S. Securities Act.

ELIGIBLE INVESTORS MUST PROVIDE THEIR DEMAT ACCOUNT DETAILS, THEIR DEPOSITORY PARTICIPANT'S NAME, DEPOSITORY PARTICIPANT IDENTIFICATION NUMBER, BENEFICIARY ACCOUNT NUMBER AND BANK ACCOUNT DETAILS IN THE APPLICATION FORM. ELIGIBLE INVESTORS

MUST ENSURE THAT THE NAME GIVEN IN THE APPLICATION FORM IS EXACTLY THE SAME AS THE NAME IN WHICH THE DEMAT ACCOUNT IS HELD.

Demographic details such as address and bank account details will be obtained from the Depositories as per the demat account details given in the Application Form.

Instructions for completing the Application Form

Bidders may note that Application Forms not filled completely or correctly as per instructions provided in the Placement Memorandum and the Application Forms are liable to be rejected. The Bids should adhere to the following:

(i) Bids must be made only in the prescribed Application Form;

(ii) Application Form must be completed in full, in BLOCK LETTERS in ENGLISH and in accordance with the instructions contained herein and in the Application Form. Incomplete Application Forms are liable to be rejected. Bidders must provide details of valid and active DP ID, Client ID and PAN clearly and without error. Invalid accounts, suspended accounts, or where such account is classified as invalid or suspended shall not be considered for Allotment. Bidders should note that the Lead Manager, Registrar and the Investment Manager will not be liable for errors in data entry due to incomplete or illegible Application Forms; and

(iii) Bidders are required to sign the Application Form. Bidders should ensure that the thumb impressions and signatures other than in the languages specified in the Eighth Schedule to the Constitution of India, are attested by a Magistrate or a Notary Public or a Special Executive Magistrate under official seal.

Submission of Application Form

All Application Forms must be duly completed with information including the name of the Bidder, the number of the Units applied for and the Bid Amount. The Application Form shall be submitted to the Lead Manager either through electronic form or through physical delivery at the following address:

ICICI Securities Limited
ICICI Centre,
H T Parekh Marg
Churchgate
Mumbai 400 020
Tel: +91 22 2288 2460
Fax: +91 22 2282 6580
E-mail: shrem.invit@iciciseucities.com
Contact Person: Mr. Rupesh Khant

The Lead Manager shall not be required to provide any written acknowledgement of the Application Form.

PAN

Each Eligible Investor must mention its Permanent Account Number ("PAN") allotted under the IT Act. Each Eligible Investor is required to submit a copy of its PAN card along with the Application Form. Applications without this information will be considered incomplete and are liable to be rejected. Eligible Investors should not submit the general index registrar number ("**GIR**") instead of the PAN as the Application Form is liable to be rejected on this ground.

Bank Account for Payment of Bid Amount

The Investment Manager has opened the Cash Escrow Account with [●], acting as the Escrow Collection Bank in terms of the arrangement among the Trust, the Investment Manager, the Lead Manager and the Escrow Collection Bank. Bidders are required to deposit the entire Bid Amount during the Bid/Issue Period, together with the completed Application Form, in favour of "[●]".

If the payment of the Bid Amount is not made favouring the Cash Escrow Account within the Bid/Issue Period, the Application Form of the Bidder is liable to be rejected.

The Trustee and the Investment Manager shall utilize the amount deposited in the Cash Escrow Account only for the purposes of: (i) adjustment against Allotment; or (ii) refund of application monies in case of any failure to allot Units in the Issue. For further details, please see the section entitled "*Issue Information – Refunds*" on page 441.

Payment Instructions

The payment of Bid Amount shall be made by the Bidders in the name of the Cash Escrow Account as per the payment instructions provided in the Placement Memorandum and the Application Form.

Payments are to be made only through electronic fund transfer. Payments through cheques or cash or any mode other than electronic mode shall be rejected.

Allocation

Build-up of the book

The Bidders shall submit their Bids for the Units within the Bid/Issue Period to the Lead Manager. The book shall be maintained by the Lead Manager.

Method of Allocation

The Investment Manager shall determine the Allocation in consultation with the Lead Manager on a discretionary basis. After finalization of the Allocation, the Investment Manager will update the Placement Memorandum with the Issue details and file the Final Placement Memorandum with SEBI and the Stock Exchange, and dispatch the CAN, together with a serially numbered Final Placement Memorandum to each successful Bidder.

THE DECISION OF THE INVESTMENT MANAGER, IN CONSULTATION WITH THE LEAD MANAGER IN RESPECT OF ALLOCATION SHALL BE FINAL AND BINDING ON ALL BIDDERS. BIDDERS MAY NOTE THAT ALLOCATION OF THE UNITS IS AT THE SOLE AND ABSOLUTE DISCRETION OF THE INVESTMENT MANAGER, IN CONSULTATION WITH THE LEAD MANAGER, AND BIDDERS MAY NOT RECEIVE ANY ALLOCATION EVEN IF THEY HAVE SUBMITTED VALID APPLICATION FORMS. NEITHER THE INVESTMENT MANAGER NOR THE LEAD MANAGER ARE OBLIGED TO ASSIGN ANY REASON FOR ANY SUCH NON-ALLOCATION.

Confirmation of Allocation Note or CAN

Based on the Application Forms and Bid Amounts received from Bidders, the Investment Manager, in consultation with the Lead Manager, in their sole and absolute discretion, will decide the Bidders to whom the serially numbered CANs shall be sent, pursuant to which the details of Units Allocated to them shall be notified to such Bidders. Further, details of the amounts payable for Allotment of the Units in their respective names shall be notified to such Bidders. Additionally, the CAN will include the probable designated date, being the date of credit of the Units to the respective Bidder's demat account ("**Designated Date**").

Bidders, who have been Allocated Units, would also be sent a serially numbered Final Placement Memorandum either in electronic form or by physical delivery along with the serially numbered CAN. The dispatch of the serially numbered Final Placement Memorandum and the CAN to Bidders shall be deemed a valid, binding and irrevocable contract in respect of the number of Units Allocated to each successful Bidder.

Bidders are advised to instruct their Depository Participant to accept the Units that may be Allotted to them pursuant to the Issue.

Bidders' Demat Account and Bank Account Details

Bidders should note that on the basis of Bidders' PAN, DP ID and Client ID provided by them in the Application Form, the Registrar will obtain from the Depository the demographic details including the Bidders' address and bank account details (including the nine-digit Magnetic Ink Character Recognition ("**MICR**") code as appearing on a cheque leaf (the "**Demographic Details**"), from the Depository. The Demographic Details will be used for giving refunds (including through direct credit, NACH, NECS, NEFT and RTGS) to the Bidders. It is mandatory to provide the bank account details in the space provided in the Application Form and Application Forms that do not contain such details are liable to be rejected. Hence, Bidders are advised to immediately update their bank account details, PAN and Demographic Details as appearing in the records of the Depository Participant and ensure that they are true and correct. Failure to do so could result in delays in credit of refunds to Bidders at their sole risk and none of the Lead Manager, the Registrar, the Escrow Collection Bank, the Investment Manager or the Trustee will have any responsibility or undertake any liability for this. Accordingly, Bidders should carefully fill in their demat account details in the Application Form.

By signing the Application Form, the Bidder is deemed to have authorized the Depositories to provide to the Registrar, on request, the required Demographic Details as available in their records.

Closing Date and Allotment of the Units

The Trustee and the Investment Manager will endeavour to complete the Allotment by the Closing Date.

In accordance with the InvIT Regulations, the Units will be issued and Allotment shall be made only in dematerialised form to the Allottees. The Investment Manager (on behalf of the Trust) and the Registrar have entered into:

- Agreement dated February 16, 2021 with NSDL; and
- Agreement dated February 18, 2021 with CDSL.

The Trustee and/or the Investment Manager, at their discretion, reserve the right to cancel the Issue at any time prior to the issuance of CAN, without assigning any reason whatsoever.

Following the Allotment of the Units, the Investment Manager will apply for final listing and trading approval from the Stock Exchange. The Investment Manager and the Lead Manager shall endeavour to list the Units on the Stock Exchange within 30 Working Days from the date of Allotment.

Refunds

In the event of non-receipt of listing permission from the Stock Exchange(s), the Units shall not be eligible for listing and the Trust shall be liable to refund the Bid Amounts to the Allottees immediately along with interest at the rate of 15% per annum, from the date of Allotment till such time prescribed under, and in compliance with, the InvIT Regulations.

Other Instructions

Right to Reject Applications

The Investment Manager, in consultation with the Lead Manager, may reject Bids, in part or in full, without assigning any reason whatsoever. The decision of the Investment Manager and the Lead Manager in relation to the rejection of Bids shall be final and binding.

Units in Dematerialised form with NSDL or CDSL

The Allotment shall be only in dematerialised form (i.e., not in physical certificates but represented by the statement issued through the electronic mode).

A Bidder applying for the Units to be issued pursuant to the Issue must have at least one beneficiary account with a Depository Participant of either NSDL or CDSL prior to making the Bid. Allotment to a successful Bidder will be credited in electronic form directly to the beneficiary account (with the Depository Participant) of such Bidder.

Units in electronic form can be traded only on the stock exchanges having electronic connectivity with NSDL and CDSL. NSE has electronic connectivity with NSDL and CDSL. The trading of the Units would be in dematerialised form only for all Unitholders in the respective demat segment of NSE. For details in respect of the minimum trading lot, please see the section entitled "*Issue Structure*" on page 434.

The Trustee, the Investment Manager or the Lead Manager, will not be responsible or liable for the delay in the credit of the Units to be issued and transferred pursuant to the Issue due to errors in the Application Form, delay in payment of Bid Amount or otherwise on part of the Bidders.

STATEMENT OF TAX BENEFITS

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STATEMENT OF TAX BENEFITS

To

The Board of Directors

AXIS Trustee Services Limited
(Trustee of SHREM InvIT)

And

The Board of Directors

SHREM Financial Private Limited
(As the Investment Manager of the SHREM InvIT)

Dear Sirs,

Sub: **Statement of possible tax benefits available to SHREM INVIT and its unit holders under the Income Tax Act, 1961.**

We refer to the proposed initial Private placement offering of the units of SHREM InvIT ("the Trust") and enclose the statement capturing the current position of tax benefits available to the Trust and to its Unit holders as per the provisions of the Income-tax Act,1961 ('the Act') presently in force in India (i.e. applicable for the financial year ending 31 March 2021 relevant to the assessment year 2021-22) for inclusion in the draft offer document, offer document and final offer document. Several of these benefits are dependent on the Trust or its unit holders fulfilling the conditions prescribed under the relevant provisions of the Act. Hence, the ability of the Trust or its unit holders to derive the tax benefits is dependent upon fulfilling such conditions, which based on the business imperatives, the Trust or its unit holders may or may not choose to fulfil.

The enclosed annexure discusses key tax benefits including potential benefits and are neither exhaustive nor conclusive. This statement is only intended to provide general information to the investors and is neither designed nor intended to be a substitute for a professional tax advice on tax matters. In view of the individual nature of the tax consequences and the changing tax laws, each investoris advised to consult his or her own tax consultant with respect to the specific tax implications arising out of their participation in the proposed issue of units of the Trust.

The contents of this enclosed statement are based on information, explanations and representations obtained from the Trust and on the basis of our understanding of the business activities and operations of the Trust and the provisions of the tax laws.

We do not express an opinion or provide any assurance as to whether:

- SHREM InvIT or its unit holders will continue to obtainthese benefits in future;
- the conditions prescribed for availing the benefits, where applicable have been/would be met with; and
- the revenue authorities/courts will concur with the views expressed herein.

We hereby give our consent to include the enclosed statement, regarding possible tax benefits available to the Trust and to its Unit holders under the Act. in the draft offer document, offer document and final offer document in connection with the initial private placement offering of the units of the Trust which is intended to be filed with Securities and Exchange Board of India, relevant stock exchange(s) and any regulatory authority, as may be required under applicable law.

For Mukund M. Chitale & Company
Chartered Accountants
ICAI Firm Registration Number: 106655W

(K. H. Kanade)

Partner
Membership No: 106952
UDIN: 21106952AAAACA7552

Place: Mumbai
Date: February 24, 2021

ANNEXURE TO STATEMENT OF POSSIBLE TAX BENEFITS AVAILABLE TO SHREM InvIT AND ITS UNITHOLDERSUNDER THE APPLICABLE LAWS IN INDIA

[The information provided below sets out the possible tax benefits available to the unit holders in a summary manner only and is not a complete analysis or listing of all potential taxconseq uences of purchase, ownership and disposal of equity shares or units, under the tax laws presently in force in India. It is not exhaustive or comprehensive analysis and is not intended to be a substitute for professional tax advice.

UNITHOLDERS SHOULD CONSULT THEIR OWN TAX ADVISORS CONCERNING THE INDIAN TAX IMPLICATIONS AND CONSEQUENCES OF PURCHASING, OWNING AND DISPOSING OF UNITS, INCLUDING TAX IMPLICATIONS ON ANY DISTRIBUTIONS BY/ RECEIPTS FROM SHREM InvIT, IN THEIR PARTICULAR SITUATION.]

The following is based on the provisions of the Income-tax Act, 1961 ('the Act') as amended by Finance Act, 2020. The Act is amended from time to time.

I. UNDER THE INCOME-TAX ACT, 1961 (hereinafter referred to as 'the Act')

1. TAX BENEFITS AVAILABLE TO SHREM InvIT UNDER THE ACT

The following benefits are available to SHREM InvIT ('the Trust') after fulfilling conditions as per the applicable provisions of the Act and the guidelines prescribed by the Securities and Exchange Board of India ('SEBI') including the Securities and Exchange Board of India (Infrastructure Investment Trusts)Regulations, 2014, as amended ('SEBI Regulations').

1.1 Tax benefits in the hands of the Trust in respect of interest income received/ receivable from the underlying Special Purpose Vehicles ('SPVs'):

Interest received or receivable by the Trust from the Project SPVs (being domestic companies) shall be exempt from tax, subject to satisfaction of conditions given in section 10(23FC) of the Act.

In this regard, please note that as per the explanation to section 10(23FC) of the Act, the expression "special purpose vehicle" means an Indian company in which the business trust holds controlling interest and any specific percentage of shareholding or interest, as may be required by the regulations under which such trust is granted registration.

Please note that in view of the provisions of section 14A of the Act, any expenditure incurred in relation to earning the above exempt income shall not be tax deductible. In case the Tax Authorities are not satisfied by the disallowance considered by the Trust , the quantum of disallowance shall be computed in accordance with the provisions of section 14A read with Rule 8D of the Income-tax Rules, 1962 ('the Rules').

In addition, section 194A(3)(xi) exempts SPV from provisions of tax deduction at source ('TDS') in respect of interest paid or payable to the Trust, provided such interest is in relation to interest other than 'interest on securities'

As per the provisions of section 193 of the Act, every Indian company shall withhold taxes at rates in force while making payment of any interest on unlisted securities. Accordingly, SPVs will be required to withhold taxes where interest is paid or payable on unlisted securities. Please note that the procedural provisions regarding exemption from TDS in relation to such interest paid or payable by SPV to business trust are absent. Accordingly, where SPVs withhold taxes on interest on securities paid or payable to the Trust, the Trust shall be eligible to claim a refund for the same.

1.2 Tax benefit in the hands of the Trust in respect of dividend income received/ receivable from the SPVs:

Dividend received or receivable by the Trust from the Project SPVs shall be exempt from tax, subject to satisfaction of conditions given in section 10(23FC) of the Act.

Please note that in view of the provisions of section 14A of the Act, any expenditure incurred in relation to earning the above exempt income shall not be tax deductible. In case the Tax Authorities are not satisfied by the disallowance considered by the Trust, the quantum of disallowance shall be computed in accordance with the provisions of section 14A read with Rule 8D of the Rules.

As per the provisions of section 194 of the Act, every Indian company shall withhold taxes at the rate of 10% while making payment of any dividend to its shareholders. Accordingly, where SPV distributes dividend income to its shareholders (i.e. the Trust), taxes @ 10% shall be withheld by the SPVs.

Finance Act ,2021 has proposed amendment in section 194 of the Act , whereby the SPVs will not be required to deduct tax at source when they make payment of dividend to Trust.

1.3 Section 10(34A) of the Act - Income from buy back of shares

The provisions of section 115QA mandate domestic companies (SPV) to pay an additional tax at the rate of 20% (plus applicable surcharge and cess) on buy-back of shares. Further, income arising from buy-back of unlisted shares shall not be taxable as per section 10(34A) of the Act in the hands of the shareholders. Accordingly, in case income arises in hands of the Trust from buy-back of unlisted shares by the Project SPVs (held in the underlying SPVs), then such income shall be exempt in the hands of the Trust.

Please note that in view of the provisions of section 14A of the Act, any expenditure incurred in relation to earning the above exempt income shall not be tax deductible. In case the Tax Authorities are not satisfied by the disallowance considered by the Trust , the quantum of disallowance shall be computed in accordance with the provisions of section 14A read with Rule 8D of the Rules.

1.4 Section 115UA (2) read with section 112 of the Act - Taxability of capital gains

In terms of section 115UA(2) of the Act, the total income of the Trust shall be chargeable to tax at the maximum marginal rate (MMR) in force except for the income chargeable to tax on transfer of Long Terms Capital assets under section 112 of the Act, short term capital gain u/s 111A of the Act and income referred in para 1.1 and 1.2 above. MMR is defined under the provisions of the Act to mean the rate of income-tax (including surcharge on income-tax, if any) applicable in relation to the highest slab of income as per the relevant Finance Act.

With respect to shares of a company not being listed on a recognized stock exchange, the determinative period of holding shall be more than 24 months for it to be regarded as long term capital asset. With respect to other securities, the determinative period of holding is more than 36 months for it to be regarded as long term capital asset.

As per the provisions of section 112(1)(d) of the Act, gains arising on the transfer of long term capital assets shall be chargeable to tax in the hands of the Trust at the rate of 20% (plus applicable surcharge and cess).

Section 48 of the Act prescribes the mode of computation of Capital Gains and provides for deduction of cost of acquisition/ improvement and expenses incurred in connection with the transfer of a capital asset, from the sale consideration to arrive at the amount of Capital Gains. However, in respect of long term capital gains, section 48 provides for substitution of cost of acquisition/ improvement with indexed cost of acquisition/ improvement, which adjusts the cost of acquisition/ improvement by a cost inflation index as prescribed from time to time. Such indexation benefit would not be available on bonds and debentures, taxable under section 112 of the Act.

As per section 70 read with section 74 of the Act, short term capital loss arising during a year is allowed to be set-off against short term capital gains as well as long term capital gains. Balance loss, if any, shall be carried forward and set-off against any capital gains arising during subsequent eight assessment years. Also, as per section 70 and 74 of the Act, long term capital loss arising during a year is allowed to be set-off only against long term capital gains. Balance loss, if any, shall be carried forward and set-off against long term capital gains arising during subsequent eight assessment years.

Further, as per Section 71 of the Act, short term/ long term capital loss for the year cannot be set-off against income under any other head for the same year.

2. TAX BENEFITS AVAILABLE TO UNIT-HOLDERS OF SHREM INVIT

2.1 Tax Benefits available to the Unit-Holders of the Trust

Following tax benefit is specifically available to the unit holders of the Trust subject tothe fulfillment of the conditions specified in the Act and SEBI Regulations:

Section 10(23FD) of the Act - Tax exemption in respect of income distributed by the Trust:

As per the provisions of section 115UA(1) of the Act, the income distributed by the Trust shall be deemed to be of the same nature and in the same proportion in the hands of the Unit holders as if such income was received by or accrued to the Trust.

As per the provisions of section 10(23FD) of the Act, any income referred to in section 115UA of the Act and distributed by the Trust [except for that proportion of income referred in sub-clause (a) of clause (23FC) or sub-clause (b) of said clause (in a case where the SPV has exercised the option under section 115BAA)] shall not be included in the total income of the unit holders.

Please note that in view of the provisions of section 14A of the Act, any expenditure incurred in relation to earning the above exempt income shall not be tax deductible. In case the Tax Authorities are not satisfied by the disallowance considered by the Trust , the quantum of disallowance shall be computed in accordance with the provisions of section 14A read with Rule 8D of the Rules.

Transaction not regarded as transfer under section 47(xvii) of the Act
(Please note that the below implications are only relevant for the Sponsor Company)

According to sec. 47(xvii), any transfer of a capital asset, being share of a special purpose vehicle to a business trust in exchange of units allotted by that trust to the transferor shall not be regarded as transfer and accordingly not be liable to capital gains tax.

According to sec. 49(2AC) the cost of units acquired in lieu of shares in SPV shall be deemed to be cost of acquisition of shares in SPV.

As per clause (hc) of explanation 1 of sec. 2(42A), for ascertaining the period of holding of such units, the period of holding of shares in SPV shall also be included.

Please note that any notional gain or loss arising on transfer of shares of SPV to business trust in exchange of units allotted by the trust (as referred u/s 47(xvii) are to be excluded while calculating book profits for the purpose of Minimum Alternate Tax ('MAT') u/s 115JB. Similarly, any notional gain or loss arising upon change in carrying amount of the units held by Unit holder are to be excluded in calculating book profits for the levy of MAT u/s 115JB. *(Clause (iie)/ (fc) to explanation 1 to section 115JB)*

Further, actual gain or loss on disposal of units held by the Unit holder as referred to in section 47 (xvii) are considered for the purpose of MAT u/s 115JB. *(Clause (iif)/ (k) to explanation 1 to section 115JB)*

However, if the Unit holder opts for concessional tax regime u/s 115BAA/ 115BAB then provisions of MAT u/s 115JB shall not be applicable for the Unit holder and it will have to forego its entire MAT credit available at the time of exercising concessional tax-regime.

2.2 General Benefits available to the all the Unit-Holder of the Trust:

2.2.1 For resident and non-resident Unit-holder:

Long-term capital gains:

Income arising on transfer of units of the Trust through a recognized stock exchange, on which STT is paid, shall be chargeable to tax in the hands of the Unit holders at a rate of 10% without indexation benefit (plus applicable surcharge and cess) where the amount of income-tax calculated on such long-term capital gains exceeding one lakh rupees under section 112A of the Act if the said units are long-term capital assets. The determinative period of holding for such units to qualify as long term capital asset is more than 36 months.

Income arising on transfer of units of the Trust that are long term capital assets, which is not through a recognized stock exchange and not subject to STT, shall be chargeable to tax at 20%, with indexation benefit (plus applicable surcharge and cess) under section 112 of the Act.

In case of a Unit-holder being a resident individual or HUF, where the total taxable income as reduced by long-term capital gains taxable is below the basic exemption limit, such long-term capital gains will be reduced to the extent of the shortfall and only the balance long-term capital gains will be subjected to such tax in accordance with the proviso to sub-section (1) of section 112 and proviso to sub-section (2) of section 112A of the Act.

Short-term capital gain:

Short-term capital gains arising on transfer of the units of the Trust will be chargeable to tax at the rate of 15% (plus applicable surcharge and cess) as per the provisions of section 111A of the Act, provided such transaction is subject to STT and through a recognized stock exchange.

In case of a Unit-holder being a resident individual or HUF, where the total taxable income as reduced by short-term capital gains is below the basic exemption limit, the short-term capital gains will be reduced to the extent of the shortfall and only the balance short-term capital gains will be subjected to such tax in accordance with the proviso to sub-section (1) of section 111A of the Act.

Short-term capital gains arising on transfer of units of the Trust, which is not through a recognized stock exchange and which is not subject to STT, shall be chargeable to tax on applicable tax rates prescribed under the Act.

Set-off of losses:

Short Term Capital Loss computed for the given year is allowed to be set-off against Short Term/ Long Term Capital Gains computed for the said year under section 70 and 74 of the Act. Balance loss, if any, shall be carried forward and set-off against any capital gains arising during subsequent eight assessment years. Also, as per section 70 and 74 of the Act, long term capital loss arising during a year is allowed to be set-off only against long term capital gains. Balance loss, if any, shall be carried forward and set-off against long term capital gains arising during subsequent eight assessment years.

Further, as per Section 71 of the Act, short term/ long term capital loss for the year cannot be set-off against income under any other head for the same year.

Applicability of Minimum Alternate Tax/ Alternate Minimum Tax:

Where Unit holder is a 'domestic company':
In case of domestic companies that are liable to pay MAT under provisions of Section 115JB of the Act, the gains arising, if any, on sale of units of InvIT are to be included as part of book profits for the purpose of computing MAT liability. MAT paid by such companies should be available as credit for set-off against future tax liability, provided such companies do not opt to be governed by the concessional tax rates u/s 115BAA or 115BAB of the Act.

Where Unit holder is a person 'other than company': In case of unit holders, other than companies, that are liable to Alternate Minimum Tax (AMT) under provisions of Section 115JC of the Act, the gains arising, if any, on sale of units of InvIT are to be included as part of adjusted total income for the purpose of computing AMT liability. AMT paid by such unit holders should be available as credit for set-off against future taxliability, provided they do not opt to be governed by the concessional tax rates u/s 115BAC or 115BAD of the Act.

2.2.2 For unit-holders who are Foreign Portfolio Investors ('FPIs')/ Foreign Institutional Investors ('FIIs'):

In case of Foreign Institutional Investor or Foreign Portfolio Investor registered under SEBI (Foreign Portfolio Investors) Regulations 2014 ('FII/FPI'), as per section 2(14) of the Act, shares/ securities (other than those held as stock in trade) which were invested in accordance with the regulations made under the Securities and Exchange Board of India Act, 1992 shall be deemed to be capital assets. Accordingly, any income from such transfer shall be deemed as a capital gain.

Long-term capital gains:

Income arising on transfer of units of the Trust through a recognized stock exchange, on which STT is paid, shall be chargeable to tax in the hands of the Unit holders at a rate of 10% without indexation benefit (plus applicable surcharge and cess) where the amount of income-tax calculated on such long-term capital gains exceeding 0.1 million rupees under section 112A of the Act, if the said units are long-term capital assets. The determinative period of holding for such units to qualify as long term capital asset is more than 36 months.

Income arising on transfer of units of the Trust that are long term capital assets, which is not through a recognized stock exchange and not subject to STT, shall be chargeable

to tax at 10%, without indexation benefit (plus applicable surcharge and cess) in accordance with section 115AD of the Act. However, the same shall hold true only when units of the Trust qualify as 'securities' under Securities Contracts Regulations Act, 1956 ('SCRA').

Accordingly, where a view is taken that the same does not qualify as 'securities' under SCRA, the applicable tax rate will be 20% with indexation benefit (plus applicable surcharge and cess) under section 112 of the Act.

Short-term capital gain:

Short-term capital gains arising on transfer of the units of the Trust will be chargeable to tax at the rate of 15% (plus applicable surcharge and cess) as per the provisions of section 111A of the Act provided such transaction is subject to STT and through a recognized stock exchange.

Short-term capital gains arising on transfer of units of the Trust, which is not through a recognized stock exchange and which is not subject to STT, shall be chargeable to tax @30% (plus applicable surcharge and cess) in accordance with section 115AD of the Act. However, the same shall hold true only when units of the Trust qualify as 'securities' under SCRA.

Accordingly, where a view is taken that the units of the Trust does not qualify as 'securities' under SCRA, then applicable tax rates (plus applicable surcharge and cess) shall apply.

Set-off of losses:

Short Term Capital Loss computed for the given year is allowed to be set-off against Short Term/ Long Term Capital Gains computed for the said year under section 70 and 74 of the Act. Balance loss, if any, shall be carried forward and set-off against any capital gains arising during subsequent eight assessment years. Also, as per section 70 and 74 of the Act, long term capital loss arising during a year is allowed to be set-off only against long term capital gains. Balance loss, if any, shall be carried forward and set-off against long term capital gains arising during subsequent eight assessment years.

Further, as per Section 71 of the Act, short term/ long term capital loss for the year cannot be set-off against income under any other heads for the same year.

Applicability of Minimum Alternate Tax:

As per the Explanation 4 to section 115JB, provisions of Minimum Alternate Tax shall not be applicable to any foreign company if –

(i) Such foreign company is a resident of country with which India has a DTAA and such foreign company does not have a permanent establishment in India; or

(ii) Such foreign company is a resident of country with which India does not have a DTAA and such foreign company is not required to seek registration under any law for the time being in force relating to companies.

Accordingly, provisions of MAT shall not apply to FPIs/ FIIs in case the above conditions hold true.

Benefits under Double Taxation Avoidance Agreement (DTAA):

Under the provisions of section 90(2) of the Act, a non-resident will be governed by the provisions of the DTAA between India and the country of tax residence of the non-resident and the provisions of the Act apply to the extent they are more beneficial to the assessee.

As per section 196D(2)[1] of the Act, no tax is to be deducted from any income, by way of capital gains arising to an FPI/ FII from the transfer of units by such FPI/ FII where such units qualify as securities under SCRA. In respect of non-residents, the tax rates and consequent taxation mentioned above will be further subject to any benefits available under the DTAA, if any, between India and the country in which the FPI/ FII has Fiscal domicile. As per the provisions of section 90(2) of the Act, the provisions of the Act would prevail over the provisions of the DTAA to the extent they are more beneficial to the FPI/ FII.

For withholding tax provisions in case FPI/ FII, please refer Section II – 'Tax Deduction at Source' below.

2.2.3 For unit-holders who are Mutual Funds:

Under section 10(23D) of the Act, any income earned by a Mutual Fund registered under the Securities and Exchange Board of India Act, 1992, or a Mutual Fund set up by a public sector bank or a public financial institution, or a Mutual Fund authorised by the Reserve Bank of India would be exempt from income-tax, subject to such conditions as the Central Government may by notification in the Official Gazette specify in this behalf.

In light with the provisions of section 196 of the Act, no deduction of tax shall be made on any sum payable to a Mutual Fund specified under clause (23D) of section 10. Accordingly, the Trust is not required to withhold tax on any sum payable to Mutual Fund set up under section 10(23D) of the Act.

2.2.4 For unit-holders who are Venture Capital Funds (VCF) or Venture Capital Companies (VCC) [2]:

For VCF/VCC registered prior to 21 May 2012

Under Section 10(23FB) of the Act, any income of Venture Capital Company to whom the certificate of registration is granted before 21/05/2012 under SEBI (Venture Capital Funds) Regulations, 1996 or as a sub-category I Alternative Investment Fund as is regulated under SEBI (Alternative Investment Funds Regulations) under the SEBI Act, 1992, from investment in venture capital undertaking would be exempt from income tax, subject to conditions specified therein.

As per Section 115U of the Act, any income derived by a person from his investment in Venture Capital Company/ Venture Capital Fund would be taxable in the hands of the person making an investment in the same manner as if it were the income accruing or arising to or received by such person had the investments been made directly in the venture capital undertaking.

For VCF/VCC registered post 21 May 2012

VCF/VCC registered post 21 May 2012 shall be classified as a Category 1 Alternate Investment Fund which shall be governed by the SEBI (AIF) Regulations 2012. For such funds benefit of section 10(23FB) and section 115U shall not be applicable and shall be governed by section 115UB read with section 10(23FBA) and 10(23FBB)

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[1] *Please note that the provisions of Section 196D of the Act shall apply only when units of the Trust qualify as 'securities' under SCRA.*

[2] *Please note that the information provided herewith sets out the possible tax benefits available to the unit holders,*
who are VCC or VCF, in a summary manner. This is not an exhaustive or comprehensive analysis and is not intended to be a substitute for professional tax advice.

which states that business income earned by such fund shall be taxable in the hands of the Fund and exempt in the hands of the unit holders, and other income earned viz. capital gains, income from other sources shall be exempt in the hands of the fund and taxable in the hands of unit holder.

For withholding tax provisions in the given case, please refer Section II – 'Tax Deduction at Source' below

2.2.5 Section 10(23FE): Income of a specified person in the nature of dividend, interest or long-term capital gains arising from an investment made by it in India.

As per section 10(23FE) of the Act, dividend, interest and long-term capital gains arising from investments made by 'specified person' in India, whether in the form of debt or share capital or unit, shall be exempt, if such investment is:

(i) made on or after the 01 April 2020 but on or before the 31 March 2024
(ii) is held for at least 3 years
(iii) inter alia, is in a business trust

Further, such specified person (subject to certain conditions prescribed in section 10(23FE)) shall include:

(i) Wholly owned subsidiary of Abu Dhabi Investment Authority (ADIA)
(ii) Sovereign Wealth Funds (SWF)
(iii) Pension funds

In this regard, please note that there are no amendments in the withholding tax provisions under the Act providing for exemption from withholding taxes on above mentioned income accruing to specified persons.

II. TAX DEDUCTION AT SOURCE[3]

Section 194LBA – Deduction of tax on certain income from the Trust

Where any interest income referred in section 115UA of the Act, in the nature referred to in section 10(23FC)(a) is distributed by the Trust to its unit holder, the Trust shall deduct TDS at 10% - in case of a resident unit holder, and 5% (plus applicable surchargeand cess) - in case of a non-resident unit holder. The same shall be deducted at the time of credit of such payment to the account of the payee or at the time of payment thereof, whichever is earlier.

However, TDS at the rate of 10% shall be deducted on dividend income distributed by the Trust to its resident unit holders and 10% (plus applicable surcharge and cess) shall be deducted on dividend income distributed by the Trust to its non-resident unit holders, if the SPV has exercised the option of beneficial tax regime under section 115BAA of the Act. If the SPV has not exercised the option of Section 115BAA of the Act, then no TDS is deducted on the distribution of dividend by the Trust.

Additionally, in view of section 90(2) of the Act, a non-resident will be governed by the provisions of the DTAA between India and the country of tax residence of the non-resident and the provisions of the Act apply to the extent they are more beneficial to the assessee.

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[3] *Please note that the TDS rates mentioned in the given document may be subject to any concessions introduced/allowed by the Government under any policy, press release, etc. Also, the same may also be subject to lower/ nil withholding tax certificates which may be furnished by the unit holders*

Applicability of other provisions:

No income tax is deductible at source from income by way of capital gains arising to a resident unit holder under the present provisions of the Act.

However, as per the provisions of Section 195 of the Act, any income on transfer of units of the Trust by non-residents may be subject to withholding of tax at the rate underthe domestic tax laws or under the DTAA, whichever is beneficial to the assessee (otherthan FPIs/ FIIs which are subject to provisions of section 196D (2) of the Act). However, the non-resident investor will have to furnish a certificate of his being a tax resident in a country outside India and a suitable declaration for not having a fixed base/permanent establishment in India, to get the benefit of the applicable DTAA and such other document as may be prescribed as per the provision of section 90(4) of Act.

Further, as per section 196D[4] of the Act, no tax is to be deducted from any income, by way of capital gains arising to an FPI or FII from the transfer of units where such units qualify as securities under SCRA.

Section 206AA of the Act – Where PAN details are not furnished by the unit holder

As per Section 206AA of the Act, where a taxpayer does not possess a Permanent Account Number ('PAN'), taxes have to be withheld on payment of income to the taxpayer (where chargeable to tax) at higher of the following:

- at the rate specified in the Act; or
- at the rate or rates in force; or
- at the rate of 20%

Pursuant to amendment in section 206AA in 2016 and introduction of Rule 37B, the requirement of quoting PAN at the time of withholding of tax on certain specified income is eliminated. Further, the CBDT issued a notification prescribing the rules for relaxation from withholding of tax at higher rates in the absence of PAN in the case of non-resident deductee and laid down the information and alternative documents required to claim such relaxation.

General tax rates and provisions:

1. The income-tax rates specified in this note are as applicable for the financial year 2020-21, and are exclusive of surcharge and education cess, if any. Rate of surcharge and cessare provided below:

   Surcharge:

   Domestic companies:
   (i) If the total income does not exceed INR 10 million – Nil
   (ii) If the total income exceeds INR 10 million but does not exceed INR 100 million - 7%
   (iii) If the total income exceeds INR 100 million - 12 %

   Foreign companies:

   (i) If the total income does not exceed INR 10 million - Nil
   (ii) If the total income exceeds INR 10 million but does not exceed INR 100 million - 2%
   (iii) If the total income exceeds INR 100 million – 5%

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[4] Please note that the provisions of Section 196D of the Act shall apply only when units of the Trust qualify as'securities' under SCRA.

For individuals, HUF, AOP and BOI:

(i) If the total income does not exceed INR 5 million - Nil
(ii) If the total income (including dividend income or capital gains on specified securities)
exceeds INR 5 million but does not exceed INR 10 million – 10%
(iii) If the total income (including dividend income or capital gains on specified securities)
exceeds INR 10 million but does not exceed INR 20 million – 15%
(iv) If the total income (excluding dividend income or capital gains on specifiedsecurities) exceeds INR 20 million but does not exceed INR 50 million – 25%
(v) If the total income (excluding dividend income or capital gains on specifiedsecurities) exceeds INR 50 million – 37%
(vi) If total income is above 20 million (including dividend income or capital gainson specified securities) but is not covered under (iv) and (v) above – 15%

However, please note that the applicable surcharge does not exceed 15% in case of dividend income or capital gains on specified securities included in such total income

The above surcharge is subject to marginal tax benefit as per the

income Tax Act, 1961.Health and Education cess:

In all cases, Health and education cess will be levied at the rate of 4 per cent of income- tax and surcharge.

Notes:

1. The stated benefits will be available only to the sole/ first named holder in case the unitsare held by joint holders.

2. In respect of non-residents, the tax rates and the consequent taxation mentioned above shall be further subject to any benefits available under the applicable DTAA, if any, between India and the country in which the non-resident has fiscal domicile.

3. This statement is intended only to provide general information to the investors and is neither designed nor intended to be substituted for professional tax advice. In view of the individual nature of tax consequences, each investor is advised to consult his/her own tax advisor with respect to specific tax consequences of his/her participation in the scheme.

4. No assurance is given that the revenue authorities/courts will concur with the views expressed herein. Our views are based on the existing provisions of law and its interpretation, which are subject to changes from time to time. We do not assume responsibility to update the views consequent to such changes. We shall not be liable to any claims, liabilities or expenses relating to this assignment except to the extent of feesrelating to this assignment, as finally judicially determined to have resulted primarily from bad faith or intentional misconduct. We will not be liable to any other person in respect of this statement.

5. This statement of possible direct tax benefits enumerated above is as per the Act as amended by the Finance Act, 2020 The above statement of possible Direct-tax Benefits sets out the possible tax benefits

available to the Trust and its unit holders under the current tax laws presently in force in India. Several of these benefits available are dependent on the Trust or its unit holders fulfilling the conditions prescribed under the relevant tax laws.

6. Section 294 of the Income Tax Act, 1961 specify that, If on the 1st day of April in any assessment year provision has not yet been made by a Central Act for the charging of income-tax for that assessment year, this Act shall nevertheless have effect until such provision is so made as if the provision in force in the preceding assessment year or the provision proposed in the Bill then before Parliament, whichever is more favourable to the assessee, were actually in force.

7. The information provided above sets out the possible tax benefits available to the unit holders (including unit-holders who are VCF or VCC) in a summary manner only and isnot a complete analysis or listing of all potential tax consequences of the purchase, ownership and disposal of equity shares and units, under the current tax laws presently in force in India. It is not exhaustive or comprehensive and is not intended to be a substitute for professional advice. Investors are advised to consult their own tax consultant with respect to the tax implications arising on account of any investment in equity shares or units (including tax implications on account of any distributions by/ receipts from the Trust), particularly in view of the fact that certain recently enacted legislation may not have a direct legal precedent or may have a different interpretation impacting the benefits, which an investor can avail.

For Mukund M Chitale & Co.

Chartered Accountants
FRN: 106655W

For and on behalf of Board of Directors of
Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(K H Kanade)
Partner
M No : 106952

Date: February 24, 2021
Place: Mumbai

Nitan Chhatwal
Director
DIN: 115575

Date: February 24, 2021
Place: Mumbai

Nikhil Pareek
Director
DIN: 07083015

Date: February 24, 2021
Place: Mumbai

LEGAL MATTERS

Each of Cyril Amarchand Mangaldas, Link Legal Indian Law Services and Squire Patton Boggs (MEA) LLP, do not make, or purport to make, any statement in this Draft Placement Memorandum and is not aware of any statement in this Draft Placement Memorandum which purports to be based on a statement made by each of them, and it makes no representation, express or implied, regarding, and to the extent permitted by law takes no responsibility for, any statement in or omission from this Draft Placement Memorandum.

INDEPENDENT ACCOUNTANTS

The Audited Special Purpose Combined Financial Statements have been prepared in accordance with the requirements of the InvIT Regulations, the accounting principles generally accepted in India, including Ind AS. The Audited Special Purpose Combined Financial Statements included in this Draft Placement Memorandum have been audited by Mukund M. Chitale & Co., Chartered Accountants, the statutory auditors of the Trust, as stated in their audit report dated February 22, 2021 included in this Draft Placement Memorandum.

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Independent Auditor's Report On Special Purpose Combined Financial Statements Of Proposed Holding Companies and Project SPV's of the SHREM INVIT in connection with Proposed Private Placement of the units

To,

Axis Trustee Services Limited *(as the Trustee of the Trust)*
The Ruby, 2nd Floor,
SW, 29, Senapati Bapat Marg,
Dadar West, Mumbai 400 028

Shrem Financial Private Limited *(as the Investment Manager of the Trust)*
1101, Viraj Towers,
Junction off Andheri Kurla Road,
W.E. Highway near Land Mark Building,
Andheri (E), Mumbai 400 069

Report on the audit of Special purpose Combined Financial Statement

Opinion

We have audited the accompanying special purpose combined financial statements consisting of the following 3 Holding companies and 24 Project Special Purpose Vehicle ('SPVs') namely

Holding Companies:

1. Shrem Roadways Private Limited;
2. Shrem Infraventure Private Limited;
3. Shrem Tollway Private Limited;

Project SPVs:

1. Suryavanshi Infrastructure Private Limited
2. DBL Nadiad Modasa Tollways Limited
3. DBL Jaora-Sailana Tollways Limited
4. DBL Bankhlafata - Dogawa Tollways Limited
5. DBL Ashoknagar Vidisha Tollways Ltd
6. DBL Silwani-Sultanganj Tollways Limited
7. DBL Sitamau-Suwasara Tollways Limited
8. DBL Hata-Dargawon Tollways Limited
9. DBL Patan Rehli Tollways Limited
10. DBL Mundi-Sanawad Tollways Limited
11. DBL Uchera – Nagod Tollways Limited
12. DBL Betul-Sarni Tollways Limited
13. DBL Tikamgarh-Nowgaon Tollways Limited
14. DBL Sardarpur Badnawar Tollways Limited
15. DBL Mundargi Harapanahalli Tollways Limited
16. DBL Hassan Periyapatna Tollways Limited
17. DBL Hirekerur Ranibennur Tollways Limited
18. DBL Lucknow Sultanpur Highways Limited
19. DBL Tuljapur Ausa Highways Limited
20. DBL Mahagaon Yavatmal Highways Private Limited

21. DBL Yavatmal Wardha Highways Private Limited
22. DBL Kalmath Zarap Highways Limited
23. DBL Wardha Butibori Highways Private Limited
24. Jalpa Devi Tollways Limited

of **Shrem INVIT** (referred to as the Holding Companies and Project SPVs) which are transferred or are proposed to be transferred to Shrem INVIT pursuant to the proposed placement of units of the Trust (Private Placement) and which comprise

a. the combined Balance Sheet as at December 31, 2020, March 31, 2020, March 31, 2019, and March 31, 2018
b. the combined statement of Profit and Loss (including other comprehensive income), Combined Statements of Cash Flows and Combined Statements of Changes in Equity for the nine months ended December 31, 2020, and for the year ended March 31, 2020, March 31, 2019, and March 31, 2018
c. a summary of significant accounting policies and other explanatory information
d. the combined statement of net assets at fair value as at December 31, 2020; and
e. the combined statement of total returns at fair value for the nine months ended December 31, 2020
(together referred to as "Special Purpose Combined Financial Statements").

In our opinion and to the best of our information and according to the explanations given to us, the aforesaid Special Purpose combined financial statements including a summary of significant accounting policies and other explanatory information give a true and fair view in accordance with the basis of preparation as specified in Note 2.1 to the Special Purpose combined Financial Statements, in case of

a. the Combined balance sheet of the state of affairs of the Holding Companies and Project SPVs as at December 31, 2020, March 31, 2020, March 31, 2019 and March 31, 2018,
b. the Combined statement of profit and loss (including other comprehensive income), combined cash flows statement of the cash movements and combined statement of changes in equity of the Holding Companies and Project SPVs for the nine months ended December 31, 2020, and for the year ended March 31, 2020, March 31, 2019, and March 31, 2018,
c. the combined statement of net assets at fair value as at December 31, 2020; and
d. the combined statement of total returns at fair value for the nine months ended December 31, 2020

in accordance with the basis of preparation as set out in note 2.1 to the Combined Financial Statements.

Basis of Accounting and Restriction on Distribution and Use

Without modifying our opinion, we draw attention to note 2.1 to the Special Purpose Combined Financial Statements, which describes the basis of accounting including the approach to and purpose of preparation of these Special Purpose Combined Financial Statements.

These Combined Financial Statements have been prepared in accordance with the requirements of Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended from time to time including guidelines and circulars issued thereunder, including the circular dated October 20, 2016 on disclosure of financial information in placement memorandum for InVITs (together referred to as 'InvIT Regulations'), based on the Indian Accounting Standards as notified under the Companies (Indian Accounting Standards) Rules, 2015 prescribed under section 133 of the Companies Act, 2013 ('the Act'),

as applicable ("Ind AS") and the Guidance Note on Combined and Carve Out Financial Statements issued by the Institute of Chartered Accountants of India (the 'Guidance Note') as more clearly specified in Note 2.1 'Basis of preparation' of the Special Purpose Combined Financial Statements.

Accordingly, these Special Purpose Combined Financial Statements have been prepared, as if the Trust structure was in place and 100% interest of the Project SPVs was part of the Trust since April 1, 2017 and have been approved by the Investment Manager of the Trust.

Consequently, these special purpose combined financial statements may not necessarily be indicative of financial performance, financial position and cash flows of the Holding companies and Project SPVs that would have occurred if it had operated as a single group of entities during the periods presented.

This report is addressed to and is provided to the Trustee and the Investment Manager solely for the inclusion in the draft placement memorandum, in connection with the proposed Private Placement and may not be suitable for another purpose. Our report should not be used, referred to or distributed for any other purpose or to any other party without our prior written consent other than to the Financial Investors in connection with the private placement. Accordingly, we do not accept or assume any liability or any duty of care for any other purpose or to any other person to whom this report is shown or into whose hands it may come without our prior consent in writing.

Responsibility of the Management and Those Charged with Governance for the Special Purpose Combined Financial Statements

The Investment Manager of the Trust is responsible for the preparation of these special purpose combined financial statements that give a true and fair view of the combined financial position, combined financial performance (including other comprehensive income), combined cash flows, combined statement of change in equity in accordance with the basis of preparation specified in Note 2.1 to the special purpose combined financial statements.

The respective Board of Directors of the Holding Companies and Project SPVs are responsible for the maintenance of adequate accounting records in accordance with the provisions of the Act; for safeguarding the assets of the Holding Companies and Project SPVs and for preventing and detecting frauds and other irregularities; the selection and application of appropriate accounting policies; making judgements and estimates that are reasonable and prudent; and the design, implementation and maintenance of adequate internal financial controls, that were operating effectively for ensuring the accuracy and completeness of the accounting records, relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error, which have been used for the purpose of preparation of these special purpose combined financial statements by the Investment Manager, as aforesaid.

Auditor's Responsibility

Our objectives are to obtain reasonable assurance about whether the Special purpose combined financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Standards on Auditing, we exercise professional judgment and maintain professional skepticism throughout the audit. An audit involves performing procedures to obtain audit evidence about the amounts and the disclosures in the special purpose combined financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the Special Purpose Combined Financial Statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal financial controls relevant to the Holding companies and Project SPVs preparation of the Special Purpose Combined Financial Statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances but not for the purpose of expressing an opinion whether the Trust Group have in place an adequate internal financial controls system over financial reporting and the operating effectiveness of such controls. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of the accounting estimates made by the Investment Manager, as well as evaluating the overall presentation of the financial statements. We communicate with those charged with governance of the Investment Manager of the Trust regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Other Matter

The financial statements of 3 Holding Companies and 24 Project SPV for the relevant periods have been prepared as per Ind AS have been audited by the respective auditors of Group Trust and have been used for the purpose of preparation of the special purpose combined financial statements by the Investment Manager of the Trust and have been relied upon by us for our audit of these special purpose combined financial statements.

The Holding Companies and Project SPVs and the periods which were audited by other auditors are as follows:

Holding Companies

Sr. no.	Name of the Company	Period
1	Shrem Roadways Private Limited	Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018
2	Shrem Infraventures Private Limited	Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018
3	Shrem Tollways Private Limited	Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018

Project SPVs

Sr.No.	Name of the Company	Period
1	Suryavanshi Infrastructure Private Limited	Year ended 31 March 2019 Year ended 31 March 2018
2	DBL Nadiad Modasa Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
3	DBL Jaora-Sailana Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
4	DBL Bankhlafata-Dogawa Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
5	DBL Ashoknagar-Vidisha Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
6	DBL Hata-Dargawon Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
7	DBL Patan-Rehli Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
8	DBL Mundi-Sanawad Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
9	DBL Uchera-Nagod Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
10	DBL Betul-Sarni Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
11	DBL Tikamgarh- Nowgaon Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
12	DBL Mundargi Harapanahalli Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
13	DBL Hssasn- Periyapatna Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
14	DBL Hirekerur Ranibennur Tollways Limited	Year ended 31 March 2019 Year ended 31 March 2018
15	DBL Luknow Sultanpur Highways Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018
16	DBL Tuljapur Ausa Highways Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019
17	DBL Mahagaon Yavatmal Highways Private Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019
18	DBL Yavatmal Wardha Highways Private Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019
19	DBL Kalmath Zarap Highways Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018

20	DBL Wardha Butibori Highways Private Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019
21	Jalpadevi Tollways Limited	Nine months ended 31 December 2020 Year ended 31 March 2020 Year ended 31 March 2019 Year ended 31 March 2018

Report on Other Legal and Regulatory Requirements

As required by circular number CIR/IMD/DF/114/2016 dated 20 October 2016 issued by Securities and Exchange Board of India; we report that:

a) we have obtained all information and explanations which, to the best of our knowledge and belief, were necessary for the purpose of our audit;

b) the combined balance sheet and the combined statement of profit and loss, are in agreement with the books of account of the respective Holding companies and Project SPVs; and

c) the special purpose combined financial statements comply with the Indian Accounting Standards as notified under the Companies (Indian Accounting Standards) Rules, 2015 prescribed under section 133 of the Act and the basis of preparation as specified in Note 2 to these special purpose combined financial statements.

For Mukund M Chitale & Co.
Chartered Accountants
Firm Registration Number 106655W

(S. M. Chitale)
M. No 111383

UDIN : 21111383AAAACR1841

Place: Mumbai
Date: February 22, 2021

SHREM INVIT
COMBINED BALANCE SHEET

(Rs.in Million)

SI	Particulars	Notes	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
	ASSETS					
(1)	**Non-current assets**					
(a)	Property, plant and equipment	3	5.61	6.05	4.98	5.87
(b)	Capital work in progress	4	-	2,747.52	20,966.25	8,468.27
(c)	Investment Property		-	-	-	-
(d)	Other Intangible assets	5	8,951.01	9,371.15	9,930.31	2,635.07
(e)	Intangible assets under development	6	-	-	-	7,743.63
(f)	Financial assets					
(i)	Investments		-	-	-	-
(ii)	Loans	7	0.05	0.05	-	-
(iii)	Trade receivables	8	33,885.67	31,269.14	14,628.59	15,431.86
(iv)	Others	9	1,170.12	1,057.50	-	-
(g)	Deferred tax assets (Net)		-	-	-	-
(h)	Other non-current asset	10	1.70	1.86	1.68	2,262.52
	Total non-current assets		**44,014.16**	**44,453.27**	**45,531.81**	**36,547.22**
(2)	**Current assets**					
(a)	Inventories					
(b)	Financial assets					
(i)	Investments	11	-	-	541.02	-
(ii)	Trade receivables	8	4,553.40	4,902.11	4,347.47	2,790.69
(iii)	Cash and cash equivalent	12	4,896.65	3,801.25	2,290.97	1,557.58
(iv)	Bank balance other than (iii) above			-	-	-
(v)	Loans	7	-	-	-	-
(vi)	Others	9	849.40	789.00	10.37	9.71
(c)	Current Tax Assets (Net)	13	1,026.65	517.05	180.86	54.25
(d)	Other current assets	10	3,600.83	3,874.74	5,799.87	4,112.53
	Total current assets		**14,926.93**	**13,884.15**	**13,170.56**	**8,524.76**
	TOTAL ASSETS		**58,941.09**	**58,337.42**	**58,702.37**	**45,071.98**
	EQUITY AND LIABILITIES					
	Equity					
(a)	Equity share capital	14	210.28	210.28	223.60	265.41
(b)	Other equity	15	1,193.39	(1,717.73)	(2,355.06)	351.32
	Total Equity		**1,403.67**	**(1,507.45)**	**(2,131.46)**	**616.73**
	Liabilities					
(1)	**Non-current liabilities**					
(a)	Financial liabilities					
(i)	Borrowings	16	37,454.05	41,135.12	40,055.31	26,405.55
(ii)	Trade payable	17				
	total outstanding dues of micro and small enterprises		-	-	-	-
	total outstanding dues of creditors other than micro and small enterprises		-	-	150.78	0.71
(iii)	Other financial liabilities	18	943.90	1,057.50	1,008.90	1,166.59
(b)	Provisions	19	1,421.98	947.66	510.79	52.59
(c)	Deferred tax liabilities (net)	20	47.24	44.40	59.48	828.35
(d)	Other non-current liabilities	21	-	-	-	0.02
	Total non-current liabilities		**39,867.17**	**43,184.68**	**41,785.26**	**28,453.81**
(2)	**Current liabilities**					
(a)	Financial liabilities					
(i)	Borrowings	16	10,949.37	10,739.70	10,815.74	6,940.73
(ii)	Trade payable	17				
	total outstanding dues of micro and small enterprises		-	-	-	-
	total outstanding dues of creditors other than micro and small enterprises		2,490.90	3,296.10	4,898.01	3,525.50
(iii)	Other financial liabilities	18	3,823.97	2,350.32	1,704.64	1,070.47
(b)	Other current liabilities	21	50.81	111.28	1,629.06	4,464.58
(c)	Provisions	19	355.20	162.79	1.11	0.16
(d)	Current tax liability (net)		-	-	-	-
	Total current liabilities		**17,670.25**	**16,660.19**	**19,048.56**	**16,001.44**
	TOTAL LIABILITIES		**57,537.42**	**59,844.87**	**60,833.82**	**44,455.25**
	TOTAL EQUITY AND IABILITIES		**58,941.09**	**58,337.42**	**58,702.37**	**45,071.98**

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF PROFIT AND LOSS

(Rs.in Million)

SI	Particulars	Notes	For the period ended 31st December, 2020	For the year ended 31st March, 2020	For the year ended 31st March, 2019	For the year ended 31st March, 2018
(I)	Revenue from Operations	22	8,904.94	12,860.54	38,333.21	25,892.08
(II)	Other income	23	166.93	111.54	354.70	39.85
(III)	**Total Income (I+II)**		**9,071.87**	**12,972.08**	**38,687.91**	**25,931.93**
(IV)	Expenses					
	Cost of construction	24	1,763.57	5,864.99	35,039.87	23,619.29
	Employee benefits expense	25	8.72	11.20	5.46	33.76
	Finance costs	26	3,472.10	4,432.60	3,784.78	1,975.55
	Depreciation and amortization expense	27	420.73	560.20	490.58	240.15
	Other expenses	28	589.08	680.18	699.42	415.62
	Total expenses (IV)		**6,254.20**	**11,549.17**	**40,020.11**	**26,284.37**
(V)	Profit/(loss)before exceptional items and tax (III-IV)		2,817.67	1,422.90	(1,332.21)	(352.44)
(VI)	Exceptional items					
(VII)	**Profit / (loss) before tax (V) - (VI)**		**2,817.67**	**1,422.90**	**(1,332.21)**	**(352.44)**
(VIII)	**Tax expenses**					
	(1) Current tax		54.96	168.88	0.10	11.37
	(2) Deferred tax - Charged/(Credit)	20	2.84	(15.08)	(768.87)	752.64
	(3) MAT Credit			0.24	(15.25)	-
	(4) Income Tax for earlier years		(151.25)	-	-	-
(IX)	**Profit (Loss) for the period/year from continuing operations (VII - VIII)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(X)	Profit/(loss) from discontinued operations		-	-	-	-
(XI)	Tax expenses of discontinued operations		-	-	-	-
(XIII)	**Profit/(loss) for the period/year VI= (IX+XII)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(X)	**Other Comprehensive Income**					
	A (i) Items that will not be reclassified to profit or loss		-	-	-	-
	(ii) Income tax relating to items that will not be reclassified to profit or loss		-	-	-	-
	B (i) Items that will be reclassified to profit or loss		-	-	-	-
	(ii) Income tax relating to items that will be reclassified to profit or loss		-	-	-	-
(XI)	**Total Comprehensive Income for the period/year (Comprising Profit (Loss) and Other Comprehensive Income for the period/year) (IX-X)**		**2,911.12**	**1,268.86**	**(548.19)**	**(1,116.45)**
(XII)	**Earnings per unit (for continuing operations)**	30	Refer Note 41			
	(1) Basic					
	(2) Diluted					

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF CHANGES IN EQUITY

A. Equity share capital **(Rs.in Million)**

Particulars	Note	Amount (Rs.)
Balance as on 31 March 2017		**136.22**
Balance as on 1 April 2017	14	136.22
Changes in equity share capital during the year		129.18
Balance as on 31 March 2018		**265.41**
Balance as on 1 April 2018	14	265.41
Changes in equity share capital during the year		(41.81)
Balance as on 31 March 2019		**223.60**
Balance as on 1 April 2019	14	223.60
Changes in equity share capital during the year		(13.31)
Balance as on 31 March 2020		**210.28**
Balance as on 1 April 2020	14	210.28
Changes in equity share capital during the year		-
Balance as on 31 December 2020		**210.28**

B. Other equity **(Rs.in Million)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 31 March 2017	1,725.42	-	(1,339.37)	386.05
Total comprehensive income for the period 31st March 2018				
Profit or (loss)	-	-	(1,116.44)	(1,116.44)
Excess Income Tax Provision Written off	-	-	2.69	2.69
Issue of Shares	1,079.02	-	-	1,079.02
Balance as on 31 March 2018	**2,804.44**	**-**	**(2,453.12)**	**351.32**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption	Retained	
Balance as on 31 March 2018	2,804.44	-	(2,453.12)	351.32
Profit or (loss) for the year	-	-	(548.19)	(548.19)
Issue of Shares/adjustement	(2,158.19)	-	-	(2,158.19)
Balance as on 31 March 2019	**646.25**	**-**	**(3,001.31)**	**(2,355.06)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 31 March 2019	646.25	-	(3,001.31)	(2,355.06)
Profit or (loss) for the year	-	-	1,268.86	1,268.86
Transfer to Loan Redemption Reserve	-	445.77	(445.77)	-
Securities Premium	143.00	-	-	143.00
Issue of Shares/adjustement	(774.53)	-	-	(774.53)
Balance as on 31 March 2020	**14.72**	**445.77**	**(2,178.21)**	**(1,717.73)**

Particulars	Reserves & Surplus			Total
	Securities Premium	Loan Redemption Reserve	Retained Earnings	
Balance as on 1st April 2020	14.72	445.77	(2,178.21)	(1,717.73)
Profit or (loss) for the period	-	-	2,911.12	2,911.12
Transfer to Loan Redemption Reserve	-	1,346.40	(1,346.40)	-
Balance as on 31 December 2020	**14.72**	**1,792.17**	**(613.49)**	**1,193.39**

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

SHREM INVIT
COMBINED STATEMENT OF CASH FLOW

Rs. in Millions

Sr No	Particulars	For the period ended 31st Dec 2020	For the period ended 31st March 2020	For the period ended 31st March 2019	For the period ended 31st March 2018
A	**CASH FLOW FROM OPERATING ACTIVITIES:**				
	Net Profit /(Loss) before tax as per Profit & Loss Account	2,817.67	1,422.90	(1,332.21)	(352.44)
		-	-	-	-
	Adjusted for:	-	-	-	-
	Depreciation & Amortisation	420.73	560.20	490.58	240.15
	Finance Cost	3,472.10	4,432.60	3,784.78	1,975.55
	Interest Income	(133.41)	(101.77)	(65.20)	(18.82)
	Operating Profit before Working Capital Changes	6,577.09	6,313.93	2,877.95	1,844.44
	Adjusted for:				
	(Increase)/Decrease in Current and Non- Current Assets	(2,166.75)	(17,106.53)	(180.65)	(9,219.10)
	Increase/(Decrease) in Current and Non Current Liabilities	1,161.10	(1,977.54)	(377.35)	7,176.61
	Net cash from Operating Activities before Income Tax	5,571.44	(12,770.14)	2,319.95	(198.05)
	Income tax paid / (Refund)	413.31	505.31	111.46	19.42
	Excess Provision write off	-	-	-	2.69
	Net Cash from Operating Activities	5,158.13	(13,275.45)	2,208.49	(214.78)
B	**CASH FLOW FROM INVESTING ACTIVITIES:**				
	(Purchase) / Sale of Property, Plant & Equipment - Net	2,747.37	18,216.62	(12,154.44)	(1,718.14)
	Intangible Assets under development	-	-	-	(4,623.45)
	Capitalization of Construction Cost	-	-	-	(5,013.03)
	Capitalization in Intangible Assets		-	(384.84)	-
	Changes in Financial assets	-	-	-	-
	On Account of Service Concession Arrangement	-	-	-	(564.08)
	(Purchase) / Sale of Investments - Net	-	541.02	(541.02)	800.25
	Interest Income	133.41	101.77	65.20	18.82
	Net cash used in Investing Activities	2,880.78	18,859.41	(13,015.10)	(11,099.63)
C	**CASH FLOW FROM FINANCING ACTIVITIES:**				
	Proceed from issue of / (Reduction of) Share Capital including Share Premium - Net	-	(644.85)	(2,200.00)	(1,718.66)
	Procceds from / (Repayment) of Long Term Borrowings - Net	(3,681.07)	1,079.81	13,649.77	11,972.04
	Procceds from / (Repayment) of Short Term Borrowings - Net	209.67	(76.04)	3,875.01	4,101.17
	Finance Cost	(3,472.10)	(4,432.60)	(3,784.78)	(1,975.56)
	Net Cash from / (used in) Financing Activities	(6,943.50)	(4,073.68)	11,540.00	12,378.99
	Net Increase / (Decrease) in Cash and Cash Equivalents	1,095.40	1,510.28	733.38	1,064.59
	Opening Balance of Cash and Cash Equivalents	3,801.25	2,290.97	1,557.58	492.98
	Closing Balance of Cash and Cash Equivalents	4,896.65	3,801.25	2,290.97	1,557.58

As per our report of even date

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

1. Corporate and general information

The Shrem InvIT Fund (the "Fund" / "Trust") is a trust constituted by "The Indenture of Trust" dated *December 31, 2020* registered under the Indian Trust Act, 1882 and registered under Registration Act, 1908 and under the Securities Exchange Board of India (Infrastructure Investment Trust) Regulations, 2014. The Fund is settled by the Sponsor, Shrem Infra Structure Private Limited (the "Sponsor"), an infrastructure development company in India. The Trustee to the Fund is Axis Trustee Services Limited (the "Trustee"). Investment manager for the Fund is Shrem Financial Private Limited (the "Investment Manager").

The Fund has been formed to invest in infrastructure assets primarily being in the road sector in India. All of the Fund's road projects are implemented and held through holding Companies and special purpose vehicles ("Trust Group "). The Fund's portfolio subsequent to the completion of the proposed offering will comprise of 24 road projects and 3 Holding companies as listed below: -

Holding Company	Country of incorporation
Shrem Infraventure Private Limited	India
Shrem Tollway Private Limited	India
Shrem Roadways Private Limited	India

Project SPV Name	Proposed Shareholding	Nature of Proposed investment	Country of incorporation
Suryavanshi Infrastructure Private Limited	100%	Subsidiary	India
DBL Nadiad Modasa Tollways Limited*	74%	Subsidiary	India
DBL Jaora-Sailana Tollways Limited	100%	Subsidiary	India
DBL Bankhlafata - Dogawa Tollways Limited	100%	Subsidiary	India
DBL Ashoknagar Vidisha Tollways Ltd	100%	Subsidiary	India
DBL Silwani-Sultanganj Tollways Limited	100%	Subsidiary	India
DBL Sitamau-Suwasara Tollways Limited	100%	Subsidiary	India
DBL Hata-Dargawon Tollways Limited	100%	Subsidiary	India
DBL Patan Rehli Tollways Limited	100%	Subsidiary	India
DBL Mundi-Sanawad Tollways Limited	100%	Subsidiary	India
DBL Uchera – Nagod Tollways Limited	100%	Subsidiary	India
DBL Betul-Sarni Tollways Limited	100%	Subsidiary	India
DBL Tikamgarh-Nowgaon Tollways Limited	100%	Subsidiary	India
DBL Sardarpur Badnawar Tollways Limited	100%	Subsidiary	India
DBL Mundargi Harapanahalli Tollways Limited*	74%	Subsidiary	India

DBL Hassan Periyapatna Tollways Limited*	74%	Subsidiary	India
DBL Hirekerur Ranibennur Tollways Limited*	74%	Subsidiary	India
DBL Lucknow Sultanpur Highways Limited	100%	Subsidiary	India
DBL Tuljapur Ausa Highways Limited	100%	Subsidiary	India
DBL Mahagaon Yavatmal Highways Private Limited	100%	Subsidiary	India
DBL Yavatmal Wardha Highways Private Limited	100%	Subsidiary	India
DBL Kalmath Zarap Highways Limited	100%	Subsidiary	India
DBL Wardha Butibori Highways Private Limited	100%	Subsidiary	India
Jalpa Devi Tollways Limited	100%	Subsidiary	India

*Shareholding under these entities shall be restricted to 74% in line with the respective concession agreements, whereas 100% financial interest will lie with Trust

2. SIGNIFICANT ACCOUNTING POLICY

2.1 Basis of Preparation of combined financial statements

The Combined financial statements of the Trust Group have been prepared in accordance with Indian Accounting Standards (Ind AS) as notified by Ministry of Corporate Affairs under sections 133 of the Companies Act, 2013 read with Rule 3 of the Companies (Indian Accounting Standards) Rules, 2015 and Companies (Indian Accounting Standards) Amendment Rules 2016.

The Combined Financial Statements of Trust Group of Combined Balance Sheets as at December 31 2020, March 31, 2020, March 31, 2019 and March 31, 2018, Combined Statement of Profit and Loss, Combined Cash Flow Statement and Combined Statement of Changes in Equity for the nine months ended December 31 2020 and for the year ended March 31, 2020, March 31, 2019 and March 31, 2018 and Combined Statement of Net Assets at Fair Value as at December 31, 2020 and the Combined Statement of Total Return at Fair Value as at December 31 2020, a summary of significant accounting policies, notes and other explanatory Information. The Combined Financial Statement has been prepared for inclusion in the draft place memorandum (the "Draft Placement Memorandum") to be issued in connection with the proposed offering (the "Offering") of the Fund.

The Combined Financial Statements are special purpose financial statements and have been prepared by Trust Group and the Investment Manager to meet the requirements of InvIT Regulations and for inclusion in the Draft placement memorandum prepared by the Investment Manager in connection with the proposed Initial Private Placement of units of Shrem InvIT. As a result, the Combined Financial Statements may not be suitable for another purpose.

In accordance with the requirements of Securities and Exchange Board of India (Infrastructure Investment Trust) Regulations 2014, as amended from time to time including guidelines and circulars issued thereunder including the circular dated October 20, 2016 on disclosure of financial information in placement memorandum for InvIT (together referred to as InvIT Regulations), since the Fund is newly set up on December 31,2020, to present the financial position and performance of the proposed Trust Group, the historical Combined Financial Statements have been prepared, as if the Fund structure was in place and 100% interest of the Project SPVs was part of the Fund since April 01, 2017

The Combined Financial Statements are presented in Rs. in millions, except when otherwise indicated.

Basis of preparation of Combined Financial Statements

The Combined Financial Statements comprise the financial statements of the Holding companies and Project SPV Group.

Combined Financial Statements are prepared using uniform accounting policies for like transactions and other events in similar circumstances.

The financial statements of the Trust Group used for the purpose of combination are drawn for the year ended 31st March and periods up to and including the nine months ended December 31, 2020.

Combination procedure as per InvIT Regulation:

(a) Combine like items of assets, liabilities, equity, income, expenses and cash flows of Trust Group.

(b) Eliminate in full intra Trust Group assets and liabilities, income, expenses and cash flows relating to transactions between Trust Group. Profit or loss and each component of other comprehensive income (OCI) are attributed to the equity holders of the Trust Group and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance.

2.2 Use of estimates

The preparation of the combined financial statements in conformity with Ind AS requires management to make estimates, judgments and assumptions. These estimates, judgments and assumptions affect the application of accounting policies and the reported amounts of assets and liabilities, the disclosures of contingent liabilities at the date of the financial statements and reported amounts of revenues and expenses during the period. Accounting estimates could change from period to period. Actual results could differ from those estimates. Appropriate changes in estimates are made as management becomes aware of changes in circumstances surrounding the estimates. Changes in estimates are reflected in the financial statements in the period in which changes are made and, if material, their effects are disclosed in the notes to the financial statements. This note provides an overview of the areas that involved a higher degree of judgement or complexity and of items which are more likely to be materially adjusted due to estimates and assumptions turning out to be different than those originally assessed. Detailed information about each of these estimates and judgements is included in the relevant note. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised prospectively.

A. Judgements in applying accounting policies:

The judgements, apart from those involving estimations (see note below) that the Trust Group has made in the process of applying its accounting policies and that have a significant effect on the amounts recognised in these financial statements pertain to useful life of assets. The Trust Group is required to determine whether its intangible assets have indefinite or finite life which is a subject matter of judgement.

B. Current versus non-current classification

The Trust Group presents assets and liabilities in the balance sheet based on current/ non-current classification. An asset is treated as current when it is:

- Expected to be realised or intended to be sold or consumed in normal operating cycle
- Held primarily for the purpose of trading
- Expected to be realised within twelve months after the reporting period, or
- Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period. All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting period, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting period The Project SPV Group classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

The operating cycle is the time between the acquisition of assets for processing and their realisation in cash and cash equivalents. The Project SPV Group has identified twelve months as its operating cycle.

2.3 Functional and presentation currency

These financial statements are presented in Indian Rupees (INR), which is also the Trust group's functional currency. All amounts have been rounded-off to the nearest million, unless otherwise indicated.

2.4 Property, plant and equipment and Depreciation

Items of property, plant and equipment are measured at cost, which includes capitalised borrowing costs, less accumulated depreciation and accumulated impairment losses, if any. Cost of an item of property, plant and equipment comprises its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates, any directly attributable cost of bringing the item to its working condition for its intended use and estimated costs of dismantling and removing the item and restoring the site on which it is located. If significant parts of an item of property, plant and equipment have different useful lives, then they are accounted for as separate items (major components) of property, plant and equipment. Any gain or loss on disposal of an item of property, plant and equipment is recognised in profit or loss Subsequent expenditure is capitalised only if it is probable that the future economic benefits associated with the expenditure will flow to the Trust Group. Depreciation is calculated on cost of items of property, plant and equipment less their estimated residual values over their estimated useful lives using the straight-line method, and is generally recognised in the statement of profit and loss. Assets acquired under finance leases are depreciated over the shorter of the lease term and their useful lives unless it is reasonably certain that the company will obtain ownership by the end of the lease term. Freehold land is not depreciated. Depreciation on additions (disposals) is provided on a pro-rata basis i.e. from (upto) the date on which asset is ready for use (disposed of).

2.5 Intangible Assets

(a) Other Intangible Assets

Intangible assets that the Trust Group controls and from which it expects future economic benefits are capitalised upon acquisition at cost comprising the purchase price and directly attributable costs to prepare the assets for its intended use. Intangible assets that have finite lives are amortised over their useful lives by the straight line method.

(b) Service concession arrangements (Toll Rights)

The Trust Group recognises an intangible asset arising from a service concession arrangement to the extent the Trust Group has right to charge for the use of concession infrastructure. Intangible asset would be initially measured at cost. The fair value, at the time of initial recognition of such an intangible asset received as consideration for providing construction or upgrade services in a service concession arrangement, is regarded to be its cost. Borrowing costs directly attributable to the construction of a qualifying asset are capitalised as part of the cost. Subsequent to initial recognition the intangible asset is measured at cost less accumulated amortisation and accumulated impairment losses.

Subsequent costs:

Subsequent costs are capitalised only when it increases the future economic benefits embodied in the specific asset to which it relates.

Amortisation:

Amortisation is calculated over the cost of the asset, or other amount substituted for cost, less its residual value. Amortisation is recognised in statement of profit and loss on a straight-line basis over the estimated useful lives of intangible assets from the date that they are available for use, since this most closely reflects the expected pattern of consumption of the future economic benefits embodied in the asset. The estimated useful life of an intangible asset in a service concession arrangement is a period from when the trust group has right to charge the user of infrastructure for such use to the end of the concession period.

2.6 Impairment of non-financial assets:

The trust group assesses at each balance sheet date whether there is any indication that an asset or cash generating unit (CGU) may be impaired. If any such indication exists, the trust group estimates the recoverable amount of the asset. The recoverable amount is the higher of an asset's or CGU's net selling price or its value in use. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. An impairment loss is recognised if the carrying amount of an asset or CGU exceeds its recoverable amount. Impairment losses are recognised in the statement of profit and loss. They are allocated first to reduce the carrying amount of any goodwill allocated to the CGU, and then to reduce the carrying amounts of the other assets in the CGU on a pro rata basis. An impairment loss in respect of goodwill is not reversed. For other assets, an impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised

2.7 Financial Instruments:

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Financial Assets

Initial Recognition

The trust group recognizes financial assets when it becomes a party to the contractual provisions of the instrument. All financial assets are recognized at fair value on initial recognition, except for trade receivables which are initially measured at transaction price. Transaction costs that are directly attributable to the acquisition or issue of financial assets that are not at fair value through profit or loss are added to the fair value on initial recognition.

Subsequent measurement

A financial asset is subsequently measured at amortised cost if it is held within a business model whose objective is to hold the asset in order to collect contractual cash flows and the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Derecognition

The trust group derecognises a financial asset when the contractual rights to the cash flows from the financial asset expire, or it transfers the rights to receive the contractual cash flows in a transaction in which substantially all of the risks and rewards of ownership of the financial asset are transferred or in which the trust group neither transfers nor retain substantially all of the risks and rewards of ownership and it does not retain control of the financial asset.

Impairment of financial asset

For impairment of financial assets, trust group applies expected credit loss (ECL) model. Following financial assets and credit risk exposure are covered within the ECL model:

a. Financial assets that are debt instruments, and are measured at amortised cost e.g. loans, debt securities, deposits, trade receivables and bank balance
b. Trade receivables or any contractual right to receive cash or another financial asset that result from transactions that are within the scope of Ind AS 115.

   The trust group follows 'simplified approach' for recognition of impairment loss allowance on trade receivables including receivables recognised under service concession arrangements.

   The application of simplified approach does not require the trust group to track changes in credit risk. Rather, it recognises impairment loss allowance based on lifetime ECLs at each reporting date, right from its initial recognition. For recognition of impairment loss on other financial assets and risk exposure, the trust group determines that whether there has been a significant increase in the credit risk since initial recognition. If credit risk has not increased significantly, 12-month ECL is used to provide for impairment loss. However, if credit risk has increased significantly, then the impairment loss is provided based on lifetime ECL

Financial liabilities

Initial recognition

The trust group initially recognises borrowings, trade payables and related financial liabilities on the date on which they are originated. All other financial instruments (including regular-way purchases and sales of financial assets) are recognised on the trade date, which is the date on which the trust group becomes a party to the contractual provisions of the instrument.

Non-derivative financial liabilities are initially recognised at fair value, net of transaction costs incurred.

Subsequent measurement

Financial liabilities are subsequently carried at amortized cost using the effective interest method, except for contingent consideration recognized in a business combination which is subsequently measured at fair value through profit and loss. For trade and other payables maturing within one year from the Balance Sheet date, the carrying amounts approximate fair value due to the short maturity of these instruments.

Derecognition

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the statement of profit or loss.

Offsetting of financial instruments

Financial assets and financial liabilities are offset and the net amount is reported in the balance sheet if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis, to realise the assets and settle the liabilities simultaneously.

2.8 Leases

The trust group assesses whether a contract contains a lease, at inception of a contract. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. To assess whether a contract conveys the right to control the use of an identified asset, the trust group assesses whether: (i) the contract involves the use of an identified asset (ii) the trust group has substantially all of the economic benefits from use of the asset through the period of the lease and (iii) the trust group has the right to direct the use of the asset. At the date of commencement of the lease, the trust group recognizes a right-of-use asset ("ROU") and a corresponding lease liability for all lease arrangements in which it is a lessee, except for leases with a term of twelve months or less (short-term leases) and low value leases

For these short-term and low value leases, the trust group recognizes the lease payments as an operating expense on a straight-line basis over the term of the lease.

Certain lease arrangements include the option to extend or terminate the lease before the end of the lease term. ROU assets and lease liabilities includes these options when it is reasonably certain that they will be exercised.

The right-of-use assets are initially recognized at cost, which comprises the initial amount of the lease liability adjusted for any lease payments made at or prior to the commencement date of the lease plus any initial direct costs less any lease incentives. They are subsequently measured at cost less accumulated depreciation and impairment losses.

Right-of-use assets are depreciated from the commencement date on a straight-line basis over the shorter of the lease term and useful life of the underlying asset. Right of use assets are evaluated for recoverability whenever events or changes in circumstances indicate that their carrying amounts may not be recoverable. For the purpose of impairment testing, the recoverable amount (i.e. the higher of the fair value less cost to sell and the value-in-use) is determined on an individual asset basis unless the asset does not generate cash flows that are largely independent of those from other assets. In such cases, the recoverable amount is determined for the Cash Generating Unit (CGU) to which the asset belongs.

The lease liability is initially measured at amortized cost at the present value of the future lease payments. The lease payments are discounted using the interest rate implicit in the lease or, if not readily determinable, using the incremental borrowing rates in the country of domicile of these leases. Lease liabilities are remeasured with a corresponding adjustment to the related right of use asset if the group trust changes its assessment if whether it will exercise an extension or a termination option.

Lease liability and ROU asset have been separately presented in the Balance Sheet and lease payments have been classified as financing cash flows.

2.9 Provisions and Contingencies

Provisions involving substantial degree of estimation in measurement are recognized when there is a present obligation as a result of past events, it is probable that there will be an outflow of resources and a reliable estimate can be made of the amount of the obligation. These are reviewed at each balance sheet date and adjusted to reflect the current best estimate. Contingent liabilities are not provided for and are disclosed by way of notes.

If the effect of the time value of money is material, provisions are discounted using a current pretax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognised as a finance cost in the statement of profit and loss.

2.10 Revenue recognition

Contract revenue includes the initial amount agreed in the contract plus any variations in contract work, claims and incentive payments, to the extent that it is probable that they will result in revenue and can be measured reliably.

If the outcome of a construction contract can be estimated reliably, contract revenue is recognised in profit or loss in proportion to the stage of completion of the contract. The stage of completion is assessed by reference to surveys of work performed. Otherwise, contract revenue is recognised only to the extent of contract costs incurred that are likely to be recoverable. Revenue related to construction or upgrade services provided under a service concession arrangement is recognised based on the stage of completion of the work performed. Operation or service revenue is recognised in the period in which the services are provided by the trust group Income from toll is recognised on receipt basis. Interest income is recognised in the Statement of Profit and Loss using the effective interest method in accordance with service concession agreements. Other income comprises of interest income, dividend income, foreign currency gain on financial assets and liabilities and export benefits.

2.11 Borrowing Cost

Borrowing costs are interest and other costs (including exchange differences relating to foreign currency borrowings to the extent that they are regarded as an adjustment to interest costs) incurred in connection with the borrowing of funds. Borrowing costs directly attributable to acquisition or construction of an asset which necessarily take a substantial period of time to get ready for their intended use are capitalised as part of the cost of that asset. Other borrowing costs are recognised as an expense in the period in which they are incurred.

2.12 Earnings per Unit

Basic earnings per unit is computed using the net profit or loss for the year attributable to the unit holders and weighted average number of units outstanding during the year. Diluted earnings per unit is computed using the net profit or loss for the year attributable to the unit holders and weighted average number of equity and potential units outstanding during the year, except where the result would be anti-dilutive.

2.13 Cash Flow statement

Cash flows are reported using the indirect method, whereby profit for the period is adjusted for the effects of transactions of a non-cash nature, any deferrals or accruals of past or future operating cash receipts or payments and item of income or expenses associated with investing or financing cash flows. The cash flows from operating, investing and financing activities of the trust group are segregated.

2.14 Employee Benefits

Short Term Employment benefits

All employee benefits payable wholly within twelve months of rendering the service are classified as short-term employee benefits. Benefits such as salaries, wages etc. and the expected cost of exgratia are recognized in the period in which the employee renders the related service. A liability is recognised for the amount expected to be paid if the trust group has a present legal or constructive obligation to pay this amount as a result of past service provided by the employee and the obligation can be estimated reliably.

Post Employment Employee Benefits

Retirement benefits to employees comprise payments to government provident funds, gratuity fund and Employees State Insurance.

Defined Contribution Plans

The trust group's contribution to defined contributions plans such as Provident Fund, Employee State Insurance are recognised in the Statement of Profit and Loss in the year when the contributions to the respective funds are due. There are no other obligations other than the contribution payable to the respective Funds

Defined Benefit Plans

Gratuity liability is defined benefit obligation. The trust group's net obligation in respect of the gratuity benefit scheme is calculated by estimating the amount of future benefit that employees have earned in return for their service in the current and prior periods; that benefit is discounted to determine its present value. The present value of the obligation under such defined benefit plan is determined based on actuarial valuation by an independent actuary, using the projected unit credit method, which recognizes each period of service as giving rise to additional unit of employee benefit entitlement and measures each unit separately to build up the final obligation.

The obligation is measured at the present value of the estimated future cash flows. The discount rates used for determining the present value of the obligation under defined benefit plan, are based on the market yields on Government securities as at the Balance Sheet date.

Remeasurement of the net defined benefit liability, which comprise actuarial gains and losses, the return on plan assets (excluding interest) and the effect of the asset ceiling (if any, excluding interest), are recognised immediately in Other Comprehensive Income. Net interest expense (income) on the net defined liability (assets) is computed by applying the discount rate, used to measure the net defined liability (asset), to the net defined liability (asset) at the start of the financial year after taking into account any changes as a result of contribution and benefit payments during the year. Net interest expense and other expenses related to defined benefit plans are recognised in Statement of Profit and Loss.

When the benefits of a plan are changed or when a plan is curtailed, the resulting change in benefit that relates to past service or the gain or loss on curtailment is recognised immediately in Statement of Profit and Loss. The Company recognises gains and losses on the settlement of a defined benefit plan when the settlement occurs. Actuarial gains/losses are recognized in the other comprehensive income.

2.15 Income Taxes

Current Tax

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of current tax reflects the best estimate of the tax amount expected to be paid or received after considering the uncertainty, if any, related to income taxes. It is measured using tax rates (and tax laws) enacted or substantively enacted by the reporting date Current tax assets and current tax liabilities are offset only if there is a legally enforceable right to set off the recognised amounts, and it is intended to realise the asset and settle the liability on a net basis or simultaneously. Minimum alternative tax (MAT) credit is recognized as an asset only when and to the extent there is convincing evidence that the trust group will pay income tax higher than that computed under MAT, during the year that MAT is permitted to be set off under the Income Tax Act, 1961 (specified year). In the year, in which the MAT credit becomes eligible to be recognized as an asset the said asset is created by way of a credit to the Statement of profit and loss and shown as MAT credit entitlement. The trust group reviews the same at each balance sheet date and writes down the carrying amount of MAT credit entitlement to the extent there is no longer convincing evidence to the effect that the trust group will pay income tax higher than MAT during the specified year.

Appendix C to Ind AS 12 Uncertainty over Income Tax Treatments:

The interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of Ind AS 12 and does not apply to taxes or levies outside the scope of Ind AS 12, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The interpretation specifically addresses the following:

• Whether an entity considers uncertain tax treatments separately

• The assumptions an entity makes about the examination of tax treatments by taxation authorities

• How an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates

The trust group has determined whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty has been followed. In determining the approach that better predicts the resolution of the uncertainty, the trust group considers, for example, (a) how it prepares its income tax filings and supports tax treatments; or (b) how the trust group expects the taxation authority to make its examination and resolve issues that might arise from that examination.

The amendment is effective from April 1, 2019. The trust group has evaluated the effect of Ind AS 12 amendment on the financial statements and concluded that there is no material impact on the retained earnings and on its profit for the year ended March 31, 2020.

Deferred Tax

Deferred tax is recognised in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the corresponding amounts used for taxation purposes. Deferred tax is also recognised in respect of carried forward tax losses and tax credits. Deferred income tax assets and liabilities are measured using tax rates and tax laws that have been enacted or substantively enacted by the balance sheet date and are expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of changes in tax rates on deferred income tax assets and liabilities is recognized as income or expense in the period that includes the enactment or the substantive enactment date. A deferred income tax asset is recognized to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and tax losses can be utilized. The trust group offsets current tax assets and current tax liabilities, where it has a legally enforceable right to set off the recognized amounts and where it intends either to settle on a net basis, or to realize the asset and settle the liability simultaneously. The income tax provision for the interim period is made based on the best estimate of the annual average tax rate expected to be applicable for the full financial year.

2.16 Assets Held for Sale

Non-current assets are classified as held for sale when their carrying amount will be recovered principally through a sale transaction rather than continuing use and a sale is highly probable.

Assets designated as held for sale are held at the lower of carrying amount at designation and fair value less costs to sell.

2.17 Fair value measurement

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either:

• In the principal market for the asset or liability, or

• In the absence of a principal market, in the most advantageous market for the asset or liability

The principal or the most advantageous market must be accessible by the trust group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

For cash and other liquid assets, the fair value is assumed to approximate to book value, given the short term nature of these instruments. For those items with a stated maturity exceeding twelve months, fair value is calculated using a discounted cash flow methodology.

A fair value measurement of a non-financial asset considers a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another.

The trust group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

• Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities

• Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable

• Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the trust group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

For the purpose of fair value disclosures, the trust group has determined classes of assets and liabilities based on the nature, characteristics and risks of the asset or liability and the level of the fair value hierarchy as explained above.

2.18 Segment information

The Project SPV Group is engaged in "Road Infrastructure Projects" which in the context of Ind AS 108 "Operating Segment" is considered as the only segment. The Project SPV Group's activities are restricted within India and hence, no separate geographical segment disclosure is considered necessary.

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

3. Property, Plant and Equipment

(Rs.in Million)

	Gross Block				Depreciation				Net Block	
Particulars	**As at 01/04/2017**	**Additions**	**Deductions**	**As at 31/03/2018**	**As at 01/04/2017**	**For the year**	**Deductions**	**As at 31/03/2018**	**As at 31/03/2018**	**As at 31/03/2017**
Toll Camera	0.32	-	-	0.32	0.15	0.06	-	0.21	0.11	0.17
Office Equipment	0.95	0.72	-	1.67	0.23	0.21	-	0.44	1.23	0.72
Vehicle	0.32	-	-	0.32	0.13	0.04	-	0.17	0.15	0.19
Electrical equipments	0.66	-	-	0.66	0.31	0.13	-	0.44	0.22	0.35
Computer and Printer	0.12	0.11	-	0.23	0.03	0.05	-	0.08	0.15	0.09
Office Furniture	0.01	0.74	-	0.75	-	0.01	-	0.01	0.74	0.01
Toll management system	-	3.31	-	3.31	-	0.04	-	0.04	3.27	-
Total	**2.38**	**4.88**	**-**	**7.26**	**0.85**	**0.54**	**-**	**1.39**	**5.87**	**1.53**

(Rs.in Million)

	Gross Block				Depreciation				Net Block	
Particulars	**As at 01/04/2018**	**Additions**	**Deductions**	**As at 31/03/2019**	**As at 01/04/2018**	**For the year**	**Deductions**	**As at 31/03/2019**	**As at 31/03/2019**	**As at 31/03/2018**
Toll Camera	0.32	0.12	-	0.44	0.21	0.07	-	0.28	0.16	0.11
Office Equipment	1.67	-	-	1.67	0.44	0.26	-	0.70	0.97	1.23
Vehicle	0.32	-	-	0.32	0.17	0.04	-	0.21	0.11	0.15
Electrical equipments	0.66	-	-	0.66	0.44	0.13	-	0.57	0.09	0.22
Computer and Printer	0.23	-	-	0.23	0.08	0.04	-	0.12	0.11	0.15
Office Furniture	0.75	0.06	-	0.81	0.01	0.15	-	0.16	0.65	0.74
Toll management system	3.31	-	-	3.31	0.04	0.38	-	0.42	2.89	3.27
Total	**7.26**	**0.18**	**-**	**7.44**	**1.39**	**1.07**	**-**	**2.46**	**4.98**	**5.87**

(Rs.in Million)

	Gross Block				Depreciation				Net Block	
Particulars	**As at 01/04/2019**	**Additions**	**Deductions**	**As at 31/03/2020**	**As at 01/04/2019**	**For the year**	**Deductions**	**As at 31/03/2020**	**As at 31/03/2020**	**As at 31/03/2019**
Toll Camera	0.44	-	-	0.44	0.28	0.04	-	0.32	0.12	0.16
Equipments & Accessories	-	1.93	-	1.93	-	0.03	-	0.03	1.90	-
Vehicle	0.32	-	-	0.32	0.21	0.04	-	0.25	0.07	0.11
Electrical Equipments	0.66	-	-	0.66	0.57	0.09	-	0.66	-	0.09
Computer and Printer	0.23	0.18	-	0.41	0.12	0.05	-	0.17	0.24	0.11
Office Furniture	0.81	-	-	0.81	0.16	0.07	-	0.23	0.58	0.65
Toll management system	3.31	-	-	3.31	0.42	0.38	-	0.80	2.51	2.89
Office Equipment	1.67	-	-	1.67	0.70	0.34	-	1.04	0.63	0.97
Total	**7.44**	**2.11**	**-**	**9.55**	**2.46**	**1.04**	**-**	**3.50**	**6.05**	**4.98**

(Rs.in Million)

	Gross Block				Depreciation				Net Block	
Particulars	**As at 01/04/2020**	**Additions**	**Deductions**	**As at 31/12/2020**	**As at 01/04/2020**	**For the period**	**Deductions**	**As at 31/12/2020**	**As at 31/12/2020**	**As at 31/03/2020**
Toll Camera	0.44			0.44	0.32	-		0.32	0.12	0.12
Equipments & Accessories	1.93			1.93	0.03	0.08		0.11	1.82	1.90
Vehicle	0.32			0.32	0.25	0.03		0.28	0.04	0.07
Electrical Equipments	0.66			0.66	0.66	-		0.66	-	-
Computer and Printer	0.41	0.15		0.56	0.17	0.05		0.22	0.34	0.24
Office Furniture	0.81			0.81	0.23	0.05		0.28	0.53	0.58
Toll management system	3.31			3.31	0.80	0.19		0.99	2.32	2.51
Office Equipment	1.67			1.67	1.04	0.19		1.23	0.44	0.63
Total	**9.55**	**0.15**	**-**	**9.70**	**3.50**	**0.59**	**-**	**4.09**	**5.61**	**6.05**

4 .Capital work in progress

(Rs. in Million)

Particulars	**As at 31/03/2018**	**As at 31/03/2019**	**As at 31/03/2020**	**As at 31/12/2020**
Capital Work in Progress	8,468.27	20,966.25	2,747.52	-
Total	**8,468.27**	**20,966.25**	**2,747.52**	**-**

5. Other Intangible Assets

(Rs. in Million)

Particulars	**As at 01/04/2017**	**Additions**	**Deductions**	**As at 31/03/2018**	**As at 01/04/2017**	**Amortisation For the Year**	**Deletion**	**As at 31/03/2018**	**As at 31/03/2018**	**As at 31/03/2017**
Toll Rights	3,278.75	77.53	-	3,356.28	481.59	239.61	-	721.20	2,635.07	2,797.16
	3,278.75	**77.53**	**-**	**3,356.28**	**481.59**	**239.61**	**-**	**721.20**	**2,635.07**	**2,797.16**

(Rs. in Million)

Particulars	**As at 01/04/2018**	**Additions**	**Deductions**	**As at 31/03/2019**	**As at 01/04/2018**	**For the Year**	**Deductions**	**As at 31/03/2019**	**As at 31/03/2019**	**As at 31/03/2018**
Toll Rights	3,356.28	7,784.75	-	11,141.03 -	721.20	489.51	-	1,210.72 -	9,930.31 -	2,635.07 -
	3,356.28	**7,784.75**	**-**	**11,141.03**	**721.20**	**489.51**	**-**	**1,210.72**	**9,930.31**	**2,635.07**

(Rs. in Million)

Particulars	**As at 01/04/2019**	**Additions**	**Deductions**	**As at 31/03/2020**	**As at 01/04/2019**	**For the Year**	**Deductions**	**As at 31/03/2020**	**As at 31/03/2020**	**As at 31/03/2019**
Toll Rights	11,141.03	-	-	11,141.03	1,210.72	559.16	-	1,769.88	9,371.15	9,930.31
	11,141.03	**-**	**-**	**11,141.03**	**1,210.72**	**559.16**	**-**	**1,769.88**	**9,371.15**	**9,930.31**

(Rs. in Million)

Particulars	As at 01/04/2020	Additions	Deductions	As at 31/12/2020	As at 01/04/2020	For the period	Deductions	As at 31/12/2020	As at 31/12/2020	As at 31/03/2020
Toll Rights	11,141.03	-	-	11,141.03	1,769.88	420.14	-	2,190.02	8,951.01	9,371.15
	11,141.03	**-**	**-**	**11,141.03**	**1,769.88**	**420.14**	**-**	**2,190.02**	**8,951.01**	**9,371.15**

6. Intangible Asset under Development

(Rs. in Million)

Particulars	As at 01/04/2017	Additions	Deductions	As at 31/03/2018
Intangible Asset under Development	3,520.29	4,829.65	606.32	7,743.63
Total	**3,520.29**	**4,829.65**	**606.32**	**7,743.63**

(Rs. in Million)

Particulars	As at 01/04/2018	Additions	Deductions	As at 31/03/2019
Intangible Asset under Development	7,743.63	649.16	8,392.78	-
Total	**7,743.63**	**649.16**	**8,392.78**	**-**

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

7. Loans

(Rs. in Million)

Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
Non-Current				
Security Deposit	0.05	0.05	-	-
Total	**0.05**	**0.05**	**-**	**-**

8: Trade Receivables

(Rs. in Million)

Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
Non Current				
Trade Receivables considered good - Unsecured	33,885.67	31,269.14	14,628.59	15,431.86
Less: Allowance for bad and doubtful debts	-	-	-	-
Total Non Current	**33,885.67**	**31,269.14**	**14,628.59**	**15,431.86**
Trade Receivables considered good - Unsecured	4,553.40	4,902.11	4,347.47	2,790.69
Less: Allowance for bad and doubtful debts	-	-	-	-
Total Current	**4,553.40**	**4,902.11**	**4,347.47**	**2,790.69**
Total	**38,439.07**	**36,171.25**	**18,976.06**	**18,222.55**

9. Other Financial Assets

(Rs. in Million)

	Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
	Non -Current				
(a)	Other assets#	1,170.12	1,057.50	-	-
	Total Non-current	**1,170.12**	**1,057.50**	**-**	**-**
	Current				
	Unsecured Considered Good				
(a)	Loans given*	840.07	786.91	10.37	9.51
(b)	Advance to Supliers & Creditors	-	-	-	0.20
(c)	Accrued Interest	9.27	1.92	-	-
(d)	Others	0.06	0.17	-	-
	Total current	**849.40**	**789.00**	**10.37**	**9.71**

Includes amount receivable from related parties of Rs.1057.50 million for the period ended on 31st December 2020.

Includes amount receivable from related parties of Rs.1057.50 million for the financial year ended on 31st March 2020.

* Includes amount receivable from related parties of Rs.10.37 million for the financial year ended on 31st March

* Includes amount receivable from related parties of Rs.9.51 million for the financial year ended on 31st March 2018.

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

10. Other Assets

(Rs. in Million)

	Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
	Non-current				
(a)	Advance Given	-	0.16	-	2,226.38
(b)	Amount held with MPRDC	1.00	1.00	1.00	1.00
(c)	Prepaid expense	-	-	-	0.01
(d)	Security Deposits/ Withheld Money	0.70	0.70	0.68	0.68
(e)	Others	-	-	-	34.46
	Total Non-current	**1.70**	**1.86**	**1.68**	**2,262.53**
	Current				
(a)	Security Deposit	9.17	9.19	28.10	23.97
(b)	Retention Money.	-	-	-	46.08
(c)	Advance to Suppliers/Creditors	14.54	15.00	944.42	4.88
(d)	Advance to Staff	-	-	-	-
(e)	Other Advances	-	-	-	0.02
(f)	Deposit with Govt Authorities	3,269.38	3,177.45	3,028.19	1,826.83
(g)	Mobilisation Advance	152.41	533.95	1,795.31	2,176.01
(h)	Withheld with Department	87.26	85.79	0.82	34.50
(i)	Prepaid expense	34.89	42.23	0.04	0.24
(j)	Accrued Interest	-	-	0.02	-
(k)	WCT Deducted	28.96	3.17	2.81	-
(l)	Others*	4.22	7.96	0.16	0.01
	Total Current	**3,600.83**	**3,874.74**	**5,799.87**	**4,112.53**
	Total	**3,602.53**	**3,876.59**	**5,801.55**	**6,375.06**

* Includes an amount of Rs.1.20 million receivable from related parties for the period ended on 31st December 2020.
* Includes an amount of Rs.5.38 million receivable from related parties for the year ended on 31st March 2020.

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

11. Investments

(Rs. in Million)

Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
Current				
Short Term investement in Liquid Funds	-	-	423.16	-
Investement in Mutual Funds	-	-	117.86	-
	-			
Total Current	**-**	**-**	**541.02**	**-**
Financial assets measured at amortised cost	-	-	541.02	-
Financial assets measured at fair value through other comprehensive income	-	-	-	-
Financial assets measured at fair value through profit & loss account	-	-	-	-
Total	**-**	**-**	**541.02**	**-**
Aggregate Book Value of Quoted Investments	-	-	-	-
Aggregate Market Value of Quoted Investments	-	-	517.66	-
Aggregate Book Value of Unquoted Investments	-	-	541.02	-

Particulars	Units As at 31-12-2020	Units As at 31-03-2020	Units As at 31-03-2019	Units As at 31-03-2018
L& T Money Market Fund -Growth (NAV Rs. 18.48 per unit)	-	-	49,04,489.24	-
IDBI Short Term Fund Regular Plan - Growth (NAV Rs. 18.5185 per unit)	-	-	63,61,886.21	-
OGRD Union Liquid Fund Growth - Direct Plan (NAV Rs. 1798.759 per unit)		-	1,00,000.00	-
LGRD Union Liquid Fund Growth - Direct Plan (NAV Rs. 1000.862 Per unit)	-	-	1,29,210.51	-

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

12. Cash and Cash Equivalents

(Rs. in Million)

	Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
(i)	Cash on hand	1.77	1.46	8.68	6.68
(ii)	Balance with Banks	804.79	1,392.02	1,104.51	523.96
(ii)	Fixed deposit with banks	4,090.09	2,407.77	1,177.78	1,026.94
	Total	**4,896.65**	**3,801.25**	**2,290.97**	**1,557.58**

13. Current Tax Assets

(Rs. in Million)

Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
Advance Income Tax (Net of Provisions)	1,026.65	517.05	180.86	54.25
Total	**1,026.65**	**517.05**	**180.86**	**54.25**

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

Note 14: Equity Share Capital

(Rs. in Million)

Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
Authorised shares				
25500000 Equity Shares of Rs.10 Each (25500000 Equity Shares of Rs.10 Each as on 31st March 2020) (22660800 Equity Shares of Rs.10 Each as on 31st March 2019) (27160800 Equity Shares of Rs.10 Each as on 31st March 2018)	255.00	255.00	226.61	271.61
Total	**255.00**	**255.00**	**226.61**	**271.61**
Issued, subscribed and fully paid-up shares				
2,10,28,431 Equity Shares of Rs.10 Each	210.28			
(2,10,28,431 Equity Shares of Rs.10 Each)		210.28		
(2,23,59,800 Equity Shares of Rs.10 Each)			223.60	
(2,65,40,644 Equity Shares of Rs.10 Each)				265.41
Total	**210.28**	**210.28**	**223.60**	**265.41**

a) Terms/rights attached to equity shares

The trust group has only one class of shares referred to as equity shares having a face value of Rs.10 each. Equity holder of equity shares is entitled to one vote per share

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

15. Other equity

(Rs.in Million)

Particulars	Securities Premium	Loan Redemption Reserve	Retained Earnings	Total
Balance as on 31 March 2017	**1,725.42**	**-**	**(1,339.37)**	**386.05**
Total comprehensive income for the period 31st March 2018	-	-	-	-
Profit or (loss)	-	-	(1,116.44)	(1,116.44)
Excess Income Tax Provision Written off	-	-	2.69	2.69
Issue of Shares	1,079.02	-	-	1,079.02
Balance as on 31 March 2018	**2,804.44**		**(2,453.12)**	**351.32**

(Rs.in Million)

Particulars	Securities Premium	Loan Redemption Reserve	Retained Earnings	Total
Balance as on 31 March 2018	**2,804.44**	**-**	**(2,453.12)**	**351.32**
Profit or (loss) for the year			(548.19)	(548.19)
Excess Income Tax Provision Written off				-
Issue of Shares/adjustement	(2,158.19)			(2,158.19)
Balance as on 31 March 2019	**646.25**		**(3,001.31)**	**(2,355.06)**

(Rs.in Million)

Particulars	Securities Premium	Loan Redemption Reserve	Retained Earnings	Total
Balance as on 31 March 2019	**646.25**		**(3,001.31)**	**(2,355.06)**
Profit or (loss) for the year			1,268.86	1,268.86
Transfer to Loan Redemption Reserve		445.77	(445.77)	-
Securities Premium	143.00	-	-	143.00
Excess Income Tax Provision Written off				-
Issue of Shares	(774.53)	-	-	(774.53)
				-
Balance as on 31 March 2020	**14.72**	**445.77**	**(2,178.21)**	**(1,717.73)**

(Rs.in Million)

Particulars	Securities Premium	Loan Redemption Reserve	Retained Earnings	Total
Balance as on 1st April 2020	**14.72**	**445.77**	**(2,178.21)**	**-1,717.73**
Profit or (loss) for the period			2,911.12	2,911.12
Transfer to Loan Redemption Reserve		1,346.40	(1,346.40)	-
Excess Income Tax Provision Written off	-	-	-	-
Issue of Shares	-	-	-	-
				-
Balance as on 31 December 2020	**14.72**	**1,792.17**	**(613.49)**	**1,193.39**

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

16. Borrowings

(Rs. in Million)

	Particulars	As at 31-12-2020	As at 31-03-2020	As at 31-03-2019	As at 31-03-2018
	Non-current				
(a)	**Secured**				
a.1	**Debentures**	933.33	1,000.00	-	-
a.2	**Term loans**				
	From Banks	40,250.35	41,665.46	40,787.07	27,123.84
	From Other Parties	71.43	731.14	785.80	235.43
Less:	Current maturities of non-current borrowings disclosed under the head 'Other financial liabilities - Current' (Refer note 18)	(3,801.06)	(2,261.48)	(1,517.56)	(953.72)
	Non-current borrowings	**37,454.05**	**41,135.11**	**40,055.31**	**26,405.55**
(a)	**Unsecured**				
	Others*	10,949.37	10,739.70	10,815.74	6,940.73
	Current borrowings	**10,949.37**	**10,739.70**	**10,815.74**	**6,940.73**
	Total borrowings	**48,403.42**	**51,874.81**	**50,871.05**	**33,346.28**

*Includes amount payable to related parties of Rs. 10,060.32 million for the period ended on 31st December 2020
*Includes amount payable to related parties of Rs. 9,466.66 million for the financial year ended on 31st March 2020
*Includes amount payable to related parties of Rs. 8,145.45 million for the financial year ended on 31st March 2019
*Includes amount payable to related parties of Rs. 3,216.16 million for the financial year ended on 31st March 2018

17. Trade Payables

(Rs. in Million)

	Particulars	31-Dec-20	31-Mar-20	31-Mar-19	31-Mar-18
	Non Current				
(a)	total outstanding dues of micro and small enterprises				
(b)	total outstanding dues of creditors other than micro and small enterprises		-	150.78	0.71
	Total Non-Current	-	-	150.78	0.71
	Current				
(a)	total outstanding dues of micro and small enterprises	-	-	-	-
(b)	total outstanding dues of creditors other than micro and small enterprises	2,490.90	3,296.10	4,898.01	3,525.50
	Total current	**2,490.90**	**3,296.10**	**4,898.01**	**3,525.50**

DBL Ashoknagar-Vidisha Tollways Limited

- Term Loan is secured by a first charge by way of mortgage on the company's all immovable assets 'and first charge by way of hypothecation on all movable assets, First charge on all Intangible assets, on all Bank Account, All Company Rights, On all Toll Collection Rights and Annuity 'personal Guarantee of all Directors and Corporate Guarantee of M/s Dilip Buildcon Limited.
- The above loan is also secured by pledge of equity shares aggregating to 51% of paid up share capital of the company with State Bank of India.
- The above loan carry interest rates of 9.90% p.a.. The loans is repayable in 24 unequal half yearly installments, interest is charged and repayable monthly.
- The above loans is secured by Corporate Guarantee of Dilip Buildcon Limited and Shrem Roadways Private Limited and Personal Guarantee of Seema Suryavanshi (Director), Dilip Suryavanshi, and Devendra Jain (erstwhile Directors)

DBL Bankhlafata-Dogawa Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- Pledge of equity shares aggregating to 30% of paid up equity share capital of the borrower.
- The above loan carry interest rate of 9.25% p.a. The loan is repayable in 24 unequal half yearly installments, with interest charged and repayable monthly.
- The above loans are secured by personal Guarantee of Dilip Suryawanshi, Seema Suryawanshi and Devendra Jain, Nitan Chhatwal and Hitesh Chhatwal

DBL Betul-Sarni Tollways Limited

- The above loan is secured by first mortgage of all immovable assets , hypothecation of all movable assets, first charge on all Intangible assets, Bank Account, company's rights, assignment of Contractors Guarantee, Liquidated damages, LC, Guarantee, Toll Collection Rights and Annuity
- Pledge of equity shares, but not less than 30% of total equity shares issued by the company
- The above loans carry interest rates ranging from 8.50% to 11.00% p.a. The loans are repayable in unequal half yearly installments- number of instalments ranging from 24-25, with interest is charged and repayable monthly.
- The above loan is secured by corporate guarantee of Dilip Buildcon Limited and Personal Guarantee of Seema Suryavanshi (Director), Dilip Suryavanshi & Devendra Jain (erstwhile Director)

DBL Hassan- Periyapatna Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- Pledge of equity shares aggregating to 26% of paid up equity share capital of the borrower.
- The above loans carry interest rates ranging from 7.90% to 9.30% p.a. The loans are repayable in 24 unequal half yearly installments, with interest charged and repayable monthly.
- The loan is also secured by Personal guarantee of Dilip Suryavanshi and Devendra Jain.

DBL Hata Dargawon Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- Pledge of equity shares aggregating to 30% of paid up equity share capital of the borrower.
- The above loans carry interest rate of 8.70% p.a. The loans are repayable in 25 unequal half yearly installments, with interest charged and repayable monthly.
- The above loan is secured by Corporate Guarantee of Dilip Buildcon Limited and personal guarantee of Dilip Suryavanshi, Seema Suryavanshi and Devendra Jain (erstwhile Directors) .

DBL Hirekerur Ranibennur Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- Pledge of equity shares aggregating to 30% of paid up equity share capital of the borrower.
- The above loans carry interest rate ranging from 10.20% to 10.35% p.a. The loans are repayable in unequal half yearly installments, with interest is charged and repayable monthly.
- The above loan is secured by Personal Guarantee of Mr Dilip Suryavanshi and Mr Devendra Jain (erstwhile directors)
- The above loan is secured by giving performance Bank Guarantee amounting to Rs 1100 lakhs created in the favour of Karnataka Road Development Corporation Ltd

Jalpa Devi Tollways Limited

- The concern has taken consortium finance of Rs 654 Cr from Six Banks. Out of this Rs 653.99 Cr has been disbursed
- Details of terms of repayment and securities provided in respect of secured term loans are as under:
  Pari passu charge by the way of mortgage of entire immovable property, first pari passu charge by the way of hypothecation of entire movable assets, all bank accounts, all intangible assets, all rights, title and interest. The loan is also secured by pledge of 51% of equity share of the borrower to IDBI trusteeship services ltd by the sponsor company. The loan is also secured personal guarantee of main promoters of shrem group i.e. Nitan chhatwal and hitesh chhatwal. Further more, loan is secured by Corporate guarantee of Dilip Buildcon Ltd and Shrem Infrastructure pvt ltd The above loans carry interest rates ranging from 9.20% to 10.50% p.a.

DBL Jaora-Sailana Tollways Limited

- Term Loan is secured by way of Pari-passu charge on all the immovable properties, intangible assets,bank accounts and first charge by way of hypothecation/mortgage on the company's all movable properties and assets both present and future other than the assets forming part of the Project Asset
- The above loan is secured by Personal guarantee of Dilip Suryavanshi, Seema Suryavanshi, Devendra Jain, Nitin Chhatwal and Hitesh Chhatwal and Corporate guarantee of Dilip Buildcon Limited.
- The above loan carry interest rate at 9.15% p.a.. The loan is repayable in 24 unequal half yearly installments, interest is charged and repayable monthly.
- The above loan is also secured by pledge of equity shares aggregating to 30% of paid up share capital of the company with PNB Services.

DBL Kalmath Zarap Highways Limited

- Lien over all Bank Accounts of borrower including Escrow Accounts, first charge on all titles, rights, interest, benefits claim and demandsin the Project Documents, Insurance Contracts, all government approvals, first charge on company's all immovable assets, hypothecation of all movable assets, intangible assets, pledge of 30% equity shares of project company, corporate guarantee of DBL, personal guarantee of Dilip Suryavanshi, Seema Suryavanshi and Devendra Jain.
- The loan is secured by Immovable and Movable Assets (other than the assets forming part of the project assets as defined in the concession agreement), immovable assets (if any) of the company and first charge by way of hypothecation of all movable assets (including but not limited to all current/ non- current asstes) both present and future other than the asset forming part of the Project Assets as defined in the Concession Agreement, all accounts inclusinf Escrow Account and the Sub Accounts and intangible assets.
- The above loan carry interest rate at 8.75% p.a. The loan is also secured by corporate gurantee of Dilip Buildcon Ltd. And personal guarantee of Mr. Dilip Suryavanshi, the managing director of the company, Mrs. Seema Suryavanshi, the whole time director and Mr. Devendra Jain, CEO of the company

DBL Lucknow Sultanpur Highways Limited

- Primary Security:Term Loan is secured by way of First charge on all immovable properties, movable properties(both present and future), all bank accounts, all revenues and receivables, all rights, titles and interest of borrower related to the project, first charge on all intangible assets of the borrower company and pledge of 51% of the paid up equity shares held by the sponsors in the Borrower.
- The above loan carry interest rate at 8.00% p.a..
- Collateral Security: Personal Guarantee of Dilip Suryavanshi, Seema suryavanshi, Devendra jain, Nitan Chhatwal and Anjali Chhatwal
- Corporate Guarantee: Dilip buildcon Ltd and Shrem Infraventure Private Limited

DBL Mahagaon Yavatmal Highways Private Limited

- The holding company has pledged 51% shares with Axis Trustee Services Ltd & given an undertaking for non disposal of 51% shares during the currency of the loan in addition to pledged shares in pursuant to terms of borrowings availed by the company.
- The above loans carry interest rates ranging from 10.25% to 10.70% p.a.
- The loan is secured by Immovable and Movable Assets (other than the assets forming part of the project assets as defined in the concession agreement), immovable assets (if any) of the company and first charge by way of hypothecation of all movable assets (including but not limited to all current/ non- current asstes) both present and future other than the asset forming part of the Project Assets as defined in the Concession Agreement, all accounts inclusinf Escrow Account and the Sub Accounts and intangible assets.
- The loan is also secured by corporate guarantee of Dilip Buildcon Ltd up to first annuity.

DBL Mundargi Harapanahalli Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- Pledge of equity shares aggregating to 30% of paid up equity share capital of the borrower.
- The above loans carry interest rate 8.70%. The loans are repayable in 14 unequal half yearly installments,with interest charged and repayable monthly.
- The loan is secured by Personal guarantee of Dilip Suryavanshi and Devendra Jain (erstwhile Directors)

DBL Mundi Sanawad Tollways Limited

- Primary Security-Term Loan is secured by a first charge by way of mortgage on the company's all immovable assets, intangible assets, bank accounts and all company rights and first charge by way of hypothecation on all movable assets.
- The above loan is secured by personal Guarantee of Dilip Suryavanshi, Seema Suryavanshi, Devendra Jain, Nitan Chhatwal and Hitesh Chhatwal and Corporate Guarantee of Dilip Buildcon Limited.
- The above loan is Collateral Security-Pledge of 30% equity shares of project company PNB Investment Services
- The above loan carry interest rate 9.25% p.a.. The loan is repayable in 23 unequal half yearly installments, interest is charged and repayable monthly.
- DSRA has been created in the form of Bank Guarantee (BG) amounting Rs. 800 lakhs issued on 11 April, 2014 by Dilip Buildcon Limited.

DBL Nadiad Modasa Tollways Limited

- The term Loan is secured by a first charge by way of mortgage on the company's all immovable assets, intangible assets, bank accounts and all company rights and first charge by way of hypothecation on all movable assets.
- Pledge of equity shares aggregating to 30% of paid up equity share capital of the borrower.
- The above loans carry interest rate of 9.50% p.a..The loans are repayable in 17 unequal half yearly installments, interest is charged and repayable monthly.
- The above loan is also secured by personal Guarantee of Dilip Suryavanshi, Seema Suryavanshi, Devendra Jain (erstwhile Directors), Nitan Chhatwal and Hitesh Chatwal.

DBL Patan Rehli Tollways Limited

- The term loan is secured by First pari-pasu charge on all Immovable and Movable Properties, all bank accounts, all revenue & receivables (including the annuities), book debts, operating cash flows, commission or revenues of whatever nature, all rights, title and interest of borrower related to projects and contracts, insurance and licenses, all Intangible asset except project assets.
- The above loan is also secured by pledge of equity shares aggregating to 51% of paid up share capital of the company.
- The above loans carry interest rates ranging from 9.30% to 10.15% p.a. The loans are repayable in 25 unequal half yearly installments, with interest charged and repayable monthly.
- The above loan is secured by Corporate Gurantee of Dilip Buildcon Limited and Personal Gurantee of Dilip Suryvanshi, Seema Suryavanshi and Devendra Jain

DBL Sardarpur Badnawar Tollways Limited

- The holding company has pledged 30% shares with PNB Investment Services Ltd .
- The loan is secured by Immovale and Movable Assets (other than the assets forming part of the project assets as defined in the concession agreement).
- The loan is secured by a first mortgage on all immovable assets (if any) of the company and first charge by way of hypothecation of all movable assets (including but not limited to all current/ non-current asstes) both present and future other than the asset forming part of the Project Assets as defined in the Concession Agreement.
- The above loan carry interest rate 9.25 % p.a.. The loan is repayable in 22 unequal half yearly installments, interest is charged and repayable monthly.
- The loan is also secured by personal guarantee of Mr. Dilip Suryavanshi, Mrs. Seema Suryavanshi, Mr. Devendra Jain, Mr. Nitan Chhatwal and Hitesh Chhatwal.

DBL Silwani - Sultanganj Tollways Limited

- The holding company has pledged 30% shares with PNB Investment Services Ltd.
- The loan is secured by Immovale and Movable Assets (other than the assets forming part of the project assets as defined in the concession agreement).
- The above loans carry interest rate 9.25% p.a. The loan is repayable in 21 unequal half yearly installments, interest is charged and repayable monthly.
- The loan is secured by a first mortgage on all immovable assets (if any) of the company and first charge by way of hypothecation of all movable assets (including but not limited to all current/ non-current asstes) both present and future other than the asset forming part of the Project Assets as defined in the Concession Agreement.
- The loan is also secured by personal guarantee of Mr. Dilip Suryavanshi, Mrs. Seema Suryavanshi, Mr. Devendra Jain Mr. Nitan Chhatwal and Mr. Hitesh Chhatwal.
-

DBL Sitamau- Suwasara Tollways Limited

- The holding company has pledged 30% shares with PNB Investment Services Ltd .
- The loan is secured by Immovale and Movable Assets (other than the assets forming part of the project assets as defined in the concession agreement).
- The above loans carry interest rate 9.10% p.a. The loan is repayable in 22 unequal half yearly installments, interest is charged and repayable monthly.
- The loan is secured by a first mortgage on all immovable assets (if any) of the company and first charge by way of hypothecation of all movable assets (including but not limited to all current/ non-current asstes) both present and future other than the asset forming part of the Project Assets as defined in the Concession Agreement
- The loan is also secured by personal guarantee of Mr. Dilip Suryavanshi, Mrs. Seema Suryavanshi, Mr. Devendra Jain, Mr. Nitan Chhatwal and Mr. Hitesh Chhatwal.
-

DBL Tikamgarh- Nowgaon Tollways Limited

- Term Loan is secured by First charge on all Bank Account, All Company Rights and assignment of guarantees, liquidated damages, letters of Credit, performance bonds and On Toll Collection Rights and Annuity.
- Pari Pasu charge by way of pledge of 100% equity share of the company.
- The above loans carry interest rate 8.50% p.a.. The loans are repayable in 24 unequal half yearly installments, interest is charged and repayable monthly.
- The above loan is secured by Corporate Guarantee of Dilip Buildcon Limited, Shrem Roadways Private Ltd and Personal Guarantee of , Seema Suryavanshi (Director), Dilip Suryavanshiand Devendra Jain (erstwhile Directors).

DBL Tuljapur Ausa Highways Limited

- Primary Security:Term Loan is secured by way of First charge on all immovable properties, movable properties(both present and future), all bank accounts, all revenues and receivables, all rights, titles and interest of borrower related to the project, first charge on all intangible assets of the borrower company and pledge of 51% of the paid up equity shares held by the sponsors in the Borrower.
- The above loan carry interest rate of 8% p.a.
- The loan is secured by corporate gurantee of Dilip Buildcon Ltd. And personal guarantee of Mr. Dilip Suryavanshi, the managing director of the holding company, Mrs. Seema Suryavanshi, the whole time director of the holding company and Mr. Devendra Jain, CEO of the holding company

DBL Uchera-Nagod Tollways Limited

- Term Loan is secured by a first charge by way of mortgage on the company's all immovable assets, intangible assets and bank accounts, all company Rights and first charge by way of hypothecation on all movable assets.
- Pledge of 30% of equity shares of company with PNB Investment Services.
- The above loan carry interest rate 9.50% p.a . The loan is repayable in 24 unequal half yearly installments, interest is charged and repayable monthly.
- The above loan is secured by Personal Guarantee of Dilip Suryavanshi, Seema Suryavanshi, Devendra Jain, Nitan Chhatwal and Hitesh Chhatwal and Corporate Guarantee of Dilip Buildcon Limited.
- DSRA has been created in the form of Bank Guarantee (BG) of Rs. 868.00 lakhs issued on 18 February, 2015 by Dilip Buildcon Limited.
-

DBL Wardha Butibori Highways Private Limited

- The holding company has pledged 26% shares with Indian Bank.
- DBL Wardha Butibori Highways Pvt Ltd. has Created Charges amount of Rs.390.13 Cr. in favore of Indian Bank
- Primary Security: Term Loan is secured by way of First charge on all immovable properties & movable properties (both present and future), save and except Project Assets, all bank accounts, all revenues and receivables, all rights, titles and interest of borrower related to the project.
- The above loan carries interest rate of 8.00% p.a.
- The loan is also secured by corporate gurantee of Dilip Buildcon Ltd and personal guarantee of Mr. Dilip Suryavanshi, the managing director of the company, Mrs. Seema Suryavanshi, the whole time director and Mr. Devendra Jain, CEO of the company
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DBL Yavatmal Wardha Highways Private Limited

- The holding company has pledged 26% shares with PNB Investment Services Limited.
- **Charge on Security :** DBL Yavatmal Wardhar Highways Ltd. has Created Charges amount of Rs.360.42 Cr. in favore of PNB Investment Trustee
- **Primary Security:** Term Loan is secured by way of First charge on all immovable properties & movable properties (both present and future), save and except Project Assets, all bank accounts, all revenues and receivables, all rights, titles and interest of borrower related to the project.
- The above loan carries interest rate of 7.95% p.a.
- The loan is also secured by corporate guarantee of Dilip Buildcon Limited (holding company), Shrem Infraventure Private Limited and personal guarantee of Mr. Dilip Suryavanshi, the managing director of the holding company, Mrs. Seema Suryavanshi, the whole time director of the holding company, Mr. Devendra Jain, whole time director of the holding company, Mr. Nitan Chhatwal director of the Shrem Infraventure Private Limited and Mr. Hitesh Chhatwal promotor of Shrem Infraventure Private Limited.

Shrem Infraventures Private Limited

- The company has taken interest free loan from related parties and no repayment schedule has been specified by the company.

Shrem Roadways Private Limited

- Rate of Interest is 11 % Papm linked to 3months MCLR of RBL Bank and The Loan shall be repaid in 28 structured quarterly installments as per bellow schedule
- The RTL facility (together with all interest, liquidity damages, fee, costs, charges, expenses and other monies payable to the lender(s) shall be secured in a form and manner satisfactory to the Lender(s) by following securily to be created in favour of Security Trustee :
- Exclusive first charge over all current & future movable & immovable assets, current & non-current assets, investments and loan & advances of Borrower.
- Exclusive first charge over all current & future Borrower's operating cash flows, receivables, commissions, revenues of whatsoever nature and wherever arising, intangibles, uncalled capital.
- Exclusive first charge by way of assignment or hypothecation in favor of the Lender(s) of:
-
  a) All the right, title, interest, benefits. claims and demands whatsoever of the Borrower, duly acknowledged and consented to by the relevant counter-parties to such documents, all as amended, varied or supplemented from time to time.
  b) All the right title, interest, benefits, claims and demands whatsoever of the Borrower in any letter of credit, guarantee, performance bond provided by any party to the Documents.
  c) All Insurance Contracts/lnsurance Proceeds.
  d) All rights, documents etc. under contractual agreement with Dilip Buildcon for the underlying l7 SPVs.
- Exclusive charge over loans and advances infused by SRPL into the SPVs to provide minimum I x cover of the RTL facility.
- Subservient charge over all current and future movable and immovable assets, current and non-current assets, investments and loans and advances of all the I7 SPV listed in document.
- 60% pledge and 40% Non-Disposable Undertaking ("NDU") of equity/quasi equity/ sponsor funds of SRPL infused by promoters.
- 49% Pledge of equity/quasi equity/ sponsor funds of all l7 SPVs to be bought under SRPL. In the event if the consortium lenders of respective SPVs agree to take shares pledged lesser than 5l%, percentage of NDU shall increase proportionately.
- 8. 26% pledge of equity/quasi equity/sponsor funds infused by the promoter in Shrem Infraventures Pvt Ltd ("SlPL"). The pledge to be released by RBL Bank, only if Sponsor is required to provide more than 74% of pledge towards raising any funds at SIPL level.
- Exclusive charge on Escrow/current Account, Debt Service Reserve Account and other reserves and any other bank accounts of the Borrower, wherever maintained.
- Assignment/charge over Corporate Guarantee and /or Performance guarantee/ security deposit of Dilip Buildcon Limited ("DBL") provided to Shrem Group, especially towards O&M contract for l7 SPVs.
- 28 Undated cheques for each quarterly principal and monthly interests amounts.
- Unconditional and irrevocable Personal Guarantee of Mr Nitan Chhatwal & Mr Hitesh Chhatwal and Mrs. Smita Chhatwal (upto the extent of the value of the property), Corporate Guarantee from Chatwal Group Trust, Shrem Life Care Pvt Ltd (holding company of SRPL) and any other intermediary holding Companies of SRPL.
- First and exclusive charge over Land of Goa (Survey No. 140/6, 139/l (part), 142/3, 139/4, Morado,Village Candolim, Tal: Bardez; North Goa District) and Flat located at Juhu, Mumbai ((Flat no 501 and 601, Magan Villa,.Juhu)) (or any other property of equivalent value) with valuation acceptable to RBL for minimum 50% of the Facility Amount. PG/CG of the owner of the property offered as security (value to the extent of the property). The loan disbursement will be proportionate to the maximum 2 times of the value of the said security provided. In case the stipulated security is not perfected within the stipulated timeline, Borrower to replace the security within l0 working days with equivalent value, as acceptable to Lenders.
- Pledge over stake of Chhatwal Group in Partnership with Embassy group for the project in Bangalore and charge over profit from the said project available to Chaatwal Group.
- Board resolution backed Letter of Comfort ("LOC") from SIPL in a form and manner acceptable to Lenders.

Shrem Tollways Private Limited

For Secured Debentures,
The Outstanding Amounts together with all other amounts due and payable to the Debenture Holders, their trustees and agents, all fees, costs, charges, expenses and all amounts payable to the Debenture Holders and Debenture Trustee (including but not limited to outstanding remuneration of the Debenture Trustee, if any) under the Debenture Documents shall be secured in favour of the Debenture Trustee in form, substance and manner acceptable to the Debenture Holders, by:

- An exclusive first ranking charge by way of mortgage of Issuer's all immovable properties, present and future;
- An exclusive first ranking charge by way of hypothecation on all of Issuer's movable properties including plant and machinery, machinery spares, equipments, tools and accessories, furniture, fixtures, vehicles, stocks and all other movable assets, present and future and also exclusive first charge by way of hypothecation/ assignment of all the present and future book debts, cash flows, bills, receivables, revenues, monies including Escrow Accounts, claims of all kinds and stocks including consumables and other general stores;
- A first ranking charge by way of mortgage over immoveable property (land and building) acceptable to the Debenture Holders/Debenture Trustee including properties located at (a) Plot no 2, The New India Cooperative Housing Society Limited, Sanjiv, 12th Road, JVPD Scheme, Vile Parle (West), Mumbai - 400 049, currently leased in favour of Mr. Nitan Chhatwal; (b) survey No. 140/1, 140/2, 146/5 & 146/6 Murad Wado, Candolim, Bardez North Goa, Goa owned by Sham Resort Hotels Private Limited, a company incorporated under the Companies Act, 1956 with its corporate identity number U55101MH1980PTC256699 and having its registered office at 1101, Viraj Towers, Junction of Andheri Kurla W.E. Highway, Andheri (East) Mumbai – 400069, Maharashtra; and (c) Khopoli owned by Shrem Construction Private Limited, a company incorporated under the Companies Act, 1956 with its corporate identity number U45200MH2010PTC202154 and having its registered office at 1101, Viraj Towers, Junction of Andheri Kurla W.E. Highway, Andheri (East) Mumbai – 400069, Maharashtra ("Sham Resort") with a minimum aggregate value of Rs. 200,00,00,000 (Rupees Two Hundred Crores) to be maintained at all times; and (d) property known as 'Penha De Franca' alias 'Virlosa Bhat' situated in the Village Serula and Parish of Penha-De-Franca, presently identified as Village Penha-De-Franca, inscribed in the land Matriz owned by Shrem Properties Private Limited, a company incorporated under the Companies Act, 1956 with its corporate identity number U45203MH2010PTC206446 and having its registered office at 1101, Viraj Towers, Junction of Andheri Kurla W.E. Highway, Andheri (East) Mumbai – 400069, Maharashtra
- An exclusive first ranking charge over any contractual document(s) including O&M Contracts entered into by Issuer and/or SIPL with DBL in respect of Jalpadevi Tollways Limited ("JDTL") and HAM Companies
- A first ranking charge on –

  (a) Issuer Escrow Account (into which all surplus monies from the escrow account of JDTL and collections including all payments related to operation and maintenance of the project being implemented by JDTL shall be transferred);
  (b) (b) Shrem Infra Escrow Account (into which all collections including surplus monies from the escrow/trust and retention account of SRPL shall be transferred); and
  (c) SIPL Escrow Account (into which all surplus monies from the escrow accounts of HAM Companies and collections including all payments related to operation and maintenance of the projects being implemented by HAM Companies shall be transferred);
- A first ranking charge by way of pledge on:
  (a) 100% (one hundred percent) share capital of the Issuer;
  (b) 100% (one hundred percent) share capital of Shrem Infra;
  (c) 100% (one hundred percent) share capital of Sham Resort;
  (d) 100% (one hundred percent) share capital of Shrem Properties; and
  (e) 100% (one hundred percent) of the shares held by Mr. Nitan Chhatwal in The New India Co-

  Operative Housing Society Limited, having its registered address at "Chandrika", 12th Road, J.V.P.D. Scheme, Vile-Parle (West), Mumbai;

- A first ranking charge by way of pledge on 74% (seventy four percent) share capital of SIPL;
- A first ranking charge on the share capital (including by way of pledge) of (a) JDTL; and (b) HAM Companies, to the extent such shares are not pledged in favour of the project lenders of such Restricted Group Companies;
- A first ranking charge over any loans provided by:
- (a) CGT and other members of the Promoter Group and/or any Affiliate of the Promoters Group to Shrem Infra, Issuer, SIPL, Restricted Group Companies;
  (b) Shrem Infra to the Issuer, SIPL and Restricted Group Companies; and
  (c) Issuer and SIPL to Restricted Group Companies;

- An unconditional and irrevocable guarantee by CGT for securing the Outstanding Amounts of the Issuer;
- Unconditional and irrevocable corporate guarantees by –
- (a) Shrem Infra for securing the Outstanding Amounts of the Issuer; and
  (b) SIPL for securing the Outstanding Amounts of the Issuer;

- Unconditional and irrevocable personal guarantees from Mr. Nitan Chhatwal, Mr. Hitesh Chhatwal and Mrs. Smita Chhatwal securing the Outstanding Amounts of the Issuer
- A first ranking charge on the entire consideration payable by DBL in terms of the Shareholders and Share Subscription Agreements in the event of unwinding of the acquisition transaction;
- A first charge by way of assignment or creation of the security interest including all rights, title, interest, benefits, claims and demands whatsoever of the Shrem Group over corporate guarantee and/or performance guarantee/security deposit furnished by DBL in favour of Shrem Group, especially towards O&M Contract for the project being implemented by the Restricted Group Companies;
- A first ranking charge on the O&M Contracts and O&M Sub-Contracts executed in relation to the projects being implemented by the Restricted Group Companies;
- A first ranking charge on the receivables/revenues of the Issuer and SIPL from operation and maintenance of the respective projects being implemented by the Target Companies;
- A joint, several, unconditional and irrevocable guarantees by the Promoter Group and other Affiliates of the Promoter Group providing corporate guarantee(s) for securing the Outstanding Amounts of the Issuer;
- A first ranking charge on -
  (a) any loans provided by Promoter Group to DBL in respect of any of the HAM Companies; and
  (b) any loans provided by the Promoter Group and/or any Affiliates of the Promoter Group to any of the HAM Companies; and
- An unconditional and irrevocable corporate guarantee securing the Outstanding Amounts of the Issuer by Shrem Investments.
- According to Companies (Share Capital and Debentures) Rules, 2014, As per sub rule (7) of Rule 18, company need to comply with the requirements with regard to Debenture Redemption Reserve (DRR) and Debenture Redemption Reserve shall be created out of profits of the company available for payment of dividend. As per the rule the adequacy of Debenture Redemption Reserve shall be 10% of the value of the outstanding debentures. So it is the statutory requirement for the company to create DRR of Rs.10 Crore (10% of Rs.100 Crore). However, during the period ended December 31, 2020 the company has incurred loss and does not have adequate profit to create Debenture Redemption Reserve. The company ensure that whenever company generate adequate profit, company shall create Debenture Redemption Reserve.
- According to Companies (Share Capital and Debentures) Rules, 2014, As per sub rule (7) of Rule 18, company need to comply with the requirements with regard to investment or deposit of sum in respect of debentures maturing during the year ending on the 31st day of March of next year. Accordingly Rs.10 Crore of Debentures will be maturing during the financial year 2020-21 and company is required to invest or deposit of Rs.1.5 Crore (15% of 10 Crore). Company has already created FD with HDFC Bank of Rs. 38 Crore which include deposit of Rs.1.5 Crore.

18. Other financial liabilities

(Rs. in Million)

	Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
	Non Current				
(a)	Security Deposit	943.90	1,057.50	705.22	725.33
(b)	Deferred Income	-	-	303.68	441.26
	Total	**943.90**	**1,057.50**	**1,008.90**	**1,166.59**
	Current				
(a)	Current maturities of long term borrowings (refer Note 16)				
	From Banks	3,801.06	2,261.48	1,517.56	953.72
(b)	Interest on loan	-	13.24	-	-
(c)	Creditors for expenses *	15.85	72.62	105.98	29.73
(d)	Statutory Dues	6.88	2.80	-	-
(e)	Book overdraft	-	-	-	0.30
(f)	Deferred Income	-	-	81.10	83.41
(g)	Creditors for capital assets	0.18	0.17	-	3.31
	Total	**3,823.97**	**2,350.32**	**1,704.64**	**1,070.47**
	Grand Total	**4,767.87**	**3,407.82**	**2,713.54**	**2,237.06**

*Includes amount payable to related parties of Rs. 60.89 million for the financial year ended on 31st March 2020
*Includes amount payable to related parties of Rs. 9.95 million for the financial year ended on 31st December 2020

19. Provisions

(Rs. in Million)

	Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
	Non-current				
(a)	Provision for employee benefits		-	-	17.10
(b)	Provision for major maintenance	1,421.98	947.66	510.79	35.49
(c)	Provision for O&M	-	-	-	-
	Total	**1,421.98**	**947.66**	**510.79**	**52.59**
	Current				
(a)	Provision for employee benefits	0.06	0.11	0.14	0.16
(b)	Other Provisions	355.14	162.68	0.97	-
	Total	**355.20**	**162.79**	**1.11**	**0.16**
	Grand Total	**1,777.18**	**1,110.45**	**511.90**	**52.75**

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

Note 20: Deferred Tax

(Rs. in Million)

Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
Deferred Tax Liabilities				
Plant & Machinery, Equipment, Furniture & Fixtures Etc.	(0.05)	-	(0.01)	(464.68)
Trade Receivable	-	-	-	(4,213.56)
CWIP	-	-	-	(1,406.70)
Other Liability	(47.27)	(37.23)	(103.03)	(29.18)
Others	-	(7.22)	-	-
Amortisation of Processing fees	-	-	(2.42)	(24.89)
On account of service concession arrangement	-	-	-	(0.09)
Total Deferred Tax Liabilities	**(47.32)**	**(44.45)**	**(105.46)**	**(6,139.10)**
Deferred Tax Assets				
Plant & Machinery, Equipment, Furniture & Fixtures Etc.	0.05	0.05	0.03	5,093.97
Preliminary Expenses		-	-	0.01
Major Maintenance Expenses		-	4.33	11.23
Other Liability		-	40.96	0.24
Others	0.02	-	0.66	-
Provisions which are deductable in Future as per IT		-	-	0.04
DTA for losses brought forward from previous year and carried forward to next year		-	-	205.26
Total Deferred Tax Assets	**0.07**	**0.05**	**45.98**	**5,310.75**
Net DTA (DTL) as on	**(47.24)**	**(44.40)**	**(59.48)**	**(828.35)**

Deferred tax expenses/ (Income)

(Rs. in Million)

Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
- Recognised in statement of profit and loss	2.84	(15.08)	(768.87)	752.64
- Recognised in statement of other comprehensive income	-	-	-	-
Total	**2.84**	**(15.08)**	**(768.87)**	**752.64**

21. Other liabilities

(Rs. in Million)

	Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
	Non Current				
(a)	Statutory Dues	-	-	-	0.02
	Total	**-**	**-**	**-**	**0.02**
	Current				
(a)	Advances from customers	-	0.01	36.36	812.96
(b)	Mobilisation Advance	-	-	684.77	3,254.10
(c)	Interest on Mobilisation Advance	-	-	37.25	11.82
(d)	Retention money	1.80	39.91	55.18	123.15
(e)	Others		1.91	-	0.80
(f)	Statutory Dues	0.24	22.84	805.86	202.96
(g)	Security deposits	-	-	-	3.19
(h)	Amounts withheld from Contractor	48.77	46.61	9.64	55.59
	Total	**50.81**	**111.28**	**1,629.06**	**4,464.58**

22. Revenue from Operations

(Rs. in Million)

Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a) Toll Plaza Receipts	1,143.40	1,422.16	1,099.79	305.11
(b) Contract Revenue	408.40	4,091.56	33,180.37	21,992.12
(c) Contract Recipts (Utility Shifting)	469.83	805.96	1,519.90	968.43
(d) Income from Change in Scope	452.70	109.60	-	-
(e) Interest Income from NHAI / MoRTH	2,517.77	1,796.32	-	-
(f) Finance Income	3,752.38	3,881.66	2,527.38	1,990.12
Other operating revenue	-	-	-	-
(a) Bonus For Early Completion	-	679.56	-	636.30
(b) Operation & Maintanance	160.46	73.72	-	-
(c) Others	-	-	5.77	-
Total	**8,904.94**	**12,860.54**	**38,333.21**	**25,892.08**

23. Other Income

(Rs. in Million)

Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(i) Interest Income				
(a) Interest from banks on deposits	126.56	100.03	57.82	16.86
(b) Interest on Deposits with others	-	-	0.06	1.67
(c) Interest on Income tax refund	6.85	1.76	7.33	0.29
(ii) Other non-operating income				
(a) Deferred Income on Deposits	-	-	89.24	-
(b) Profit on sale of Mutual Funds	9.07	4.79	2.02	20.75
(c) Others	24.45	4.95	198.23	0.29
Total	**166.93**	**111.53**	**354.70**	**39.86**

24. Cost of Construction

(Rs. in Million)

Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a) Technical and Consultancy Charges	0.10	0.42	1.46	5.80
(b) Cost of Construction	410.16	4,091.56	33,180.37	22,043.93
(c) Subcontractor Charges (utility)	450.83	801.82	1,522.63	915.87
(d) Change in Scope- Expenses	452.44	23.66	-	-
(e) Independent Engineer Fees	94.08	106.29	114.91	17.39
(f) Early completion Bonus paid	4.38	679.56	-	636.30
(g) Operation & Maintenance Charges	351.58	161.68	220.50	-
Total	**1,763.57**	**5,864.99**	**35,039.87**	**23,619.29**

25. Employee Benefit Expense

(Rs. in Million)

Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a) Salaries, Wages and Bonus	8.55	11.17	5.46	29.50
(b) Contributions to PF	-	-	-	0.95
(c) Staff Welfare	0.17	0.03	-	3.31
Total	**8.72**	**11.20**	**5.46**	**33.76**

26. Finance Cost

(Rs. in Million)

	Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a)	Interest on borrowings	3,232.74	4,396.17	3,408.74	1,824.85
(b)	Interest on other financial liability	56.39	14.39	282.89	94.26
(c)	Other borrowing costs	182.97	22.04	93.15	56.44
					-
	Total	**3,472.10**	**4,432.60**	**3,784.78**	**1,975.55**

27. Depreciation and Amortisation

(Rs. in Million)

	Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a)	Depreciation on tangible assets	0.59	1.04	1.07	0.54
(b)	Amortisation on intangible assets	420.14	559.16	489.51	239.61
	Total	**420.73**	**560.20**	**490.58**	**240.15**

28. Other Expenses

(Rs. in Million)

	Particulars	For the period ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
(a)	Advertisement Charges	0.08	0.12	-	0.36
(b)	Audit Fees (Note 29)	1.31	2.13	2.42	2.11
(c)	Donation	-	-	0.45	-
(d)	Electricity Expenses	22.50	15.77	-	7.15
(e)	Establishment Expenses	2.52	3.46	3.63	3.05
(f)	Insurance Charges	52.20	(12.37)	5.94	18.57
(g)	Legal & Professional Charges	153.41	76.32	54.87	192.09
(h)	Loss on sale of mutual fund	-	5.07	-	-
(i)	Major Maintenance Expense	328.71	436.87	436.87	24.07
(j)	Other Expenses	14.65	99.07	153.87	126.80
(k)	Printing & Stationery	0.01	0.05	0.01	0.45
(l)	Rates & Taxes	3.89	6.70	17.77	28.90
(m)	Rent Paid	2.41	26.67	4.09	2.62
(n)	Repairs and Maintenance Expenses	6.75	17.44	16.95	6.47
(o)	Travelling & Convayance	0.64	2.88	2.54	2.98
	Total	**589.08**	**680.18**	**699.42**	**415.62**

COMBINED BALANCE SHEET
NOTES TO COMBINED FINANCIAL STATEMENT

Note 29: Remuneration to Auditors

(Rs. in Million)

	Particulars	For the year ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
a)	Audit Fees	1.31	2.11	2.02	2.09
b)	For other services: Certification fees / Tax Audit	-	0.02	0.41	0.02
c)	Expenses reimbursed	-	-	-	-
	Total	**1.31**	**2.13**	**2.42**	**2.11**

Note 30: Earning per Unit (Basic and diluted)

	Particulars	For the year ended December 31, 2020	For the year ended March 31, 2020	For the year ended March 31, 2019	For the year ended March 31, 2018
a)	Profit / (Loss) for the year before tax (Amount in Rs. Millions	2,911.12	1,268.86	(548.19)	(1,116.45)
b)	Weighted average number of equity shares used as denominator	Refer Note 41	Refer Note 41	Refer Note 41	Refer Note 41
c)	Basic earning per unit				
c)	Diluted earning per unit				

SHREM INVIT

NOTES TO COMBINED FINANCIAL STATEMENT

Note 31: Fair value of financial assets and liabilities

Set out below, is a comparison by class of the carrying amounts and fair value of the trust group's financial instruments that are recognised in the financial statements.

(Rs. in Million)

	Particulars	Carrying value	Fair Value	Carrying value	Fair Value	Carrying value	Fair Value	Carrying value	Fair Value
		31 December 2020	31 December 2020	31 March 2020	31 March 2020	31 March 2019	31 March 2019	31 March 2018	31 March 2018
	Financial Asset								
(a)	Carried at amortised cost								
(i)	Investment	-	-	-	-	541.02	517.66	-	-
(ii)	Trade receivable *	38,439.07	-	36,171.25	-	18,976.06	-	18,222.55	-
(iii)	Cash and cash equivalent *	4,896.65	-	3,801.25	-	2,290.97	-	1,557.58	-
(iv)	Loans	0.05	0.05	0.05	0.05	-	-	-	-
(v)	Other financial asset	2,019.52	2,019.52	1,846.50	1,846.50	10.37	10.37	9.71	9.71
	Financial Liabilities								
a)	**Carried at amortised cost**								
(i)	Borrowings	48,403.42	48,403.42	51,874.82	51,874.82	50,871.05	50,871.05	33,346.28	33,346.28
(ii)	Current maturities of long term debt	3,801.06	3,801.06	2,261.48	2,261.48	1,517.56	1,517.56	953.72	953.72
(ii)	Trade payable *	2,490.90	-	3,296.10	-	5,048.79	-	3,526.21	-
(iii)	Other financial liabilities	966.81	966.81	1,146.34	1,146.34	1,195.98	1,195.98	1,283.34	1,283.34

The trust group maintains policies and procedures to value financial assets or financial liabilities using the best and most relevant data available. In addition, the trust group internally reviews valuations, including independent price validation for certain instruments. Further, in other instances, trust group's retains independent pricing vendors to assist in corroborating the valuations of certain instruments.

The fair value of the financial assets and liabilities are included at the amount at which the instrument that would be received to sell an asset or paid to transfer liability in an orderly transaction between market participants at the measurement date.

The following methods and assumptions were used to estimate the fair values:

* The trust group has not disclosed the fair values of trade payables, trade receivables and cash and cash equivalents because their carrying amounts are reasonable approximation of fair value.

Fair value of security deposits have been estimated using a discounted cash flow model. The valuation requires management to make certain assumptions about interest rates, maturity period, credit risk, forecated cash flows.

Long-term fixed-rate and variable-rate receivables/borrowings are evaluated by the trust group is based on parameters such as interest rates, individual creditworthiness of the customer and the risk characteristics of the financed project. Based on this evaluation, allowances are taken into account for the expected credit losses of these receivables. As of reporting date the carrying amounts of such receivables, net of allowances are not materially different from their calculated fair values.

Carrying value of loans from banks, other non current borrowings and other financial liabilities is estimated by discounting future cash flows using rates currently available for debt on similar terms, credit risk and remaining maturities. The own non- performance risk as at reporting date was assessed to be insignificant.

Fair value hierarchy

The following table provides the fair value measurement hierarchy of trust group's assets and liabilities grouped into Level 1 to Level 3 as described in significant accounting policies - Note 1. Further table describes the valuation techniques used, key inputs to valuations and quantitative information about significant unobservable inputs for fair value measurements.

Quantitative disclosures fair value measurement hierarchy for assets as at 31 December 2020:

Sr. No.	Particulars			
		Level 1	**Level 2**	**Level 3**
	Assets for which fair values are disclosed			
(a)	Financial assets measured at amortised cost			
(i)	Investment		-	
(ii)	Trade receivable		38,439.07	
(iii)	Cash and cash equivalent		4,896.65	
(iv)	Loans		0.05	
(v)	Other financial asset		2,019.52	
(a)	Financial liability measured at amortised cost			
(i)	Borrowings		48,403.42	
(ii)	Current maturities of long term debt		3,801.06	
(iii)	Trade payable		2,490.90	
(iv)	Other financial liabilities		966.81	

Quantitative disclosures fair value measurement hierarchy for assets as at 31 March 2020:

Sr. No.	Particulars			
		Level 1	**Level 2**	**Level 3**
	Assets for which fair values are disclosed			
(a)	Financial assets measured at amortised cost			
(i)	Investment		-	
(ii)	Trade receivable		36,171.25	
(iii)	Cash and cash equivalent		3,801.25	
(iv)	Loans		0.05	
(v)	Other financial asset		1,846.50	
(a)	Financial liability measured at amortised cost			
(i)	Borrowings		51,874.82	
(ii)	Current maturities of long term debt		2,261.48	
(iii)	Trade payable		3,296.10	
(iv)	Other financial liabilities		1,146.34	

Quantitative disclosures fair value measurement hierarchy for assets as at 31 March 2019:

Sr. No.	Particulars			
		Level 1	**Level 2**	**Level 3**
	Assets for which fair values are disclosed			
(a)	Financial assets measured at amortised cost			
(i)	Investment		541.02	
(ii)	Trade receivable		18,976.06	
(iii)	Cash and cash equivalent		2,290.97	
(iv)	Loans		-	
(v)	Other financial asset		10.37	
(a)	Financial liability measured at amortised cost			
(i)	Borrowings		50,871.05	
(ii)	Current maturities of long term debt		1,517.56	
(iii)	Trade payable		5,048.79	
(iv)	Other financial liabilities		1,195.98	

Quantitative disclosures fair value measurement hierarchy for assets as at 31 March 2018:

Sr. No.	Particulars			
		Level 1	**Level 2**	**Level 3**
	Assets for which fair values are disclosed			
(a)	Financial assets measured at amortised cost			
(i)	Investment		-	
(ii)	Trade receivable		18,222.55	
(iii)	Cash and cash equivalent		1,557.58	
(iv)	Loans		-	
(v)	Other financial asset		9.71	
(a)	Financial liability measured at amortised cost			
(i)	Borrowings		33,346.28	
(ii)	Current maturities of long term debt		953.72	
(iii)	Trade payable		3,526.21	
(iv)	Other financial liabilities		1,283.34	

During the year ended 31 March 2018, 31 March 2019 31 March 2020 and the period ended 31 December 2020 there were no transfers between level 1 and level 2 fair value measurements and no transfers into and out of level 3 fair value measurement.

Note 32: Capital management

For the purpose of the Group trust's capital management, capital includes issued equity capital, convertible preference shares, securities premium and all other equity reserves attributable to the equity holders of the parent. The primary objective of the Group Trust's capital management is to maximise the shareholder value. `
The Group manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Group may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Group monitors capital using a gearing ratio, which is net debt divided by total capital plus net debt. The Group includes within net debt, interest bearing loans and borrowings, less cash and cash equivalents, excluding discontinued operations.

(Rs. in Million)

Particulars	31-Dec-2020	31-Mar-2020	31-Mar-2019	31-Mar-2018
Loans and borrowings	41,183.68	42,665.46	40,787.07	27,123.84
Less: Cash and cash equivalents	4,896.65	3,801.25	2,290.97	1,557.58
Net debt	**36,287.03**	**38,864.21**	**38,496.10**	**25,566.26**
Equity	1,403.67	(1,507.44)	(2,131.46)	616.72
Capital and net debt	**37,690.70**	**37,356.76**	**36,364.64**	**26,182.99**
Gearing ratio	96.28%	-	-	97.64%

Note 33: Commitments and Contingent Liabilities

(Rs. in Million)

Particulars	31-Dec-20	31-Mar-20	31-Mar-19	31-Mar-18
Capital Commitments	NIL	NIL	NIL	NIL
Contingent Laibilities	NIL	NIL	NIL	NIL

Note 34: Financial risk management policy and objectives

The key objective of the trust group's capital management is to ensure that it maintains a stable capital structure with the focus on total equity to uphold investor, creditor, and customer confidence and to ensure future development of its business. The trust group's is focused on maintaining a strong equity base to ensure independence, security, as well as financial flexibility for potential future borrowings, if required without impacting the risk profile of the Company.
Trust group's principal financial liabilities, comprise borrowings from banks, trade payables and security deposits. The main purpose of these financial liabilities is to finance trust group's operations (short term). trust group's principal financial assets include investments, security deposit, trade and other receivables, deposits with banks and cash and cash equivalents, that derive directly from its operations.
The trust group is exposed to market risk, credit risk and liquidity risk.

The trust group's senior management oversees the management of these risks. The trust group's senior management is supported by a financial risk committee that advises on financial risks and the appropriate financial risk governance framework for the trust group. The financial risk committee provides assurance to the trust group's senior management that the trust group's financial risk activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with the trust group's policies and risk objectives. All derivative activities for risk management purposes are carried out by specialist teams that have the appropriate skills, experience and supervision. It is the trust group's policy that no trading in derivatives for speculative purposes may be undertaken.
The Board of Directors reviews and agrees policies for managing each of these risks, which are summarised below.

Quantitative and Qualitative Disclosure about Market Risk

Market risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises three types of risk interest rate risk, currency risk and other price risk such as equity price risk and commodity risk. Financial instruments affected by market risk include borrowings, trade and other payables, security deposit, trade and other receivables, deposits with banks. Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates.

Credit Risk

Credit risk on trade receivables is limited as the customers of the trust group's mainly consists of the government promoted entities having a strong credit worthiness.

Liquidity risk

Liquidity risk relates to the risk that the Trust or the Project SPVs will not be able to meet its obligations associated with its financial liabilities. The Trust and the Project SPVs are exposed to liquidity risk in respect of financing arrangements and short-term and long-term investment programs mainly in their growth projects.

It is expected that the Trust, through the Investment Manager, will regularly monitor liquidity requirements to ensure that it maintains adequate means of obtaining funds necessary in order to meet liquidity requirements in the short and longer term. Further, the Trust and the Project SPVs aim to minimize the risk by generating sufficient cash flows from their current operations, cash and cash equivalents, liquid investments and by deploying a robust cash management system.

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

35.Related Parties Transactions

A. List of ralated parties of Shrem Invit

Reporting Enterprise	Shrem Invit
Parties to the InvIT	Shrem Infra Structure Private Limited (Sponsor) Shrem Financial Private Limited (Investment Manager) Axis Trustee Services Limited (Trustee)

List of related parties as on 31st March 2018

	Shrem Infra Structure Private Limited (Sponsor)	**Shrem Financial Private Limited (Investment Manager)**
Holding	Chhatwal Group Trust	
Subsidiary Companies	Shrem Tollways Private Limited Shrem Infraventure Private Limited Shrem Roadways Private Limited	Shrem Airports Private Limited
Associate Companies Associate	Radiant Life Care Mumbai Private Limited	Chhatwal Group Trust
Key Management Personnel	Krishani N Chhatwal Shyam Sunder Malani	Aditi Javanjal Shyam Sunder Malani
Relatives of Key Management Personnel	Nitan Chhatwal Hitesh Chhatwal	
Enterprises owned or significantly influenced by key management personnel or	Shrem Investments Private Limited Shrem Impex Private Limited Shrem Alloys Private Limited Shrem Constructions Private Limited	Green Cultivation Private Limited Jagdeesh Security & Services Private Limited Optimise Buildcon Private Limited Patio Construction Private Limited Shrem Accomodation Private Limited Shrem Ajanta Infrastructure Private Limited Shrem Township Development Private Limited Shrem Constructions Private Limited Shrem Farm Products Private Limited Shrem Homes Private Limited Shrem Infraventure Private Limited Shrem Hospitality Private Limited Shrem Hotels & Motels Private Limited Shrem Investments Private Limited Shrem Resorts Private Limited Shrem Slumprojects Private Limited Shrem Cultivation Private Limited Shrem Oil & Gas Private Limited Shrem Impex Private Limited Shrem Alloys Private Limited Organise Constructions Private Limited

List of related parties as on 31st March 2019

	Shrem Infra Structure Private Limited (Sponsor)	Shrem Financial Private Limited (Investment Manager)
Holding	Chhatwal Group Trust	
Subsidiary Companies	Shrem Tollways Private Limited Shrem Infraventure Private Limited Shrem Roadways Private Limited	Shrem Airports Private Limited
Associate		Chhatwal Group Trust
Key Management Personnel	Krishani N Chhatwal Shyam Sunder Malani Piyush Oza Vinay Gupta	Hitesh Chhatwal Aditi Javanjal Shyam Sunder Malani
Relatives of Key Management Personnel	Nitan Chhatwal Hitesh Chhatwal	Nitan Chhatwal
Enterprises owned or significantly influenced by key management personnel or	Shrem Investments Private Limited Shrem Impex Private Limited Shrem Alloys Private Limited Shrem Road Projects Private Limited	Shrem Investments Private Limited

List of related parties as on 31st March 2020

	Shrem Infra Structure Private Limited (Sponsor)	Shrem Financial Private Limited (Investment Manager)
Holding	Chhatwal Group Trust	
Subsidiary Companies	Shrem Tollways Private Limited Shrem Infraventure Private Limited Shrem Roadways Private Limited	Shrem Airports Private Limited
Associate		Chhatwal Group Trust
Key Management Personnel	Nitan Chhatwal Smita N Chhatwal Krishani N Chhatwal Shyam Sunder Malani Piyush Oza	Nitan Chhatwal Aditi Javanjal Shyam Sunder Malani
Relatives of Key Management Personnel	Hitesh Chhatwal	Hitesh Chhatwal
Enterprises owned or significantly influenced by key management personnel or	Shrem Investments Private Limited Shrem Road Projects Private Limited Shrem Properties Private Limited Shrem Construction Private Limited Shrem Montage Mydiary LLP	Shrem Investments Private Limited Shrem Impex Pvt Ltd Shrem Alloys Pvt Ltd

List of related parties as on 31st December 2020

	Shrem Infra Structure Private Limited (Sponsor)	Shrem Financial Private Limited (Investment Manager)
Holding	Chhatwal Group Trust	
Subsidiary Companies	Shrem Tollways Private Limited Shrem Infraventure Private Limited Shrem Roadways Private Limited	Shrem Airports Private Limited
Associate	-	Chhatwal Group Trust
Key Management Personnel	Nitan Chhatwal Smita N Chhatwal Krishani N Chhatwal Shyam Sunder Malani Piyush Oza	Nitan Chhatwal Aditi Javanjal Shyam Sunder Malani
Relatives of Key Management Personnel	Hitesh Chhatwal	
Enterprises owned or significantly influenced by key management personnel or	Shrem Investments Private Limited Shrem Road Projects Private Limited Shrem Properties Pvt Ltd	Shrem Investments Private Limited

B. Related Parties Transactions of Shrem Invit for the period ended 31st December 2020

Details of related party transactions	Sponsor Entity	Holding Entity	Enterprises owned or significantly influenced by key management personnel or their	Key Managerial Personnal
Assets				
Other Advance				
Shrem Infra Structure Pvt Ltd	1,057.50	-	-	-
Shrem Financials Private Limited	-	-	1.20	-
Total	**1,057.50**	**-**	**1.20**	**-**
Liability				
Borrowings			-	-
Shrem Infra Structure Pvt Ltd	10,060.32	-	-	-
Other current financial liabilities			-	-
Shrem Financial Private Limited	-	-	9.95	-
Total	**10,060.32**	**-**	**9.95**	**-**
Income				
Total	**-**	**-**	**-**	**-**
Expenses				
Professional Fees Expenses				
Shrem Financial Private Limited	-	-	9.00	-
Remuneration to Key Managerial Personnel				
Vinay Gupta	-	-	-	0.41
Total	**-**	**-**	**9.00**	**0.41**
Transactions				
Unsecured Loan Taken				
Shrem Infra Structure Pvt Ltd	1,549.22	-	-	
Nitan Chhatwal	-	-	-	100.00
Smita Chhatwal	-	-	-	7.50
Repayment of Unsecured Loan			-	
Shrem Infra Structure Pvt Ltd	949.73	-	-	-
Nitan Chhatwal	-	-	-	100.00
Smita Chhatwal	-	-	-	7.50
Expenses incurred by us on behalf of				
Shrem Financials Private Limited	-	-	1.20	-
Total	**2,498.95**	**-**	**1.20**	**215.00**
Grand Total	**13,616.77**	**-**	**21.35**	**215.41**

B. Related Parties Transactions of Shrem Invit for the year ended on 31st March 2020

(Rs. In Million)

Details of related party transactions	**Sponsor Entity**	**Holding Entity**	**Enterprises owned or significantly influenced by key management personnel or their relatives**	**Key Managerial Personnel and their relatives**
Particulars		**FY 2019-20**	**FY 2019-20**	**FY 2019-20**
Assets				
Other Advance				
Shrem Infra Structure Pvt Ltd	1,057.50	-	-	-
Other Receivables				
Shrem Alloys Private Limited	-	-	4.63	-
Shrem Properties Private Limited	-	-	0.75	-
Total	**1,057.50**	**-**	**5.38**	**-**
Liability				
Borrowings			-	-
Shrem Infra Structure Pvt Ltd	9,460.83	-	-	-
Expenses incurred on behalf of us				
Shrem Alloys Private Limited	-	-	5.14	-
Shrem Impex Private Limited	-	-	0.15	-
Nitan Chhatwal	-	-	-	0.54
Creditor for expenses				
Shrem Construction Pvt Ltd	-	-	21.60	-
Shrem Investement Pvt Ltd	-	-	24.17	-
Shrem Montage Mydiary LLP	-	-	15.12	-
Total	**9,460.83**	**-**	**66.18**	**0.54**
Income	**-**	**-**	**-**	**-**
Expenses				
Shrem Investement Pvt Ltd	-	-	-	-
Rent Expenses-Other Expenses	-	-	22.38	-
Professional Fees Expenses-Other Expenses		-		-
Shrem Construction Pvt Ltd	-	-	20.00	-
Shrem Montage Mydiary LLP	-	-	14.00	-
Remuneration to Key Managerial Personnel				
Vinay Gupta	-	-	-	0.44
Total	**-**	**-**	**56.38**	**0.44**

Transactions				
Loan given				
Shrem Infra Structure Pvt Ltd	1,057.50	-	-	-
Recepit of Unsecured Loan				-
Shrem Investement Pvt Ltd	-	-	10.37	-
Unsecured Loan Taken				
Shrem Infra Structure Pvt Ltd	2,593.83	-	-	-
Nitan Chhatwal	-	-	-	0.01
Repayment of Unsecured Loan				
Nitan Chhatwal	-	-	-	56.22
Shrem Infra Structure Pvt Ltd	1,222.23	-	-	-
Expenses incurred on behalf of us				
Shrem Alloys Private Limited	-	-	3.10	-
Shrem Impex Private Limited	-	-	0.15	-
Shrem Investement Pvt Ltd	-	-	0.35	-
Expenses incurred by us on behalf of others				
Shrem Alloys Private Limited	-	-	5.60	-
Shrem Properties Pvt Ltd	-	-	0.75	-
Total	**4,873.56**	**-**	**20.32**	**56.23**
Grand Total	**15,391.89**	**-**	**148.26**	**57.21**

B. Related Parties Transactions of Shrem Invit for the year ended on 31st March 2019

(Rs. In Million)

Details of related party transactions	Sponsor Entity	Holding Entity	Key Managerial Personnal and their relatives	Enterprises owned or significantly influenced by key management personnel or their relatives
Particulars	**FY 2018-19**	**FY 2018-19**	**FY 2018-19**	**FY 2018-19**
Assets				
Loans given				
Shrem Investement Pvt Ltd	-	-	-	10.37
Total		**-**	**-**	**10.37**
Liability				
Borrowings				-
Shrem Infra Structure Pvt Ltd	8,089.23	-	-	-
Nitan Chhatwal	-	-	56.21	-
Total	**8,089.23**	**-**	**56.21**	**-**
Other Income				
Shrem Investement Pvt Ltd	-	-	-	0.95
Total	**-**	**-**	**-**	**0.95**
Expenses				
Shrem Investement Pvt Ltd				
Interest Paid	-	-	-	0.01
Total		**-**	**-**	**0.01**
Transactions				
Expense incured on behalf				
Chhatwal Group Trust	-	0.01	-	-
Hitesh Chhatwal	-	-	0.10	-
Krishani Chhatwal	-	-	0.26	-
Shrem Alloys Private Limited	-	-	-	2.32
Shrem Impex Private Limited	-	-	-	0.36
Unsecured Loan Taken				
Shrem Infra Structure Pvt Ltd	6,151.43	-	-	-
Nitan Chhatwal	-	-	1.70	-
Hitesh Chhatwal	-	-	10.05	-
Shrem Investement Pvt Ltd	-	-	-	148.11
Repayment of Unsecured Loan				
Shrem Infra Structure Pvt Ltd	170.10	-	-	-
Hitesh Chhatwal	-	-	10.05	-
Nitan Chhatwal	-	-	1,031.18	-
Remuneration to Key Managerial Personnel		-		-
Vinay Gupta	-	-	0.34	-
Total	**6,321.53**	**0.01**	**1,053.68**	**150.79**
Grand total	**14,410.76**	**0.01**	**1,109.89**	**162.12**

B. Related Parties Transactions of Shrem Invit for the year ended on 31st March 2018

(Rs. In Million)

Details of related party transactions	Sponsor Entity	Holding Entity	Enterprises owned or significantly influenced by key management personnel or their relatives	Key Managerial Personnal and their relatives
Particulars	**FY 2017-18**	**FY 2017-18**	**FY 2017-18**	**FY 2017-18**
Assets				
Shrem Investments Pvt Ltd				
Unsecured Loan Given	-	-	9.51	-
Total	**-**	**-**	**9.51**	**-**
Liability				
Borrowings				
Shrem Infra Structure Pvt Ltd	2,107.90	-	-	-
Shrem Investement Pvt Ltd	-	-	22.57	-
Nitan Chhatwal	-	-	-	1,085.69
Total	**2,107.90**	**-**	**22.57**	**1,085.69**
Expenses				
Shrem Investement Pvt Ltd	-	-	-	-
Interest paid	-	-	24.80	-
Total	**-**	**-**	**24.80**	**-**
Income				
Shrem Investement Pvt Ltd	-	-	-	-
Interest Received		-	0.01	-
Total	**-**	**-**	**0.01**	**-**
Transactions				
Expense incured on behalf				-
Shrem Alloys Private Limited	-	-	2.18	-
Shrem Investement Pvt Ltd	-	-	1.61	-
Shrem Impex Private Limited	-	-	0.73	-
Loan given				-
Shrem Investment Pvt Ltd	-	-	9.50	-
Issue of Share Capital	9.90	-	-	-
Unsecured Loan Taken				
Nitan Chhatwal	-	-	-	1,206.83
Hitesh Chhatwal	-	-	-	205.90
Chhatwal Group Trust	-	1,160.00	-	-
Shrem Infra Structure Pvt Ltd	2,541.90	-	-	-
Shrem Investement Pvt Ltd	-	-	500.35	-
Repayment of Unsecured Loan				
Chhatwal Group Trust	-	1,160.00	-	-
Shrem Infra Structure Pvt Ltd	434.00	-	-	
Nitan Chhatwal	-	-	-	956.50
Hitesh Chhatwal	-	-	-	205.90
Shrem Investement Pvt Ltd	-	-	500.10	-
Total	**2,985.80**	**2,320.00**	**1,014.47**	**2,575.13**
Grand Total	**5,093.70**	**2,320.00**	**1,071.36**	**3,660.82**

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

36. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016 -Statement showing operating cash flows from the projects for all the SPV's

(Rs. in Million)

Sr No	Particulars	Period ending December 31, 2020	Year ending March 31, 2020	Year ending March 31, 2019	Year ending March 31, 2018
	Net Cash from Operating Activities				
1	DBL Ashok Nagar Vidisa Tollways Ltd	62.05	128.89	93.07	100.29
2	DBL Mahagaon Yavatmal Highways Pvt. Ltd.	(2,543.38)	(826.06)	(1,838.53)	(72.69)
3	DBL Tikamgargh-Nowgaon Tollways Limited	173.48	161.39	191.44	58.84
4	DBL Yavatmal Wardha Highways Pvt. Ltd.	500.30	(1,685.98)	(2,709.32)	208.21
5	DBL Wardha Butibori Highways Pvt. Ltd.	702.87	12.55	(2,382.32)	18.41
6	DBL Tuljapur Ausa Highways Limited	557.40	(2,753.46)	(1,478.70)	305.42
7	DBL Sitamau-Suwasara Tollways Ltd	94.19	38.96	107.37	87.86
8	DBL Silwani - Sultanganj Tollways Ltd	62.09	243.46	223.36	314.92
9	DBL Sardarpur Badnawar Tollways Limited	108.48	72.64	88.38	105.82
10	Suryavanshi Infrastructe Pvt Ltd	29.06	25.81	30.56	(71.22)
11	DBL Patan Rehli Tollways Ltd	279.46	324.71	378.99	(21.93)
12	DBL Nadiad Modasa Tollways Limted	185.45	278.66	315.84	348.45
13	DBL Mundi -Sanawad Tollways Ltd	198.56	153.74	168.44	51.46
14	DBL Mundargi Harapanahalli Tollways Limited	63.38	331.84	241.05	(1,150.22)
15	DBL Lucknow Sultanpur Highways Limited	1,641.43	1,000.03	(4,910.86)	205.52
16	DBL Kalmath Zarap Highways Limited	223.62	(311.31)	(1,858.24)	199.64
17	DBL Jaora-Sailana Tollways Ltd	260.30	177.16	170.90	129.85
18	Jalpa Devi Tollways Ltd	822.12	690.27	1,271.40	(99.96)
19	DBL Hirekerur Ranibennur Tollways Limited	36.99	297.58	253.96	(467.80)
20	DBL Hata Dorgaon Tollways Ltd	39.85	125.96	143.65	(62.47)
21	DBL Hassan Periyapatna Tollways Limited	39.13	434.37	413.76	(1,472.60)
22	DBL Uchera - Nagod Tollways Ltd	184.12	134.99	102.92	183.57
23	DBL Betul-Sarni Tollways Ltd	433.01	387.23	338.74	344.32
24	DBL Bankhlafata -Dogawa Tollways Ltd	192.61	151.87	136.69	145.89
	Total	**4,346.57**	**(404.70)**	**(10,507.45)**	**(610.42)**

Note:
Operating cash flows of projects SPV's are considered from respective audited financial statements.

SHREM INVIT
NOTES TO COMBINED FINANCIAL STATEMENT

37. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016 -Total Retun at fair value

(Rs. in Million)

Sr No	Particulars	As at 31st December 2020	As at 31st March 2020
(a)	Total Comprehensive Income (As per the Statement of Profit and loss/ Income & Expenditure)	2,911.12	1,268.87
(b)	Add/Less: Other Changes in Fair Value (e.g., in investment property, property, plant & equipment(if cost model is followed)) not recognized in Total Comprehensive Income		
	Total Return	**2,911.12**	**1,268.87**

38. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016 -Net Assets at Fair value as on 31st December 2020

(Rs. in Million)

Sr No	Particulars	Book Value	Fair Value
(a)	Assets*	58,941.09	78,656.83
(b)	Liabilities**	57,537.42	57,537.42
(c)	Net Assets (a-b)	**1,403.67**	**21,119.41**
(d)	No of Units #		
(e)	NAV (c/d) #		

* Fair market value of 24 project SPV's are considred as per the valuation report of independent valuer appointed under the InvIT Regulations

** Book value and Fair value are taken as reflected in the financial statements as on 31st December 2020.

The number of units that Shrem Invit will issue to investors in the proposed private placement and to Shrem Infra Structure Private Limited (referred to as 'the Sponsors') and all other shareholders of the respective holding companies, collectively holding hundred percent shareholding of the holding companies. Hence the disclosures in respect of number of units and NAV has not been given.

Note: In the above statement, Other changes in fair value for the period ended 31St December,2020 has been computed based on the fair values of total assets as at 31St December,2020. The fair values of total assets as at 31St December,2020 are based solely on the valuation report of the independent valuer appointed under the InvIT Regulations

Project wise break up of fair value of the assets as on 31st December 2020 are given bellow

(Rs. in Million)

Sr No	Name of SPV	Fair Value
1	DBL Lucknow Sultanpur Highways Limited	11,890.03
2	DBL Kalmath Zarap Highways Limited	5,268.36
3	DBL Yavatmal Wardha Highways Private Limited	6,096.75
4	DBL Tuljapur Ausa Highways Limited	4,289.53
5	DBL Wardha Butibori Highways Private Limited	5,592.96
6	DBL Mahagaon Yavatmal Highways Private Limited	5,728.73
7	DBL Ashoknagar-Vidisha Tollways Limited	631.30
8	DBL Betul-Sarni Tollways Limited	2,040.83
9	DBL Hata Dargawon Tollways Limited	883.49
10	DBL Silwani - Sultanganj Tollways Limited	925.44
11	DBL Sitamau- Suwasara Tollways Limited	462.10
12	DBL Mundi Sanawad Tollways Limited	846.83
13	DBL Uchera-Nagod Tollways Limited	1,291.21
14	DBL Sardarpur Badnawar Tollways Limited	423.76
15	DBL Patan Rehli Tollways Limited	2,659.59
16	DBL Tikamgarh- Nowgaon Tollways Limited	1,301.27
17	DBL Nadiad Modasa Tollways Limited	1,635.22
18	DBL Bankhlafata-Dogawa Tollways Limited	963.99
19	DBL Jaora-Sailana Tollways Limited	1,259.38
20	DBL Mundargi Harapanahalli Tollways Limited	1,299.12
21	DBL Hassan- Periyapatna Tollways Limited	2,068.61
22	DBL Hirekerur Ranibennur Tollways Limited	1,599.09
23	Jalpa Devi Tollways Limited	19,200.33
24	Suryavanshi Infrastructure Private Limited	298.91
	Total	**78,656.83**

39. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016-Capitalisation Statement as on 31st December 2020

(Rs. in Million)

Sr No	Particulars	Pre-issue as at	As adjusted for price*
(a)	Total Debt	52,204.48	
(b)	Unitholder's fund		
(c)	Unit Capital		
(d)	Equity Share Capital	210.28	
(e)	Reserves	1,193.39	
(f)	Debt equity ratio	37.19	

* corresponding details post issue of units are not available, hence the required disclosures in respect of the same have not been provided in the above table and will be determined on finalisation of issue price.

40. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016 -Debt Payment History

(Rs. in Million)

Sr No	Particulars	As at 31st December 2020	As at 31st March 2020	As at 31st March 2019	As at 31st March 2018
(a)	Opening balance at the beginning of the period	54,136.29	52,388.62	34,300.00	19,629.01
(b)	Add: Additional borrowings availed during the period	1,936.26	9,441.93	23,490.44	21,087.11
(c)	Less: Repayments during the period	7,288.44	12,148.40	8,943.52	8,812.44
(d)	Add (Less): Other adjustments and settlements during the period	3,420.37	4,454.14	3,541.70	2,396.32
(e)	**Closing Balance at the end of the period**	**52,204.48**	**54,136.29**	**52,388.62**	**34,300.00**

41. Disclosures as required by SEBI circular no CIR/IMD/DF/114/2016 dated october 20, 2016-Earnings Per Unit (EPU)

The number of units that Shrem Invit will issue to investors in the proposed private placement and to Shrem Infra Structure Private Limited (referred to as 'the Sponsors') in exchange of the shareholdings in the Project SPV Group and against the loan from Sponsors is not presently ascertainable. Hence the disclosures in respect of Earnings per Unit have not been given.

42. Disclosure of Creditors outstanding under MSMED Act, 2006

Disclosure of sundry creditors under current liabilities is based on the information available with the Trust Group regarding the status of the suppliers as defined under the "Micro, Small and Medium Enterprises Development Act, 2006" (the Act). There are no delays in payment made to such suppliers and there is no overdue amount outstanding as at the Balance sheet date. Relevant disclosures as required under the Act are as follows:

(Rs. in Million)

Sr. No.	Particulars	31-Dec-20	31-Mar-20	31-Mar-19	31-Mar-18
a)	i) Principal amount remaining unpaid to supplier under the MSMED Act 2006	Nil	Nil	Nil	Nil
	ii) Interest on a) (i) above	Nil	Nil	Nil	Nil
b)	i) Amount of Principal paid beyond the appointed Date	Nil	Nil	Nil	Nil
	ii) Amount of interest paid beyond the appointed date (as per Section 16 of the said Act)	Nil	Nil	Nil	Nil
c)	Amount of Interest due and payable for the year of delay in making payment, but without adding the interest specified under section 16 of the said Act	Nil	Nil	Nil	Nil
d)	Amount of Interest accrued and due	Nil	Nil	Nil	Nil
e)	Amount of further interest remaining due and payable Even in succeeding years	Nil	Nil	Nil	Nil

43. Toll operation suspension due to lockdown amid Covid-19 pandemic

Ministry of Road Transport & Highways (MORTH) has vide letter dated 25th March 2020 ordered the suspension of collection of Toll from 25.03.2020 till 19th April 2020. In accordance with the same, the trust group had suspended collection of Toll during this period.
In accordance with the Concessionaire agreement entered into between the Company and Madhya Pradesh Road Development Corporation, respective company in the Trust Group has submitted letter dated 21st March 2020 initiating the Force Majeure clause as per concession agreement stating that the company will further submit the loss in toll revenue and claim an equivalent extension in the Concession agreement as and when the Force Majeure event finishes.

44. Loan Moratorium facility vide RBI circular

Due to difficulty faced by the borrowers in repayment of loans due to cash flow issues amid lockdown because of Covid-19 pandemic, RBI vide its Notification Ref RBI/2019-201186 DOR.No .BP.BC.47l21 .04.04812019-20 dated 27th March 2020 (COVID-19 Regulatory Package) has asked the bankers to provide three months moratorium in loan repayments to its borrowers.
The respective company in the Trust Group has opted for this facility and has intimated to the respective bankers vide letter dated 28th March 2020 asking for keeping all the payments due from the Company under the Loan Agreement, any interests and charges therein in abeyance for the month of April and May 2020

45. Loan Redemption Reserve

During the financial year ended 31st March 2020 and 31st December 2020, the respective company in the Trust Group has formulated a policy to set aside amount towards Loan Redemption Reserve on account of amount repayable towards loan repayment in the subsequent financial year

46. Uncertainties relating to the Global Health Pandemic from Covid-19 ("Covid-19)

The impact of COVID-19 on the global economy and how governments, businesses and consumers respond is uncertain. This uncertainty is reflected in the Company's assessment of impairment loss allowance on its loans which are subject to a number of management judgements and estimates. In relation to COVID-19, judgements and assumptions include the extent and duration of the pandemic, the impacts of actions of governments and other authorities, and the responses of businesses and consumers in different industries, along with the associated impact on the global economy. While the methodologies and assumptions applied in the impairment loss allowance calculations remained unchanged from those applied while preparing the financial statements for the period ended 31st December 2020, the trust group has separately incorporated estimates, assumptions and judgements specific to the impact of the COVID-19 pandemic and the associated support packages in the measurement of impairment loss allowance and has recognized the same in the statement of profit and loss.

47. Figures relating to previous years have been regrouped / rearranged, wherever necessary.

For Mukund M Chitale & Co.
Chartered Accountants
FRN: 106655W

For and on behalf of the Board of Directors of Shrem Financial Private Limited
(As Investment Manager of Shrem Invit)

(S.M.Chitale)
Partner
M.No 111383

Place: Mumbai
Date: 22nd February 2021

Nitan Chhatwal
Director
DIN: 00115575

Place: Mumbai
Date: 22nd February 2021

Nikhil Pareek
Director
DIN: 07083015

Place: Mumbai
Date: 22nd February 2021

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Report of auditors on projections of revenue from operations and cash flow from operating activities and underlying assumptions

To

To,
Axis Trustee Services Limited *(as the Trustee of the Trust)*
The Ruby, 2nd Floor,
SW, 29, Senapati Bapat Marg,
Dadar West, Mumbai 400 028

Shrem Financial Private Limited *(as the Investment Manager of the Trust)*
1101, Viraj Towers,
Junction off Andheri Kurla Road,
W.E. Highway near Land Mark Building,
Andheri (E), Mumbai 400 069

We have reviewed the attached projected revenue from operations and cash flow from operation activities of the 24 Project SPVs for the years ended March 31, 2022, 2023 and 2024 and the Basis and notes to these projections ('Projections') along with significant assumptions underlying the projections ('Projection Assumptions' together with the Projections as ('Projected Revenue from operations and Cash Flow from operating activities') of the following entities, namely

1. Suryavanshi Infrastructure Private Limited (SIPL)
2. DBL Nadiad Modasa Tollways Limited (DNMTL)
3. DBL Jaora-Sailana Tollways Limited (DJSTL)
4. DBL Bankhlafata - Dogawa Tollways Limited (DBDTL)
5. DBL Ashoknagar Vidisha Tollways Ltd (DAVTL)
6. DBL Silwani-Sultanganj Tollways Limited (DSSTL)
7. DBL Sitamau-Suwasara Tollways Limited (DSSTL)
8. DBL Hata-Dargawon Tollways Limited (DHDTL)
9. DBL Patan Rehli Tollways Limited (DPRTL)
10. DBL Mundi-Sanawad Tollways Limited (DMSTL)
11. DBL Uchera – Nagod Tollways Limited (DUNTL)
12. DBL Betul-Sarni Tollways Limited (DBSTL)
13. DBL Tikamgarh-Nowgaon Tollways Limited (DTNTL)
14. DBL Sardarpur Badnawar Tollways Limited (DSBTL)
15. DBL Mundargi Harapanahalli Tollways Limited (DMHTL)
16. DBL Hassan Periyapatna Tollways Limited (DHPTL)
17. DBL Hirekerur Ranibennur Tollways Limited (DHRTL)
18. DBL Lucknow Sultanpur Highways Limited (DLSHL)
19. DBL Tuljapur Ausa Highways Limited (DTAHL)
20. DBL Mahagaon Yavatmal Highways Private Limited (DMYHPL)
21. DBL Yavatmal Wardha Highways Private Limited (DMYHPL)
22. DBL Kalmath Zarap Highways Limited (DKZHL)
23. DBL Wardha Butibori Highways Private Limited (DWBHPL)
24. Jalpa Devi Tollways Limited (JDTL)

(Collectively referred as ‘Project SPV) which are proposed to be transferred to Shrem Invit (Trust) prior to allotment of Units (‘Units’), pursuant to proposed private placement of Units of the Trust (‘Private Placement’), in accordance with Standard on Assurance Engagement 3400, ‘The Examination of Prospective Financial Information”, issued by The Institute of Chartered Accountants of India.

The Projected Revenue from operations and Cash Flow from operating activities have been prepared in relation to the proposed Private Placement of Units of the Trust (the ‘Issue’), under the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended from time to time, including the circulars, notifications, clarifications and guidelines issued thereunder, (“InvIT Regulations”).

The preparation and presentation of the Projected Revenue from operations and Cash Flow from operating activities in accordance with the InvIT Regulations, is the responsibility of the Investment Manager of Trust and has been approved by the Investment Manager of the Trust for inclusion in the draft placement memorandum and placement memorandum.

We have examined the evidence supporting the assumptions and other information in the Projections. Our responsibility does not include verification of the accuracy of the Projections. Therefore, we do not vouch for the accuracy of the same. The assumptions used for the preparation of these Projections have been provided to us by the Investment Manager of the Trust and relied upon by us as certain matters included are of technical nature.

We have examined and reviewed the projected revenue from operations and cash flow from operating activities for the Project SPVs for the financial years ended March 31, 2022, 2023 and 2024;

Based on our review of the evidence supporting the assumptions, nothing has come to our attention which causes us to believe that these Projection Assumptions do not provide a reasonable basis for the Projections and confirm that the Projection Assumptions are appropriate for the purpose of these Projections.

We have verified the arithmetical accuracy of the Projections and found them to be accurate and appropriate. Further, in our opinion, the Projections are properly prepared on the basis of the assumptions as set forth in the basis and notes to Projections and are consistent with the accounting policies of the Project SPV Group and with the financial statements of the Project SPVs and the significant accounting policies adopted by the Project SPV Group in line with the Indian Accounting Standard (Ind AS) as prescribed under Section 133 of the Companies Act, 2013 read with relevant rules and other accounting principles generally accepted in India and the InvIT Regulations.

Events and circumstances frequently do not occur as expected; even if the events anticipated under the hypothetical assumptions described herewith in the attached documents occur. Actual results are still likely to be different from the Projections since other anticipated events frequently do not occur as expected and the variation may be material. The actual results may therefore differ materially from those forecasted and projected, for the reasons set out above. Therefore, we do not express any opinion as to the possibility of achievement of the Projections.

This report is intended solely for inclusion in the draft placement memorandum and placement memorandum in connection with the proposed Private Placement of the Units of the Trust and is not to be used, referred to or distributed for any other purpose without our written consent.

For Mukund M Chitale & Co.
Chartered Accountants
Firm Registration Number 106655W

(S. M. Chitale)
Partner
M. No 111383

UDIN : 21111383AAAADK9594

Place: Mumbai
Date: February 22, 2021

SHREM INVIT

Projections of revenue from operations and cash flow from operations for the Project SPV

(INR in Millions)

Sr. no.	Particular	Year ended		
		31 March **2022**	31 March **2023**	31 March **2024**
1.	**SURYAVANSHI INFRASTRUCTURE PRIVATE LIMITED (''SIPL'')**			
	Revenue from operations	485.99	515.15	546.05
	Cash flow from operating activities	311.95	328.53	346.10
2.	**DBL NADIAD MODASA TOLLWAYS LIMITED (“DNMTL”)**			
	Revenue from operations	1,805.44	1,541.41	1,238.95
	Cash flow from operating activities	1,433.84	1,181.30	806.22
3.	**DBL JAORA SAILANA TOLLWAYS LTD(“DJSTL”)**			
	Revenue from operations	1,582.22	1,416.21	1,220.18
	Cash flow from operating activities	1,492.78	1,325.31	1,183.87
4..	**DBL BANKHLAFATA-DOGAWA TOLLWAYS LIMITED (“DBDTL”)**			
	Revenue from operations	1,205.65	1,068.15	908.68
	Cash flow from operating activities	968.59	813.47	635.32
5.	**DBL ASHOKNAGAR VIDISHA TOLLWAYS LIMITED (“DAVTL”)**			
	Revenue from operations	712.85	664.85	606.77
	Cash flow from operating activities	570.14	512.10	443.40
6.	**DBL SILWANI SULTANGANJ TOLLWAYS LIMITED(“DSSTL”)**			
	Revenue from operations	1,322.58	1,195.61	1,048.17
	Cash flow from operating activities	1,072.39	924.38	754.64
7.	**DBL SITAMOU SUWASARA TOLLWAYS LIMITED(“DSSTL”)**			
	Revenue from operations	714.76	670.65	616.36
	Cash flow from operating activities	599.98	546.01	481.27
8.	**DBL HATA DARGAWON TOLLWAYS LIMITED(“DHDTL”)**			

	Revenue from operations	1,192.12	1,139.80	1,080.18
	Cash flow from operating activities	932.65	862.68	784.36
9.	**DBL PATAN REHLI TOLLWAYS LIMITED (''DPRTL'')**			
	Revenue from operations	3,249.08	3,132.23	2,996.48
	Cash flow from operating activities	2,850.79	2,711.84	2,550.54
10.	**DBL MUNDI SANAWAD TOLLWAYS LIMITED("DMSTL")**			
	Revenue from operations	1,198.37	1,094.48	974.11
	Cash flow from operating activities	946.61	823.51	682.78
11.	**DBL UCHERA NAGOD TOLLWAYS LIMITED("DUNTL")**			
	Revenue from operations	1,503.01	1,415.74	1,311.88
	Cash flow from operating activities	1,272.85	1,169.67	1,048.95
12.	**DBL BETUL-SARNI TOLLWAYS LIMITED ("DBSTL")**			
	Revenue from operations	2,839.39	2,710.74	2,564.18
	Cash flow from operating activities	2,323.03	2,158.97	1,974.89
13.	**DBL TIKAMGARH NOWGAON TOLLWAYS LIMITED("DTNTL")**			
	Revenue from operations	1,542.32	1,466.83	1,379.96
	Cash flow from operating activities	1,229.55	1,132.39	1,022.55
14.	**DBL SARDARPUR BADNAWAR TOLLWAYS LIMITED(''DSBTL'')**			
	Revenue from operations	490.95	441.18	386.62
	Cash flow from operating activities	349.92	288.08	220.72
15.	**DBL MUNDARGI HARPANHALLI TOLLWAYS LIMITED ("DMHTL")**			
	Revenue from operations	3,014.71	2,782.43	2,455.66
	Cash flow from operating activities	2,482.32	2,226.96	82.99
16.	**DBL HASSAN PERIYAPATNA TOLLWAYS LIMITED("DHPTL")**			
	Revenue from operations	4,221.95	3,845.48	3,341.35
	Cash flow from operating activities	3,413.26	3,003.22	498.41
17.	**DBL HIREKERUR RANIBENNUR TOLLWAYS LIMITED("DHRTL")**			
	Revenue from operations	3,278.48	3,012.75	2,645.16
	Cash flow from operating activities	2,691.23	2,400.13	108.07
18.	**DBL LUCKNOW SULTANPUR HIGHWAYS LIMITED("DLSHL")**			

	Revenue from operations	14,354.27	13,807.93	13,236.83
	Cash flow from operating activities	13,675.33	13,116.27	12,531.14
19.	**DBL TULJAPUR AUSA HIGHWAYS LIMITED("DTAHL")**			
	Revenue from operations	7,077.01	6,933.32	6,777.40
	Cash flow from operating activities	6,539.42	6,395.67	6,239.33
20.	**DBL MAHAGAON YAVATMAL HIGHWAYS PRIVATE LIMITED("DMYHPL")**			
	Revenue from operations	9,606.47	9,422.73	9,229.77
	Cash flow from operating activities	9,185.58	8,992.84	8,790.31
21.	**DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED ("DYWHPL")**			
	Revenue from operations	8,814.56	8,641.32	8,452.05
	Cash flow from operating activities	8,425.26	8,243.78	8,045.65
22.	**DBL KALMATH ZARAP HIGHWAYS LIMITED("DKZHL")**			
	Revenue from operations	7,609.50	7,429.29	7,237.74
	Cash flow from operating activities	7,255.95	7,067.88	6,868.16
23.	**DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED("DWBHPL")**			
	Revenue from operations	8,865.73	8,670.60	8,465.87
	Cash flow from operating activities	8,463.04	8,259.21	7,655.04
24.	**JALPA DEVI TOLLWAYS LIMITED ("JDTL")**			
	Revenue from operations	14,159.47	15,661.90	16,866.86
	Cash flow from operating activities	12,928.17	14,606.47	10,713.31

The accompanying notes form an integral part of the above Statement.

Shrem Invit

Basis and Notes to Projected revenue from operations and cash flow from operating activities

1. General information

SHREM InvIT (the "Trust") was set up as a contributory irrevocable infrastructure investment trust under the provisions of the Indian Trusts Act, 1882 via "Trust Deed" dated December 31, 2020 between the Shrem Infrastructure Private Limited (the "Sponsor") as the settlor and sponsor of the Trust and Axis Trustee Services Limited ("Trustee"). The Trust was registered under the Securities Exchange Board of India (Infrastructure Investment Trust) Regulations, 2014, as amended including circulars and guidelines issued thereunder ("**SEBI InvIT Regulations**") on January 07, 2021 having registration number IN/InvIT/20-21/0016. The Investment manager for the Trust is Shrem Financial Private Limited (the "Investment Manager" or the "Management"). The Trust along with Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, the "Holding Companies"), through these Holding Companies, will ultimately acquire shareholding in 24 Project SPVs. These holding companies and 24 SPVs together are referred to as the "Trust Group".

1. Suryavanshi Infrastructure Private Limited (SIPL)
2. DBL Nadiad Modasa Tollways Limited (DNMTL)
3. DBL Jaora-Sailana Tollways Limited (DJSTL)
4. DBL Bankhlafata - Dogawa Tollways Limited (DBDTL)
5. DBL Ashoknagar Vidisha Tollways Ltd (DAVTL)
6. DBL Silwani-Sultanganj Tollways Limited (DSSTL)
7. DBL Sitamau-Suwasara Tollways Limited (DSSTL)
8. DBL Hata-Dargawon Tollways Limited (DHDTL)
9. DBL Patan Rehli Tollways Limited (DPRTL)
10. DBL Mundi-Sanawad Tollways Limited (DMSTL)
11. DBL Uchera – Nagod Tollways Limited (DUNTL)
12. DBL Betul-Sarni Tollways Limited (DBSTL)
13. DBL Tikamgarh-Nowgaon Tollways Limited (DTNTL)
14. DBL Sardarpur Badnawar Tollways Limited (DSBTL)
15. DBL Mundargi Harapanahalli Tollways Limited (DMHTL)
16. DBL Hassan Periyapatna Tollways Limited (DHPTL)
17. DBL Hirekerur Ranibennur Tollways Limited (DHRTL)
18. DBL Lucknow Sultanpur Highways Limited (DLSHL)
19. DBL Tuljapur Ausa Highways Limited (DTAHL)
20. DBL Mahagaon Yavatmal Highways Private Limited (DMYHPL)
21. DBL Yavatmal Wardha Highways Private Limited (DMYHPL)
22. DBL Kalmath Zarap Highways Limited (DKZHL)
23. DBL Wardha Butibori Highways Private Limited (DWBHPL)
24. Jalpa Devi Tollways Limited (JDTL)

2. Basis of preparation of projections of revenue from operations and cash flow from operating activities

The projections of revenue from operations and cash flow from operating activities of the Trust Group and of DLSHL, DKZHL, DYWHPL, DTAHL, DWBHPL, DMYHPL, DAVTL, DBSTL, DHDTL, DBL Silwani, DSSTL, DMSTL, DUNTL, DSBTL, DPRTL, DTNTL , DNMTL, DBDTL, DJSTL, DMHTL, DHPTL, DHRTL, JDTL, Suryavanshi Infra ("Projections") for the years ended March 31, 2022, March 31, 2023 and March 31, 2024 ("Projection period") have been prepared by the Investment Manager solely for inclusion in the Draft Placement Memorandum in connection with the private placement of the units of the Trust. Therefore, the use of the Projections is not appropriate and should not be used or relied upon for any purpose other than described above.

The Projections have been prepared based on the assumption that once the private placement is complete, the Trust will acquire equity interests in the Project SPVs

immediately prior to allotment in the private placement and out of the total net proceeds, Rs. six thousand million will be infused to replace part of existing bank debt.

The Projections are prepared based on the accounting policies that are expected to be used for the Trust financial information for the corresponding periods in accordance with Indian Accounting Standards ("Ind AS") and / or any addendum thereto as defined in Rule 2(1)(a) notified under the Companies (Indian Accounting Standards) Rules, 2015 and the Companies (Indian Accounting Standards) Amendment Rules, 2016 and subsequent amendments.

The Projections only include the following information:

1. Projected revenue from operations and cash flow from operating activities for the Project SPVs for the financial years ended March 31, 2022, 2023 and 2024;
2. Basis and Notes to projections
3. Significant assumptions underlying the projections

Though the aforesaid Projections are prepared under the Ind-AS framework, they do not provide for all the detailed disclosures as required under Ind-AS.

The accounting year end of the Trust is March 31 of each year. Accordingly, the Projections are prepared for the years ending March 31, 2022, 2023 and 2024. However, the assumed date of acquisition (April 1, 2021) may be postponed and accordingly, the actual result in the first financial period of the Trust as well as subsequent financial periods may be different from the projection period in the Projections.

The Projections have been prepared and disclosed in INR million, unless otherwise specifically mentioned.

The Projections contain forecasts and projections that relate to future events, which are, by their nature, subject to significant risks and uncertainties. The future events referred to involve risks, uncertainties and other factors which may cause the actual results or performance to be materially different from the Projections. Investors should therefore be aware that future events cannot be predicted with any certainty and there may be deviations from the figures projected in the Projections.

3. Significant assumptions

The Projections have been prepared based on the significant assumptions summarized below. These are Investment Manager's best estimate assumptions and hypothetical assumptions (about future events and actions) and have been prepared by the Investment Manager solely for inclusion in the Draft Placement Memorandum in connection with the proposed Private Placement of Units of the Trust in accordance with the requirements of the InvIT Regulations. The Investment Manager considers the assumptions to be appropriate and reasonable as at the date of the report. However, the investors should consider these assumptions as well as the Projections and make their own assessment of the future performance of the Trust.

3.1 Revenue from Operations:

Revenue from operations of the Trust Group are divided into four types on the basis of the the source of income: (i) hybrid annuity; (ii) annuity; (iii) toll; and (iv) annuity plus toll.

• The hybrid annuity model ("HAM") was introduced in January 2016 by the Government with an intent to share the financial risk with the developers, given that infrastructure projects are capital intensive in nature. In a HAM project, the concessioning authority shares a portion of the total project cost during the construction phase. As a mix of EPC and annuity models, HAM reduces the financial burden of a concessionaire during the project construction phase and provides an assured revenue in form of annuities in the

operational phase. Annuity payments eliminate the risk of income fluctuations resulting from changes in traffic volumes. Going forward, HAM is expected to remain the preferred mode of contract for both the Government as well as developers.

- In an annuity project or where the annuity component of an annuity plus toll project is concerned, a fixed amount is paid semi-annually as annuity by the respective Concessioning Authority pursuant to the applicable concession agreement. Income from the project is thus assured to the extent of the annuity to be collected, thus eliminating or reducing our risk of income fluctuations arising from changes in traffic volumes.

- In a toll-based project or where the toll component of an annuity plus toll project is concerned, SPVs are allowed to collect tolls from vehicles that use the road during the concession period at rates notified by the relevant Concessioning Authority. Income collected on a toll basis thus fluctuates as traffic volume changes, which is a risk inherent in the operation of the toll roads. Key variables for toll revenue growth are traffic growth and are based on Management estimates and traffic study conducted by external consultant.

The revenue projections as above cover only a period of 3 years.

3.2 Operating and maintenance cost

The operating and maintenance cost includes routine, periodic/major maintenance, manpower costs and operational expenses, including, but not limited to, road and site work expenses, employee benefit expenses and other operating and maintenance costs. The operation and maintenance costs are projected based on the costs as stated in the Project Implementation Agreement.

The projected operating and maintenance cost corresponds with the projected traffic and the projected revenue and is primarily based on the currently available information on actual operating and maintenance cost associated with the operation of the Project SPVs.

Operating expenses comprise the following:

i. Operation and Maintenance (O&M) expenses:

O&M expenses considered in the Projections are based on long term contract with the Contractor.

ii. Insurance:

Insurance expenses considered in the Projections are based on premiums as per the insurance policy. The Investment Manager estimates insurance premium to remain constant for the entire life of assets. However, if there are damages to the road infrastructure for which claims are made, the insurance premiums may change significantly.

iii. Other operating expenses:

These mainly include legal/regulatory charges and professional fees. These expenses have been considered in the Projections based on the management's expectations.

iv. Project Manager Fees:

The Project Manager Fees is considered based on management estimates and to be in line with Project implementation and management agreement to be executed between Project Manager and respective SPVs. The annual Fees payable to the Project Manager in respect of the Services is considered to be 0.50% of revenue generated by each SPVs for a particular period. The fee will be payable on quarterly basis post receipt of annuity payments from Authority / Toll collection. The Project Manager fees is assumed to be paid out of the project cash flows of the Project SPVs.

v. Investment Manager Fee

Investment manager fee has been considered based on the Investment Management Agreement ("IMA") executed between the Trustee and Investment manager. The Investment manager fee is 1.00%(Including applicable taxes (If any)) of the revenue generated by SPVs. The fee will be payable on quarterly basis.

vi. Other Expenses

Other expenses for the Trust include audit fees, credit fees and surveillance fees, valuer's fees, legal/professional fees and other miscellaneous expenses and are primarily estimated based on the quotes (to the extent available) and Project SPV Management's experience and best judgment of Investment Manager.

3.3 Income Taxes

For Project SPVs:

Income taxes for Project SPVs have been computed at income tax rates applicable to the Project SPVs for FY 2020- 21 which are expected to apply for the Projection Period. For the computation of income tax for Project SPVs, it is assumed that all project SPV's are eligible for deduction under section 80-IA of the Income Tax Act, 1961.

3.4 Depreciation in Project SPVs:

Depreciation on tangible assets is calculated based on the written down value method (WDV) using the useful lives as prescribed under the Schedule II to the Companies Act, 2013 or as re-assessed by the Project SPVs.

Toll Collection rights

Toll collection rights including premium obligation are amortised over the period of concession, on a straight line basis.

3.5 Changes in Working Capital

For Project SPVs:

For the computation of changes in working capital, the receivables period is considered based on Management estimates.

For Trust Group:

Changes in working capital for the Trust Group over the Projection Period have been considered as the summation of the working capital changes in the Project SPVs during the Projection Period.

3.6 Other Assumptions

The Investment Manager has made the following additional assumptions in preparing theProjections:

i. The initial portfolio of Project SPVs is assumed to remain unchanged throughout the Projection period. Further, the Projections have been prepared assuming the proposed InvIT structure from 1st April 2021. The actual structure shall come into existence after the Initial private placement of Units of the Trust which may be before 1st April 2021.

ii. No further assets are assumed to be acquired during the Projection period;

iii. No further capital is assumed to be raised during the Projection period;

iv. It is assumed that there will be no material change in taxation legislations or other applicable legislations during the Projection period.

v. The relevant tax exemptions, tax remissions, and preferential tax treatments granted remain valid and applicable and that the terms and conditions thereto are complied with.

vi. The respective components of the Projections have been prepared using Ind AS standards and interpretations that are effective for the Ind AS financial statements for the nine months ended December 31, 2020. The Projections do not take into account the impact of any new Ind AS standard or interpretation not effective as at December 31, 2020. Ind AS standards or interpretations issued but not effective or not issued as at December 31, 2020 which may become effective during the Projections period may have an impact on the Projections and to that extent the actual figures may vary from the Projections;

The Projections are based on assumptions and are subject to a number of factors. Investors should be aware that future events, including actual traffic growth rates, cannot be predicted with any certainty and there may be deviations from the figures projected in the Projections.

The Projections have been prepared based on the Traffic study Report provided by the independent agency. It includes best case scenario for traffic volume growth rates, and no analysis has been performed to demonstrate the sensitivity of the Projections to changes in traffic volume growth rates or other assumptions.

The Trust will be initially holding 100% paid up equity capital in of Shrem Roadways Private Limited (SRPL), Shrem Infraventure Private Limited (SIPL) and Shrem Tollways Private limited (STPL) which in turn shall be holding 100% of the paid up equity share capital of DLSHL, DKZHL, DYWHPL, DTAHL, DWBHPL, DMYHPL, DAVTL, DBSTL, DHDTL, DBL Silwani, DSSTL, DMSTL, DUNTL, DSBTL, DPRTL, DTNTL, DBDTL, DJSTL, JDTL and Suryavanshi Infra and 74% of DNMTL, DMHTL, DHPTL and DHRTL. Financial projections have been prepared assuming 100% financial interest in DNMTL, DMHTL, DHPTL and DHRTL.

For Mukund M Chitale & Co.	For and on behalf of Board of Directors of Shrem Financial Private Limited (As Investment Manager of Shrem Invit)
Chartered Accountants	
FRN: 106655W	

(S. M Chitale) Partner M No : 111383	Nitan Chhatwal Director DIN: 115575	Nikhil Pareek Director DIN: 07083015
Date: February 22, 2021 Place: Mumbai	Date: February 22, 2021 Place: Mumbai	Date: February 22,2021 Place: Mumbai

MATERIAL CONTRACTS AND DOCUMENTS FOR INSPECTION

The following contracts, which are or may be deemed material have been entered or are to be entered into in due course. These contracts and also the documents for inspection referred to hereunder, may be inspected at the principal place of business of the Trust, from 10:00 A.M. to 5:00 P.M., on all Working Days from the date of filing the Placement Memorandum until the date of listing of the Units pursuant to this Issue. Any of the contracts or documents mentioned in this Draft Placement Memorandum may be amended or modified at any time if so required in the interest of the Trust or if required by the other parties, without reference to the Unitholder, subject to compliance with applicable law and InvIT Documents.

1. Trust Deed entered into between the Sponsor and the Trustee dated December 31, 2020.

2. SEBI registration certificate for the Trust bearing number IN/InvIT/20-21/0017 dated February 4, 2021 as an infrastructure investment trust.

3. Investment management agreement entered into between the Trustee (acting on behalf of the Trust) and the Investment Manager dated January 12, 2021.

4. No-objection certificate from the National Highways Authority of India bearing number [●] dated [●].

5. No-objection certificate from the Madhya Pradesh Road Development Corporation bearing number [●] dated [●].

6. No-objection certificate from the Karnataka Road Development Corporation Limited bearing number [●] dated [●].

7. No-objection certificate from the Public Works Department bearing number [●] dated [●].

8. No-objection certificate from the Roads and Buildings Department, Government of Gujarat bearing number [●] dated [●].

9. Securities purchase agreement entered into between the Sponsor, the Investment Manager, the Trustee (acting on behalf of the Trust) and SIPL dated [●].

10. Securities purchase agreement entered into between the Sponsor, the Investment Manager, the Trustee (acting on behalf of the Trust) and SRPL dated [●].

11. Securities purchase agreement entered into between the Sponsor, the Investment Manager, the Trustee (acting on behalf of the Trust) and STPL dated [●].

12. Placement Agreement entered into among the Trust (acting through its Trustee), the Investment Manager, the Trustee, the Sponsor, the Project Manager and the Lead Manager, dated [●].

13. Cash Escrow Agreement entered into among the Trust (acting through its Trustee), the Investment Manager, the Trustee, the Sponsor, the Lead Manager and the Escrow Collection Bank, dated [●].

14. Agreement dated February 16, 2021, between NSDL, the Trust, and the Registrar.

15. Agreement dated February 18, 2021 between CDSL, the Trust and the Registrar.

16. Certified copies of the updated Memorandum and Articles of Association of the Investment Manager as amended from time to time.

17. Board resolution of the Investment Manager dated February 22, 2021, authorising this Issue.

18. Consents from the (i) Lead Manager; (ii) Legal counsel to the Trust and to the Sponsor as to Indian law; (iii) Legal Counsel to the Lead Manager as to Indian Law; (iv) International Legal Counsel to the Lead Manager; (v) Initial Portfolio Asset, the Sponsor and the Investment Manager; (vi) Valuer; (vii) Registrar; (viii) Compliance Officer of the Trust; (ix) Traffic Study Consultant; (x) Technical Consultant; and (xi) Auditors.

19. Audited Special Purpose Combined Financial Statements and the report thereon.

20. Summary consolidated financial statements of the Sponsor for financial years ended March 31, 2020, March 31, 2019 and March 31, 2018.

21. Summary consolidated financial statements of the Investment Manager for financial years ended March 31, 2020, March 31, 2019 and March 31, 2018.

22. Projections of Revenue from Operations and Cash Flow from Operating Activities and the report thereon.

23. The statement of tax benefits dated February 24, 2021 from the Auditors.

24. In-principle listing approval dated [●] issued by the NSE.

25. Corporate governance policies of the Investment Manager.

26. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DLSHL dated [●].

27. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DKZHL dated [●].

28. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DYWHPL dated [●].

29. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DTAHL dated [●].

30. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DWBHPL dated [●].

31. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DMYHPL dated [●].

32. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DAVTL dated [●].

33. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DBSTL dated [●].

34. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DHDTL dated [●].

35. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DBL Silwani dated [●].

36. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DSSTL dated [●].

37. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DMSTL dated [●].

38. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DUNTL dated [●].

39. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DSBTL dated [●].

40. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DPRTL dated [●].

41. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DTNTL dated [●].

42. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DNMTL dated [●].

43. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DBDTL dated [●].

44. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DJSTL dated [●].

45. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DMHTL dated [●].

46. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DHPTL dated [●].

47. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and DHRTL dated [●].

48. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and JDTL dated [●].

49. Project implementation and management agreement entered into between the Trustee (acting on behalf of the Trust), the Investment Manager, the Project Manager, and Suryavanshi Infra dated [●].

50. Concession Agreement dated March 22, 2013 entered into between MPRDC and DBL Ashoknagar-Vidisha Tollways Limited.

51. Concession Agreement dated January 28, 2013 entered into between MPRDC and DBL Bankhalafata-Dogawa Tollways Limited.

52. Concession Agreement dated May 20, 2013 entered into between MPRDC and DBL Betul Sarni Tollways Limited.

53. Concession Agreement dated December 16, 2015 entered into between the Governor of Karnataka represented by the Managing Director, KRDCL and DBL Hassan Periyapatna Tollways Limited.

54. Concession Agreement dated August 10, 2015 entered into between MPRDC and DBL Hata-Dargawan Tollways Limited.

55. Concession Agreement dated December 16, 2015 entered into between the Governor of Karnataka represented by the Managing Director, KRDCL and DBL Hirekerur Ranibennur Tollways Limited.

56. Concession Agreement dated December 24, 2012 entered into between MPRDC and DBL Jaora-Sailana Tollways Limited.

57. Concession Agreement dated February 9, 2017 entered into between MoRTH, GoI represented by Chief Engineer (National Highways), Public Works Department, Government of Maharashtra and DBL Kalmath Zarap Highways Limited.

58. Concession Agreement dated October 24, 2016 entered into between NHAI and DBL Lucknow Sultanpur Highways Limited.

59. Concession Agreement dated June 9, 2017 entered into between NHAI and DBL Mahagaon Yavatmal Highways Private Limited.

60. Concession Agreement dated December 5, 2011 entered into between MPRDC and DBL Mundi-Sanawad Tollways Limited.

61. Concession Agreement dated January 5, 2012 entered into between the Governor of State of Gujarat and DBL Nadiad-Modasa Tollways Limited.

62. Concession Agreement dated September 1, 2015 entered into between MPRDC and DBL Patan Rehli Tollways Limited.

63. Concession Agreement dated June 29, 2011 entered into between MPRDC and DBL Sardarpur Badnawar Tollways Limited.

64. Concession Agreement dated September 8, 2011 entered into between MPRDC and DBL Silwani Sultanganj Tollways Limited.

65. Concession Agreement dated December 5, 2011 entered into between MPRDC and DBL Sitamau Suwasara Tollways Limited.

66. Concession Agreement dated November 12, 2013 entered into between MPRDC and DBL Tikamgarh-Nowgaon Tollways Limited.

67. Concession Agreement dated May 1, 2017 entered into between NHAI and DBL Tuljapur Ausa Highways Limited.

68. Concession Agreement dated September 24, 2012 entered into between MPRDC and DBL Uchera-Nagod Tollways Limited.

69. Concession Agreement dated June 9, 2017 entered into between NHAI and DBL Wardha Butibori Highways Private Limited.

70. Concession Agreement dated June 9, 2017 entered into between NHAI and DBL Yavatmal Wardha Highways Private Limited.

71. Concession Agreement dated September 21, 2015 entered into between NHAI and Jalpa Devi Tollways Limited.

72. Concession Agreement dated December 16, 2015 entered into between the Governor of Karnataka represented by the Managing Director, KRDCL and DBL Mundargi Harapanahalli Tollways Limited.

73. Concession Agreement dated July 10, 2007 entered into between MPRDC and Suryavanshi Infrastructure Private Limited and Dilip Buildcon Private Limited.

74. State support agreement dated July 11, 2013 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Betul-Sarni Tollways Limited.

75. State support agreement dated July 4, 2013 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Jaora-Sailana Tollways Limited.

76. State support agreement dated February 3, 2012 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Mundi-Sanawad Tollways Limited.

77. State support agreement dated December 21, 2011 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Sardarpur Badnawar Tollways Limited.

78. State support agreement dated December 19, 2011 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Silwani Sultanganj Tollways Limited.

79. State support agreement dated February 3, 2012 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Sitamau Suwasara Tollways Limited.

80. State support agreement dated July 15, 2013 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Ashoknagar-Vidisha Tollways Limited.

81. State support agreement dated July 8, 2013 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Bankhlafata – Dogawa Tollways Limited.

82. State support agreement dated April 13, 2010 entered into between the Governor of the State Maharashtra and the President of India.

83. State support agreement dated November 16, 2015 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Hata – Dargawan Tollways Limited.

84. State support agreement dated April 13, 2010 entered into between the Governor of the State Madhya Pradesh and the President of India.

85. State support agreement dated October 12, 2007 entered into between the Governor of the State of Madhya Pradesh, MPRDC and Suryavanshi Infrastructure Private Limited.

86. State support agreement dated November 16, 2015 entered into between the Governor of the State of Madhya Pradesh, MPRDC and DBL Patan Rehli Tollways Limited.

87. State support agreement dated February 20, 2014 entered into between the Governor of the State of Uttar Pradesh and the President of India.

88. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DLSHL.

89. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DKZHL.

90. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DYWHPL.

91. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DTAHL.

92. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DWBHPL.

93. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DMYHPL.

94. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DAVTL.

95. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DBSTL.

96. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DHDTL.

97. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DBL Silwani.

98. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DSSTL.

99. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DMSTL.

100. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DUNTL.

101. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DSBTL.

102. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DPRTL.

103. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DTNTL.

104. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DNMTL.

105. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DBDTL.

106. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DJSTL.

107. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DMHTL.

108. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DHPTL.

109. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and DHRTL.

110. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and JDTL.

111. Operation and maintenance agreement dated [●] entered into between the Project Manager, the O&M Contractor and Suryavanshi Infra.

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Nitan Chhatwal
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Smita Chhatwal
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Nikhil Pareek
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Pradeep Singh
Independent Director

Date: February 27, 2021
Place: Gurgaon

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Suneet Maheshwari
Independent Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Investment Manager hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Investment Manager further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Financial Private Limited**

Anurag Kumar Sachan
Independent Director

Date: February 27, 2021
Place: Gurgaon

DECLARATION

The Sponsor hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Sponsor further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Infra Structure Private Limited**

Nitan Chhatwal
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Sponsor hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Sponsor further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Infra Structure Private Limited**

Smita Chhatwal
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Sponsor hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Sponsor further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Infra Structure Private Limited**

Krishani Chhatwal
Director

Date: February 27, 2021
Place: Mumbai

DECLARATION

The Sponsor hereby declares and certifies that all relevant provisions of the InvIT Regulations, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be) have been complied with and no statement made in this Draft Placement Memorandum is contrary to the applicable provisions of the InvIT Regulations, the SCRA, SEBI Act and all rules, regulations and guidelines issued by the GoI or SEBI (as the case may be). The Sponsor further certifies that all the statements and disclosures in this Draft Placement Memorandum are material, true, correct, not misleading and adequate in order to enable the Bidders to make an informed decision.

For **Shrem Infra Structure Private Limited**

Shyam Sunder Malani
Director

Date: February 27, 2021
Place: Mumbai

ANNEXURE A

VALUATION REPORT

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Prepared for:
Shrem InvIT ("the Trust")

Shrem Financial Private Limited ("the Investment Manager")

Valuation as per SEBI (Infrastructure Investment Trusts) Regulations, 2014 as amended

Fair Enterprise Valuation

Valuation Date: 31st January 2021

Mr. S Sundararaman,
Registered Valuer,
IBBI Registration No - IBBI/RV/06/2018/10238

Strictly Private and Confidential

RV/SSR/R/2021/09

Date: 24th February 2021

Shrem InvIT
(acting through Axis Trustee Services Limited (in its capacity as "the Trustee" of the Trust)
1101, Viraj Towers,
Junction off Andheri Kurla Road,
W.E. Highway, Near Landmark Building,
Andheri (E), Mumbai 400 069.

Shrem Financial Private Limited
(acting as the Investment Manager to Shrem InvIT)
1101, Viraj Towers,
Junction off Andheri Kurla Road,
W.E. Highway, Near Landmark Building,
Andhe3ri (E), Mumbai 400 069.

Sub: Financial Valuation as per SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended ("the SEBI InvIT Regulations")

Dear Sir(s)/Madam(s),

I, Mr. S. Sundararaman ("**Registered Valuer**" or "**RV**" or "**I**" or "**My**" or "**Me**") bearing IBBI registration number IBBI/RV/06/2018/10238, have been appointed vide letter dated 11th January 2021 as an independent valuer, as defined as per Regulation 2(zzf) of the SEBI InvIT Regulations, by **Shrem Financial Private Limited** ("**SFPL**" or "**the Investment Manager"**) acting as the investment manager for **Shrem InvIT** ("**the Trust**" or "**Shrem InvIT**"), an infrastructure investment trust, registered with the **Securities Exchange Board of India** (**"SEBI"**) with effect from 04th February 2021, bearing registration number IN/InvIT/20-21/0017 and **Axis Trustee Services Limited** ("**the Trustee**") acting on behalf of the for the purpose of the financial valuation of the special purpose vehicles (defined below and hereinafter together referred as "**the SPVs"**) of Shrem Infrastructure Private Limited ("**the Sponsor**" or "**SISPL**") as per the requirements of the Securities and Exchange Board of India (Infrastructure Investment Trusts) Regulations, 2014, as amended ("**SEBI InvIT Regulations**"). The SPVs to be valued are proposed to be transferred to the Trust to be created as set out in the SEBI InvIT Regulations, where SFPL is acting as the Investment Manager and SISPL is the Sponsor as per the extant provisions of the SEBI InvIT Regulations.

I am enclosing the Report providing opinion on the fair enterprise value of the SPVs as defined hereinafter on a going concern basis as at 31st January 2021 ("**Valuation Date**").

Enterprise Value ("**EV**") is described as the total value of the equity in a business plus the value of its debt and debt related liabilities, minus any cash or cash equivalents to meet those liabilities. The attached Report details the valuation methodologies used, calculations performed and the conclusion reached with respect to this valuation.

I have relied on explanations and information provided by the Investment Manager. Although, I have reviewed such data for consistency, those are not independently investigated or otherwise verified. My team and I have no present or planned future interest in the Trust, the SPVs or the Investment Manager except to the extent of this appointment as an independent valuer and the fee for this Valuation Report ("**Report**") which is not contingent upon the values reported herein. The valuation analysis should not be construed as investment advice, specifically, I do not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Trust.

This Report has been prepared solely for the purpose of inclusion as part of the Draft Placement Memorandum ("DPM"), Placement Memorandum ("PM") and the Final Placement Memorandum ("FPM) and such other documents as may be required in accordance with the independent valuation required as per the SEBI InvIT Regulations.

The SPVs are expected to be acquired by the Trust and are to be valued as per Regulation 21 read with Chapter V of the SEBI InvIT Regulations.

Following Special Purpose Vehicles are proposed to be transferred to the Trust:

Sr. No.	Name of the SPV	Term	Term	Group
	NHAI Hybrid Annuity Model Assets		**NHAI HAM SPVs**	**Annuity SPVs**
1	DBL Lucknow Sultanpur Highways Limited	DLSHL		
2	DBL Kalmath Zaraph Highways Limited	DKZHL		
3	DBL Yavatmal Wardha Highways Private Limited	DYWHPL		
4	DBL Tuljapur Ausa Highways Limited	DTAHL		
5	DBL Wardha Butibori Highways Private Limited	DWBHPL		
6	DBL Mahagaon Yavatmal Highways Private Limited	DMYHPL		
	State Annuity and Toll Model		**State ATM SPVs**	
7	DBL Ashoknagar – Vidisha Tollways Limited	DAVTL		
8	DBL Betul – Sarni Tollways Limited	DBSTL		
9	DBL Hata – Dargawon Tollways Limited	DHDTL		
10	DBL Silwani – Sultanganj Tollways Limited	DSSTL		
11	DBL Sitamau– Suwasara Tollways Limited	Sitamu		
12	DBL Mundi – Sanawad Tollways Limited	DMSTL		
13	DBL Uchera – Nagod Tollways Limited	DUNTL		
14	DBL Sardarpur Badnawar Tollways Limited	DSBTL		
15	DBL Patan Rehli Tollways Limited	DPRTL		
16	DBL Tikamgarh – Nowgaon Tollways Limited	DTNTL		
	State Annuity Model		**State AM SPVs**	
17	DBL Nadiad Modasa Tollways Limited	DNMTL		
18	DBL Bankhlafata – Dogawa Tollways Limited	DBDTL		
19	DBL Jaora – Sailana Tollways Limited	DJSTL		
20	DBL Mundargi Harapanahalli Tollways Limited	DMHTL		
21	DBL Hassan Periyapatna Tollways Limited	DHPTL		
22	DBL Hirekerur Ranibennur Tollways Limited	DHRTL		
	Toll Model			**Toll SPVs**
23	Jalpa Devi Tollways Limited	JDTL	**NHAI Toll**	
24	Suryavanshi Infrastructure Private Limited	SUIPL	**State Toll**	

(Hereinafter all the 24 companies mentioned above are together referred to as "**the SPVs"**)

The analysis must be considered as a whole. Selecting portions of any analysis or the factors that are considered in this Report, without considering all factors and analysis together could create a misleading view of the process underlying the valuation conclusions. The preparation of a valuation is a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on any particular factor or analysis.

The information provided to me by the Investment Manager in relation to the SPVs included but not limited to historical financial statements, forecasts/projections, other statements and assumptions about future matters like forward-looking financial information prepared by the Investment Manager. The forecasts and projections as supplied to me are based upon assumptions about events and circumstances which are yet to occur.

By nature, valuation is based on estimates, however, considering the outbreak of COVID-19 Pandemic and the consequent economic slowdown, the risks and uncertainties relating to the events occurring in the future, the actual figures in future may differ from these estimates and may have an impact on the valuation of the SPVs.

Further, considering the current crisis in relation to COVID-19 in India and across the globe, I have been informed by the Investment Manager, that the forecasts / projections provided for the valuation exercises are prepared after reasonably evaluating and incorporating the impact of outbreak of COVID-19 pandemic as per prevalent conditions as on date.

I have not tested individual assumptions or attempted to substantiate the veracity or integrity of such assumptions in relation to the forward-looking financial information, however, I have made sufficient enquiry to satisfy myself that such information has been prepared on a reasonable basis.

Notwithstanding anything above, I cannot provide any assurance that the forward looking financial information will be representative of the results which will actually be achieved during the cash flow forecast period.

The valuation provided by RV and the valuation conclusion are included herein and the Report complies with the SEBI InvIT Regulations and guidelines, circular or notification issued by the Securities and Exchange Board of India ("**SEBI**") thereunder.

Please note that all comments in the Report must be read in conjunction with the caveats to the Report, which are contained in Section 11 of this Report. This letter, the Report and the summary of valuation included herein can be provided to Trust's advisors and may be made available for the inspection to the public and with the SEBI, the stock exchanges and any other regulatory and supervisory authority, as may be required.

Yours faithfully,

S. SUNDARARAMAN IBBI/RV/06/2018/10238 CHENNAI REGISTERED VALUER

S. Sundararaman
Registered Valuer
IBBI Registration No.: IBBI/RV/06/2018/10238
Asset Class: Securities or Financial Assets
Place: Chennai
UDIN: 21028423AAAACZ9032

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Definition, abbreviation & glossary of terms

Abbreviations	Meaning
BOT	Build, Operate and Transfer
Capex	Capital Expenditure
CCIL	Clearing Corporation of India Limited
CCM	Comparable Companies Multiples
COD	Commercial Operation Date
Cr	Crores
CTM	Comparable Transactions Multiples
DAVTL	DBL Ashoknagar - Vidisha Tollways Limited
DBDTL	DBL Bankhlafata - Dogawa Tollways Limited
DBFOT	Design, Build, Finance, Operate and Transfer
DBL	Dilip Buildcon Limited
DBSTL	DBL Betul - Sarni Tollways Limited
DCF	Discounted Cash Flow
DHDTL	DBL Hata - Dargawon Tollways Limited
DHPTL	DBL Hassan Periyapatna Tollways Limited
DHRTL	DBL Hirekerur Ranibennur Tollways Limited
DJSTL	DBL Jaora - Sailana Tollways Limited
DKZHL	DBL Kalmath Zaraph Highways Limited
DLSHL	DBL Lucknow Sultanpur Highways Limited
DMHTL	DBL Mundargi Harapanahalli Tollways Limited
DMSTL	DBL Mundi - Sanawad Tollways Limited
DMYHL	DBL Mahagaon Yavatmal Highways Private Limited
DNMTL	DBL Nadiad Modasa Tollways Limited
DPM	Draft Placement Memorandum
DPRTL	DBL Patan Rehli Tollways Limited
DSBTL	DBL Sardarpur Badnawar Tollways Limited
DSSTL	DBL Silwani - Sultanganj Tollways Limited
DTAHL	DBL Tuljapur Ausa Highways Limited
DTNTL	DBL Tikamgarh - Nowgaon Tollways Limited
DUNTL	DBL Uchera - Nagod Tollways Limited
DWBHL	DBL Wardha Butibori Highways Private Limited
DYWHL	DBL Yavatmal Wardha Highways Private Limited
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
ERP	Equity Risk Premium
ETC	Electronic Toll Collection
EV	Enterprise Value
FCFF	Free Cash Flow to the Firm
FDI	Foreign Direct Investment
FPM	Final Placement Memorandum
FY	Financial Year Ended 31st March
GQ	Golden Quadrilateral

Abbreviations	Meaning
GSRDC	Gujarat State Road Development Corporation Limited
HAM	Hybrid Annuity Model
Ind AS	Indian Accounting Standards
INR	Indian Rupees
Investment Manager/SFPL	Shrem Financials Private Limited
IVS	ICAI Valuation Standards 2018
JDTL	Jalpa Devi Tollways Limited
Kms	Kilometres
KRDC	Karnataka Road Development Corporation Limited
MoRTH	Ministry of Road Transport and Highways
MMR	Major Maintenance and Repairs
MPRDC	Madhya Pradesh Road Development Corporation Limited
Mn	Million
NAV	Net Asset Value Method
NCA	Net Current Assets Excluding Cash and Bank Balances
NH	National Highway
NHAI	National Highways Authority of India
NHDP	National Highways Development Project
NS-EW	North- South and East-West Corridors
O&M	Operation & Maintenance
PM	Placement Memorandum
PPP	Public Private Partnership
RFID	Radio Frequency Identification
RV	Registered Valuer
SEBI	Securities and Exchange Board of India
SEBI InvIT Regulations	SEBI (Infrastructure Investment Trusts) Regulations, 2014, as amended
SH	State Highway
SIPL	Shrem Infraventure Private Limited
Sitamau	DBL Sitamau- Suwasara Tollways Limited
Sponsor/SISPL	Shrem Infrastructure Private Limited
SRPL	Shrem Roadways Private Limited
STPL	Shrem Tollways Private Limited
SUIPL	Suryavanshi Infrastructure Private Limited
SPV	Special Purpose Vehicle
the Trustee	Axis Trustee Services Limited

1. Executive Summary

1.1. Background

1.1.1. Shrem Infra Structure Private Limited (“"**the Sponsor**" or “**SISPL**”)) has floated an infrastructure investment trust under the SEBI InvIT Regulations called "**Shrem InvIT**" (“**Shrem InvIT**” or “**the Trust**”). SISPL is a part of the Shrem Group. The Shrem group was founded in 2010 by Nitan Chhatwal, and has diverse investment management experience in real estate, hospitality, health care, telecommunication and infrastructure sectors.

1.1.2. Shareholding of the Sponsor as on the Valuation Date is as under:

Sr. No.	Particulars	No. of Shares	%
1	Chhatwal Group Trust	7,50,00,000	93.75%
2	Shrem Impex Private Limited	50,00,000	6.25%
	Total	**8,00,00,000**	**100.0%**

Source: Investment Manager

1.1.3. Axis Trustee Services limited (“**the Trustee**”) has been appointed as the Trustee of the Shrem InvIT. Shrem Financial Private Limited ("**SFPL**" or "**the Investment Manager**") has been appointed as the Investment Manager to the Trust by the Trustee and will be responsible to carry out the duties of such person as mentioned under the SEBI InvIT Regulations.

1.1.4. I understand that Shrem InvIT, acting through the Trustee, shall acquire the equity held by the Sponsor or/and other shareholders in its 24 SPVs mentioned in para 1.1.6, indirectly by the acquisition of 100% equity stake in Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, “**the Holding Companies**”), following which units will be issued to the Sponsor and other shareholders by the Trust, which are to be listed on one or more Indian stock exchanges consequent to the proposed private placement of the Trust (“**the Proposed Transaction**”).

1.1.5. In this regard, the Investment Manager intends to undertake an independent valuation of the SPVs (as defined in para 1.1.6) as per the extant provisions of the SEBI InvIT Regulations issued by Securities and Exchange Board of India (“**SEBI**”).

1.1.6. **Financial Assets to be Valued**

The financial assets under consideration are valued at Enterprise Value of the following:

Sr. No.	Name of the SPV
	NHAI Hybrid Annuity Model Assets (“NHAI HAM SPVs”)
1	DBL Lucknow Sultanpur Highways Limited
2	DBL Kalmath Zaraph Highways Limited
3	DBL Yavatmal Wardha Highways Private Limited
4	DBL Tuljapur Ausa Highways Limited
5	DBL Wardha Butibori Highways Private Limited
6	DBL Mahagaon Yavatmal Highways Private Limited
	State Annuity and Toll Model (“State ATM SPVs”)
7	DBL Ashoknagar – Vidisha Tollways Limited
8	DBL Betul – Sarni Tollways Limited
9	DBL Hata – Dargawon Tollways Limited
10	DBL Silwani – Sultanganj Tollways Limited
11	DBL Sitamau– Suwasara Tollways Limited
12	DBL Mundi – Sanawad Tollways Limited
13	DBL Uchera – Nagod Tollways Limited
14	DBL Sardarpur Badnawar Tollways Limited
15	DBL Patan Rehli Tollways Limited
16	DBL Tikamgarh – Nowgaon Tollways Limited

	State Annuity Model ("State AM SPVs")
17	DBL Nadiad Modasa Tollways Limited
18	DBL Bankhlafata – Dogawa Tollways Limited
19	DBL Jaora – Sailana Tollways Limited
20	DBL Mundargi Harapanahalli Tollways Limited
21	DBL Hassan Periyapatna Tollways Limited
22	DBL Hirekerur Ranibennur Tollways Limited
	Toll Model ("Toll SPVs")
23	Jalpa Devi Tollways Limited
24	Suryavanshi Infrastructure Private Limited

(Together referred to as "the **SPVs**")

1.1.7. In this regard, the Investment Manager has appointed me, S. Sundararaman ("**Registered Valuer**" or "**RV**" or "**I**" or "**My**" or "**Me**") bearing IBBI registration number IBBI/RV/06/2018/10238 to undertake fair valuation of the SPVs at the enterprise level as per the extant provisions of the SEBI InvIT Regulations issued by SEBI. Enterprise Value ("**EV**") is described as the total value of the equity in a business plus the value of its debt and debt related liabilities, minus any cash or cash equivalents to meet those liabilities.

1.1.8. I declare that:

i. I am competent to undertake the financial valuation in terms of the SEBI InvIT Regulations:

ii. I am not an associate of the sponsor(s) or investment manager or trustee and I have not less than five years of experience in valuation of infrastructure assets

iii. I am independent and have prepared the Report on a fair and unbiased basis;

iv. I have valued the SPVs based on the valuation standards as specified / applicable as per SEBI InvIT Regulations.

1.1.9. This Report covers all the disclosures required as per the SEBI InvIT Regulations and the Valuation of the SPVs is impartial, true and fair and in compliance with the SEBI InvIT Regulations.

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1.2. Scope of Valuation

1.2.1. Valuation Base

Valuation Base means the indication of the type of value being used in an engagement. In the present case, I have determined the fair value of the SPVs at the enterprise level. Fair Value Bases defined as under:

Fair Value

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the valuation date. It is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction in the principal (or most advantageous) market at the measurement date under current market conditions (i.e. an exit price) regardless of whether that price is directly observable or estimated using another valuation technique. Fair value or Market value is usually synonymous to each other except in certain circumstances where characteristics of an asset translate into a special asset value for the party(ies) involved.

1.2.2. Valuation Date

Valuation Date is the specific date at which the value of the assets to be valued gets estimated or measured. Valuation is time specific and can change with the passage of time due to changes in the condition of the asset to be valued. Accordingly, valuation of an asset as at a particular date can be different from other date(s).

The Valuation Date considered for the fair enterprise valuation of the SPVs is 31st January 2020 ("**Valuation Date**"). The attached Report is drawn up by reference to accounting and financial information as on 31st January 2020. The RV is not aware of any other events having occurred since 31st January 2020 till date of this Report which he deems to be significant for his valuation analysis.

For the amount pertaining to the operating working capital, management of the Investment Manager has acknowledged to consider the provisional financial statements as on 31st January 2021 to carry out the valuation of the SPVs.

1.2.3. Premise of Value

Premise of Value refers to the conditions and circumstances how an asset is deployed. In the present case, RV has determined the fair enterprise value of the SPVs on a Going Concern Value defined as under:

Going Concern Value

Going Concern value is the value of a business enterprise that is expected to continue to operate in the future. The intangible elements of going concern value result from factors such as having a trained work force, an operational plant, necessary licenses, systems, and procedures in place etc.

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1.3. Summary of Valuation

I have assessed the fair enterprise value of each of the SPVs on a stand-alone basis by using the Discounted Cash Flow ("**DCF**") method under the income approach. Following table summarizes my explaination on the usage or non usage of different valuation methods:

Valuation Approach	Valuation Methodology	Used	Explanation
Cost Approach	Net Asset Value	No	NAV does not capture the future earning potential of the business.
Income Approach	Discounted Cash Flow	Yes	The revenue of all the SPVs, except for the Toll SPVs, is mainly derived from the annuity fees that are typically pre-determined with the relevant government authority and cannot be modified to reflect prevailing circumstances, other than annual adjustments to account for inflation and interest rate changes wherever applicable, as specified in the concession agreements. The Toll SPVs derive almost all of their revenue from their toll-road operations. The Toll SPVs are substantially dependent on the accuracy of the traffic volume forecasts for their respective projects. Accordingly, since all the SPVs are generating income based on pre-determined agreements / mechanism and since the Investment Manager has provided me the financial projections for the balance tenor of the concessions agreements, DCF Method under the income approach has been considered as the appropriate method for the present valuation exercise.
Market Approach	Market Price	No	The equity shares of the SPVs are not listed on any recognized stock exchange in India. Hence, I was unable to apply the market price method.
	Comparable Companies	No	In the absence of any exactly comparable listed companies with characteristics and parameters similar to that of the SPVs, I am unable to consider this method for the current valuation.
	Comparable Transactions	No	In the absence of adequate details about the Comparable Transactions, I was unable to apply the CTM method.

Under the DCF Method, the Free Cash Flow to Firm ("**FCFF**") has been used for the purpose of valuation of each of the SPVs. In order to arrive at the fair EV of the individual SPVs under the DCF Method, I have relied on provisional financial statements as at 31st January 2021 prepared in accordance with the Indian Accounting Standards (Ind AS) and the financial projections of the respective SPVs prepared by the Investment Manager as at the Valuation Date based on their best judgement.

The discount rate considered for the respective SPVs for the purpose of this valuation exercise is based on the Weighted Average Cost of Capital ("**WACC**") for each of the SPVs. As all the SPVs under considerations have executed projects under the BOT /DBFOT model, the operating rights of the underlying assets shall be transfered after the expiry of the concession period. At the end of the agreed concession period, the operating rights in relation to the roads, the obligation to maintain the road and the right to collect tolls from the vehicles using the road revert to the government entity that granted the concession by the SPVs. Accordingly, terminal period value

i.e. value on account of cash flows to be generated after the expiry of concession period has not been considered.

Based on the methodology and assumptions discussed further, RV has arrived at the fair enterprise value of the SPVs as on the Valuation Date:

Sr. No.	SPVs	Approximate Projection Period (Balance Concession Period)	WACC	Fair Enterprise Value (INR Mn)
1	DLSHL	13 Years 3 Months	7.8%	9,579
2	DKZHL	14 Years 2 Months	7.8%	4,204
3	DYWHL	13 Years 6 Months	7.8%	4,163
4	DTAHL	13 Years 10 Months	7.9%	3,523
5	DWBHL	13 Years 10 Months	7.8%	4,280
6	DMYHL	14 Years 4 Months	7.8%	4,772
7	DAVTL	6 Years 6 Months	8.3%	491
8	DBSTL	7 Years 3 Months	8.3%	1,757
9	DHDTL	9 Years 1 Months	8.3%	748
10	DSSTL	5 Years 2 Months	8.3%	791
11	Sitamau	5 Years 2 Months	8.3%	363
12	DMSTL	5 Years 3 Months	8.3%	703
13	DUNTL	6 Years 3 Months	8.3%	873
14	DSBTL	4 Years 4 Months	8.3%	338
15	DPRTL	9 Years 2 Months	8.3%	2,215
16	DTNTL	7 Years 4 Months	8.3%	963
17	DNMTL	5 Years 5 Months	8.5%	1,208
18	DBDTL	6 Years 2 Months	8.4%	778
19	DJSTL	6 Years 3 Months	8.4%	905
20	DMHTL	5 Years 8 Months	8.3%	1,060
21	DHPTL	5 Years 8 Months	8.3%	1,749
22	DHRTL	5 Years 8 Months	8.4%	1,257
23	JDTL	21 Years 7 Months	9.8%	18,388
24	SUIPL	12 Years 2 Months	10.1%	284
Total				**65,392**

(Refer Appendix 1 & 2 for the detailed workings)

Further to above considering that present valuation exercise is based on the future financial performance and based on opinions on the future credit risk, cost of debt assumptions, etc., which represent reasonable expectations at a particular point of time, but such information, estimates or opinions are not offered as predictions or as assurances that a particular level of income or profit will be achieved, a particular event will occur or that a particular level of income or profit will be achieved, a particular event will occur or that a particular price will be offered or accepted. Actual results achieved during the period covered by the prospective financial analysis will vary from these estimates and variations may be material. Accordingly, a quantitative sensitivity analysis is considered on the following unobservable inputs:

1. WACC by increasing / decreasing it by 1.0%
2. Expenses by increasing / decreasing it by 20%

1. Fair Enterprise Valuation Range based on WACC parameter (1.0%)

INR Mn

Sr. No.	SPVs	WACC + 1.0%	EV	Base WACC	EV	WACC - 1.0%	EV
1	DLSHL	8.8%	9,110	7.8%	9,579	6.8%	10,088
2	DKZHL	8.8%	4,005	7.8%	4,204	6.8%	4,420
3	DYWHL	8.8%	3,983	7.8%	4,163	6.8%	4,360
4	DTAHL	8.9%	3,361	7.9%	3,523	6.9%	3,699
5	DWBHL	8.8%	4,079	7.8%	4,280	6.8%	4,499
6	DMYHL	8.8%	4,550	7.8%	4,772	6.8%	5,014
7	DAVTL	9.3%	476	8.3%	491	7.3%	506
8	DBSTL	9.3%	1,693	8.3%	1,757	7.3%	1,807
9	DHDTL	9.3%	720	8.3%	748	7.3%	777
10	DSSTL	9.3%	773	8.3%	791	7.3%	810
11	Sitamau	9.4%	355	8.4%	363	7.4%	372
12	DMSTL	9.3%	687	8.3%	703	7.3%	720
13	DUNTL	9.3%	848	8.3%	873	7.3%	898
14	DSBTL	9.3%	331	8.3%	338	7.3%	345
15	DPRTL	9.3%	2,131	8.3%	2,215	7.3%	2,305
16	DTNTL	9.3%	933	8.3%	963	7.3%	994
17	DNMTL	9.3%	1,178	8.3%	1,208	7.3%	1,239
18	DBDTL	9.4%	757	8.4%	778	7.4%	800
19	DJSTL	9.4%	880	8.4%	905	7.4%	930
20	DMHTL	9.3%	1,035	8.3%	1,060	7.3%	1,086
21	DHPTL	9.3%	1,708	8.3%	1,749	7.3%	1,791
22	DHRTL	9.4%	1,229	8.4%	1,257	7.4%	1,287
23	JDTL	10.8%	16,844	9.8%	18,388	8.8%	20,149
24	SUIPL	11.1%	271	10.1%	284	9.1%	299
	Total of all SPVs		**61,940**		**65,392**		**69,197**

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2. Fair Enterprise Valuation Range based on Expense parameter (20%)

INR Mn

Sr. No.	SPVs	EV at Expenses + 20%	EV at Base Expenses	EV at Expenses - 20%
1	DLSHL	9,323	9,579	9,847
2	DKZHL	3,956	4,204	4,451
3	DYWHL	3,796	4,163	4,530
4	DTAHL	3,245	3,523	3,793
5	DWBHL	3,942	4,280	4,616
6	DMYHL	4,548	4,772	5,242
7	DAVTL	478	491	503
8	DBSTL	1,699	1,757	1,798
9	DHDTL	715	748	780
10	DSSTL	773	791	809
11	Sitamau	355	363	372
12	DMSTL	684	703	723
13	DUNTL	855	873	891
14	DSBTL	329	338	347
15	DPRTL	2,172	2,215	2,258
16	DTNTL	932	963	993
17	DNMTL	1,178	1,208	1,238
18	DBDTL	758	778	798
19	DJSTL	873	905	936
20	DMHTL	965	1,060	1,151
21	DHPTL	1,630	1,749	1,862
22	DHRTL	1,154	1,257	1,356
23	JDTL	17,648	18,388	19,124
24	SUIPL	256	284	203
		62,264	**65,392**	**68,620**

The above represents reasonable range of fair enterprise valuation of the SPVs.

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2. Procedures adopted for current valuation exercise

2.1. I have performed the valuation analysis, to the extent applicable, in accordance with ICAI Valuation Standards 2018 ("**IVS**") issued by the Institute of Chartered Accountants of India.

2.2. In connection with this analysis, I have adopted the following procedures to carry out the valuation analysis:

2.2.1. Requested and received financial and qualitative information relating to the SPVs;

2.2.2. Obtained and analyzed data available in public domain, as considered relevant by me;

2.2.3. Discussions with the Investment Manager on:

- Understanding of the business of the SPVs – business and fundamental factors that affect its earning-generating capacity including strengths, weaknesses, opportunities and threats analysis and historical and expected financial performance;

2.2.4. Undertook industry analysis:

- Research publicly available market data including economic factors and industry trends that may impact the valuation;
- Analysis of key trends and valuation multiples of comparable companies/comparable transactions, if any, using proprietary databases subscribed by me;

2.2.5. Analysis of other publicly available information;

2.2.6. Selection of valuation approach and valuation methodology/(ies), in accordance with IVS, as considered appropriate and relevant by me;

2.2.7. Determination of fair EV of the SPVs.

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3. Overview of Sponsor, InvIT and SPVs

Sponsor / Shrem Infra Structure Private Limited (SISPL)

3.1. SISPL is a part of the Shrem group. The Shrem group was founded in 2010 by Nitan Chhatwal, and has diverse investment management experience in real estate, hospitality, health care, telecommunication and infrastructure sectors. The Sponsor effectively owns majority of the equity share capital of Shrem Infraventure Private Limited, Shrem Roadways Private Limited and Shrem Tollway Private Limited (together, "**the Holding Companies**").

Shareholding of the Sponsor as on the Valuation Date is as under:

Sr. No.	Particulars	No. of Shares	%
1	Chhatwal Group Trust	7,50,00,000	93.75%
2	Shrem Impex Private Limited	50,00,000	6.25%
	Total	**8,00,00,000**	**100.0%**

3.2. **Holding Companies**

Shrem Infraventure Private Limited ("SIPL")

SIPL currently owns equity stake in the NHAI HAM SPVs as at the Report date. I understand from the Investment Manager that SIPL is proposing to acquire balance equity stake in 6 NHAI HAM SPVs before the completion of the Proposed Transaction as defined in para 1.1.4.

Shareholding of the SIPL as on the Valuation Date is as under:

Sr. No.	Particulars	No. of Shares	%
1	Sponsor/ SISPL	7,090,000	70.90%
2	Chhatwal Group Trust	2,300,000	23.00%
3	RS Infra Advisors and Consultants LLP	600,000	6.00%
4	Nitan Chhatwal	5,000	0.05%
5	Hitesh Chhatwal	5,000	0.05%
	Total	**10,000,000**	**100.0%**

I understand that the proposed Shrem InvIT, acting through the Trustee, shall acquire the equity held by the Sponsor or/and other shareholders in SIPL following which units will be issued to the Sponsor and other shareholders by the Trust, which are to be listed on one or more Indian stock exchanges consequent to the proposed private placement of the Trust.

Shrem Roadways Private Limited ("SRPL")

SRPL currently owns equity stake in 10 State ATM SPVs, 6 State AM SPVs and 1 State Toll SPV (SUIPL) as at the Valuation Date. I understand from the Investment Manager that SRPL is proposing to acquire balance equity stake in 10 State ATM SPVs, 6 State AM SPVs and 1 State Toll SPV (SUIPL) before the completion of the Proposed Transaction as defined in para 1.1.4.

Shareholding of the SRPL as on the Valuation Date is as under:

Sr. No.	Particulars	No. of Shares	%
1	Sponsor/ SISPL	93,90,000	93.90%
2	RS Infra Advisors and Consultants LLP	600,000	6.00%
3	Nitan Chhatwal	5,000	0.05%
4	Hitesh Chhatwal	5,000	0.05%
	Total	**10,000,000**	**100.0%**

I understand that the proposed Shrem InvIT, acting through the Trustee, shall acquire the equity held by the Sponsor or/and other shareholders in SRPL following which units will be issued to the Sponsor and other shareholders by the Trust, which are to be listed on one or more Indian stock exchanges consequent to the proposed private placement of the Trust.

Shrem Tollway Private Limited ("STPL")

STPL currently owns equity stake in JDTL as at the Report date. I understand from the Investment Manager that STPL is proposing to acquire balance equity stake in JDTL before the completion of the Proposed Transaction as defined in para 1.1.4.

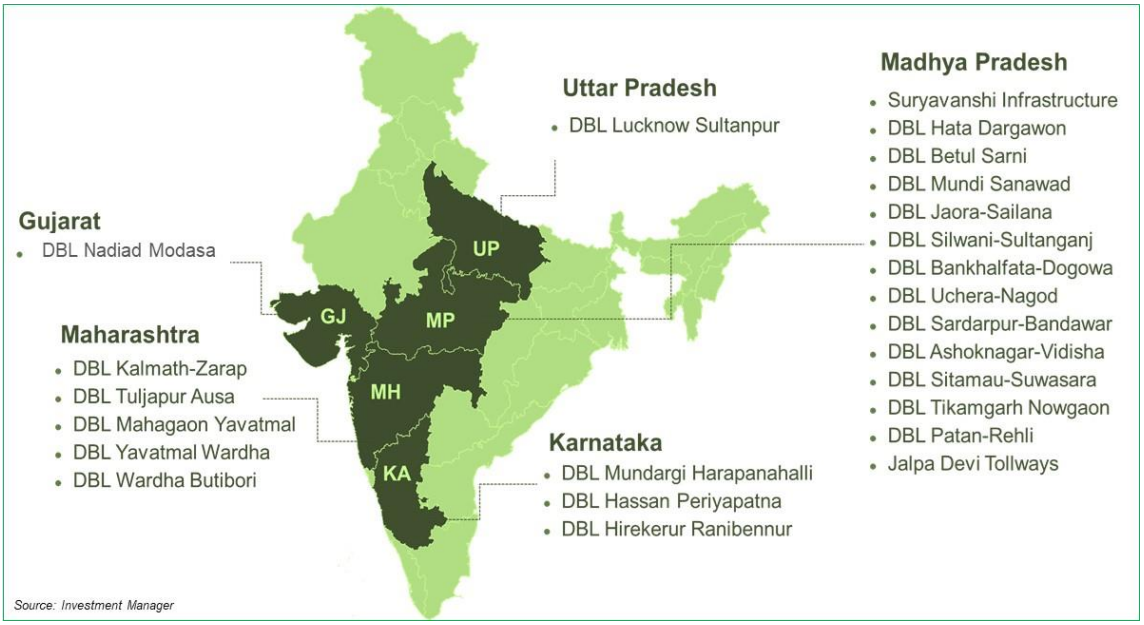
Shareholding of the STPL as on the Valuation Date is as under:

Sr. No.	Particulars	No. of Shares	%
1	Sponsor/ SISPL	552,093	55.21%
2	Shrem Investment Private Limited	287,907	28.79%
3	RS Infra Advisors and Consultants LLP	150,000	15.00%
4	Nitan Chhatwal	5,000	0.05%
5	Hitesh Chhatwal	5,000	0.05%
	Total	**10,000,000**	**100.0%**

I understand that the proposed Shrem InvIT, acting through the Trustee, shall acquire the equity held by the Sponsor or/and other shareholders in STPL following which units will be issued to the Sponsor and other shareholders by the Trust, which are to be listed on one or more Indian stock exchanges consequent to the proposed private placement of the Trust.

I have been represented by the Investment Manager that there is no change in shareholding pattern of Holding Companies from the Valuation Date till the date of this Report.

3.3. Following is a map of India showing the area covered by the SPVs of the Trust:



Background of the SPVs

3.4. **DBL Lucknow Sultanpur Highways Limited ("DLSHL")**

3.4.1. Summary of details of DLSHL are as follows:

Parameters	Details
Total Length	666.77 Lane Kms
Nos. of Lanes	4
NH / SH	NH 56 (New NH 731)
State Covered	Uttar Pradesh
Area (Start and End)	Lucknow - Sultanpur
Bid Project Cost	INR 2016 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	NHAI
COD Date	30 April 2019
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	910 days from Appointed date i.e. 08th May 2017 plus 15 years

Source: Investment Manager

3.4.2. The corridor forms a part of the existing road from 11.500 kilometer to 134.700 kilometer (approximately 127.425 kilometer) on the Lucknow - Sultanpur section of NH 56 (new NH 731).

Sr. No.	Salient Features	As per Site
1	Total Length of the Project Highway	127.425 Km
2	No of Bypass Roads	4 Nos.
3	Flexible Pavement for Main carriageway (2 Lane)	---
4	Slip Roads with 5.5 m Width	14.824 Km
5	Toll Plaza	2 Nos
6	Bus Bays / Bus Shelters	43 Nos .
7	Truck Lay Bays	2 Nos
8	Major Junction	14 Nos.
9	Minor Junctions	110 Nos .
10	Vehicle Underpass	4 Nos.
11	Pedestrian/Cattle Underpass	6 Nos.
12	ROB	1 No
13	Major Bridges	1 No
14	Minor Bridges for Main Carriageway	13 Nos.
15	Box/Slab Culverts	75 Nos.
16	Pipe Culverts	184 Nos.

3.4.3. The shareholding of DLSHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	10,70,802	51.00%
2	Shrem Infraventure Pvt .Ltd	10,28,709	49.00%
3	Others	100	0.00%
	Total	**20,99,611**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.4.4. Dilip Buildcon Limited ("**DBL/Sub Contractor**") was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.4.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions (routine operation and maintenance as well as major maintenance and repairs) required to be discharged under the Concession Agreement.

3.4.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for pictures of this SPV

3.5. **DBL Kalmath Zaraph Highways Limited ("DKZHL")**

3.5.1. Summary of details of DKZHL are as follows:

Parameters	Details
Total Length	267.40 Lane Kms
Nos. of Lanes	4
NH / SH	NH 17 (new NH 66)
State Covered	Maharashtra
Area (Start and End)	Kalmath - Zaraph
Bid Project Cost	INR 914 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	MoRTH
COD Date	23 March 2020
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	730 days from Appointed date i.e. 01st February 2018 plus 15 years

Source: Investment Manager

3.5.2. The corridor forms a part of the existing road from kilometer 406.030 to kilometer 450.170 (43.905 kilometer) on the Kalmath - Zarap section of NH 17 (new NH 66).

Sr. No.	Salient Features	As per Site
1	Total Length of Main Carriageway with Rigid Pavement (Considering both sides)	67.121 Km
2	Total Length of Main Carriageway with Flexible Pavement (Considering both sides)	20.799 Km
3	Total length of Service Roads	23.530 Km
4	Total length of Slip Roads	---
5	No of Toll Plazas	1 No
6	No of Bus Bays with Bus Shelters	33Nos. Completed 13 Nos. Construction Pending
7	Number of Truck Lay Bays	274+020 on LHS Completed 274+280 on RHS Construction Pending
8	No of Rest Areas	---
9	No of Major Junctions	5 Nos.
10	No of Minor Junctions	61 Nos.
11	No of Vehicular underpasses	10 Nos.
12	No of Light Vehicular underpasses	10 Nos.
13	No of Pedestrian underpasses	2 No.
14	No of Subways	2 No.
15	No of Flyovers	2 No.
16	No of Major Bridges	13 Nos.
17	No of Minor Bridges	24 Nos.
18	No of Hume Pipe Culverts	252 Nos.
19	No of Box / Slab Culverts	40 Nos.

3.5.3. The shareholding of DKZHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	25,500	51.00%

2	Shrem Infraventure Pvt .Ltd	24,400	48.80%
3	Others	100	0.20%
	Total	**50,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.5.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.5.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.5.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.6. **DBL Yavatmal Wardha Highways Private Limited ("DYWHL")**

3.6.1. Summary of details of DYWHL are as follows:

Parameters	Details
Total Length	370.55 Lane Kms
Nos. of Lanes	4
NH / SH	NH 361
State Covered	Maharashtra
Area (Start and End)	Yavatmal - Wardha
Bid Project Cost	INR 1043 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	NHAI
COD Date	02 August 2019
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	910 days from Appointed date i.e. 05th February 2018 plus 15 years

Source: Investment Manager

3.6.2. The corridor forms a part of the existing road kilometer 400.575 to kilometer 465.500 of Yavatmal-Wardha section of NH 361.

Sr. No.	Salient Features	As per Site
1	Total Length of the Project Highway	64.925 Km
2	Widening	47.115 Km
3	New Alignment including bypass	6.995 Km
4	Approaches to underpasses	10.815 Km
5	No of Bypass Roads	2 Nos.
6	Service Roads with 7.5 m Width	9.490 Km
7	Slip Roads with 5.5 m Width	13.470 Km
8	Toll Plaza	1 No.
9	Bus Bays / Bus Shelters	32 Nos.
10	Truck Lay Bays	1 No.
11	Rest Area	1 No.
12	Major Junction	3 Nos.
13	Minor Junctions	26 Nos.
14	Vehicle Underpass	3 Nos.
15	Light Vehicle Underpass	6 Nos.
16	Pedestrian Underpass	2 Nos.
17	Cattle Underpass	1 No.
18	Vehicle Overpass	1 No. with 2 Lane Width
19	Flyover	2 Nos.
20	Major Bridges	3 Nos.
21	Minor Bridges for Main Carriageway	30 Nos.
22	Minor Bridges for Service Road- 2 Lane width	16 Nos.
23	Box/Slab Culverts	39 No.
24	Pipe Culverts	76 Nos.

3.6.3. The shareholding of DYWHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	50,900	50.90%

2	Shrem Infraventure Pvt .Ltd	49,000	49.00%
3	Others	100	0.10%
	Total	**1,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.6.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.6.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.6.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.7. **DBL Tuljapur Ausa Highways Limited ("DTAHL")**

3.7.1. Summary of details of DTAHL are as follows:

Parameters	Details
Total Length	376.96 Lane Kms
Nos. of Lanes	4
NH / SH	NH 361
State Covered	Maharashtra
Area (Start and End)	Tuljapur - Ausa
Bid Project Cost	INR 911 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	NHAI
COD Date	18 November 2019
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	910 from Appointed date i.e. 22nd November 2017 plus 15 years

Source: Investment Manager

3.7.2. The corridor forms a part of the existing road from kilometer 0.000 to kilometer 55.835 (existing chainage: kilometer 416.000 to kilometer 470.000) (approximately 67.428 kilometer) on the Tuljapur-Ausa (including Tuljapur bypass) section of NH 361.

Sr. No.	Salient Features	As per Site
1	Total Length of Main Carriageway 4 Lane with Rigid Pavement	67.428 Km
2	Total length of Service Roads	18.85 Km
3	Total length of Slip Roads	0.96 Km
4	No of Toll Plazas	1 No.
5	No of Bus Bays with Bus Shelters	34 Nos.
6	Number of Truck Lay Bays	1 No
7	No of Rest Areas	1 No
8	No of Major Junctions	8 Nos.
9	No of Minor Junctions	49 Nos.
10	No of Vehicular underpasses	8 Nos.
11	No of Light Vehicular underpasses	6 Nos.
12	No of Pedestrian underpasses	6 Nos.
13	No of Minor Bridges	29 Nos.
14	No of Hume Pipe Culverts	115 Nos.
15	No of Box / Slab Culverts	35 Nos.

3.7.3. The shareholding of DTAHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	73,192	50.94%
2	Shrem Infraventure Pvt .Ltd	70,409	49.00%
3	Others	90	0.06%
	Total	**1,43,691**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.7.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.7.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.7.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.8. **DBL Wardha Butibori Highways Private Limited ("DWBHL")**

3.8.1. Summary of details of DWBHL are as follows:

Parameters	Details
Total Length	352.67 Lane Kms
Nos. of Lanes	4
NH / SH	NH 361
State Covered	Maharashtra
Area (Start and End)	Wardha - Butibori
Bid Project Cost	INR 1066 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	NHAI
COD Date	20 November 2019
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	910 days from appointed date i.e. 30th November 2017 plus 15 years

Source: Investment Manager

3.8.2. The corridor forms a part of the existing road from kilometer 28.800 to kilometer 85.374 (approximately 59.374 kilometer) on the Wardha-Butibori section of NH 361.

Sr. No.	Salient Features	As per Site
1	Total Length of Main Carriageway 4 Lane with Rigid Pavement	59.190 Km
2	Total length of Service Roads	8.80 Km
3	Total length of Slip Roads	19.10 Km
4	No of Toll Plazas	1 No.
5	No of Bus Bays with Bus Shelters	28 Nos.
6	Number of Truck Lay Bays	2 No
7	No of Rest Areas	Nil
8	No of Major Junctions	Nil
9	No of Minor Junctions	26 Nos.
10	No of Vehicular underpasses	18 Nos.
11	No of Light Vehicular underpasses	4 Nos.
12	No of Pedestrian underpasses	2 Nos.
13	No of Grade Separators	2 Nos.
14	No of Major Bridges	3 Nos.
15	No of Minor Bridges	22 Nos.
16	No of ROBs	2 Nos.
17	No of Hume Pipe Culverts	85 Nos.
18	No of Box / Slab Culverts	44 Nos.

3.8.3. The shareholding of DWBHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	1,04,571	50.95%
2	Shrem Infraventure Pvt .Ltd	1,00,566	49.00%
3	Others	100	0.05%
	Total	**2,05,237**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.8.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.8.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.8.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.9. **DBL Mahagaon Yavatmal Highways Private Limited ("DMYHL")**

3.9.1. Summary of details of DMYHL are as follows:

Parameters	Details
Total Length	451.24 Lane Kms
Nos. of Lanes	4
NH / SH	NH 361
State Covered	Maharashtra
Area (Start and End)	Mahagaon - Yavatmal
Bid Project Cost	INR 1161 Cr
PPP Model	DBFOT
Project Type	HAM
Concession Granted by	NHAI
COD Date	23 May 2020
Nos. of Annuities	30
Annuity Amount	As per Concession Agreement
Concession Period (CP)	910 days from appointed date i.e. 28th February 2018 plus 15 years

Source: Investment Manager

3.9.2. The corridor forms a part of the existing road from kilometer 320.580 to kilometer 400.575 (approximately 80.195 kilometer) on the Mahagaon to Yavatmal section of NH 361.

Sr. No.	Salient Features	As per Site
1	Total Length of Main Carriageway	79.99 Km
2	Total length of Service Roads	15.340 Km
3	Total length of Slip Roads	10.54 Km
4	No of Toll Plazas	1 No.
5	No of Bus Bays with Bus Shelters	38 Nos.
6	Number of Truck Lay Bays	1 No
7	No of Rest Areas	1 No
8	No of Major Junctions	07 Nos.
9	No of Minor Junctions	45 Nos.
10	No of Vehicular underpasses	5 Nos.
11	No of Light Vehicular underpasses	5 Nos.
12	No of Small Vehicular Underpass	1 No
13	No of Pedestrian underpasses	3 Nos.
14	No of Subways	Nil
15	No of Flyovers	Nil
16	No of Major Bridges	2 Nos.
17	No of Minor Bridges	39 Nos.
18	No of Hume Pipe Culverts	133 Nos.
19	No of Box / Slab Culverts	24 Nos.

3.9.3. The shareholding of DMYHL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	1,45,702	99.93%
2	Others	100	0.07%
	Total	**1,45,802**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.9.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.9.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.9.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.10. **DBL Ashoknagar - Vidisha Tollways Limited ("DAVTL")**

3.10.1. Summary of details of DAVTL are as follows:

Parameters	Details
Total Length	107.04 Lane Kms
Nos. of Lanes	2
NH / SH	NA (Major District Road)
State Covered	Madhya Pradesh
Area (Start and End)	Ashoknagar - Vidisha
Project Cost	INR 89 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	26 July 2014
Nos. of Annuities	26
Annuity Amount	INR 50.4 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 09th November 2013

Source: Investment Manager

3.10.2. The corridor forms a part of the existing road from bypass junction of Ashoknagar (kilometer 0/10) to Bangla Chauraha (kilometer 35.68) (approximately 35.68 kilometer), on the section of major district road in Madhya Pradesh.

Sr. No.	Salient Features	As per Site
1	Total Length	35.57 Km
2	Total Length of 2 Lane (Flexible)	33.77 Km
3	Total Length of 4 Lane (Flexible)	1.80 Km
4	Toll Plaza	1 No.
5	Bus Shelters	16 Nos.
6	Truck Lay Bays (Both sides)	2 Nos.
7	Major Junction	2 Nos.
8	Minor Junctions	9 Nos.
9	ROB	Nil
10	Major Bridges	1 No.
11	Minor Bridges	10 Nos.
12	Pipe Culverts	15 Nos.
13	Slab/Box Culverts	19 Nos.

3.10.3. The shareholding of DAVTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	1,99,59,900	100.00%
2	Others	100	0.00%
	Total	**1,99,60,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.10.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.10.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.10.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.11. **DBL Betul - Sarni Tollways Limited ("DBSTL")**

3.11.1. Summary of details of DBSTL are as follows:

Parameters	Details
Total Length	373.30 Lane Kms
Nos. of Lanes	2
NH / SH	SH 43
State Covered	Madhya Pradesh
Area (Start and End)	Betul - Sarni
Project Cost	INR 324 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	12 May 2015
Nos. of Annuities	26
Annuity Amount	INR 154.8 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 07th April 2014

Source: Investment Manager

3.11.2. The corridor forms a part of the existing road from kilometer 0.00 (Kamani Gate Betul) to kilometer 124.10 (approximately 124.10 kilometer) on the section of SH 43.

Sr. No.	Salient Features	As per Site
1	Two lane length with earthen shoulder	86.656 Km
2	Two lane with paved shoulder	27.51 Km
3	Four Lane	5.25 Km
4	Two lane Rigid Pavement	4.684 Km
5	Bypasses	Nil
6	Junctions	15 Nos.
7	Toll Plaza	2 Nos.
8	Bus Bays	22 Nos.
9	Truck Lay bye	2 Nos.
10	ROB	Nil
11	Major Bridges	9 Nos.
12	Minor Bridges	36 Nos.
13	Pipe Culverts	245 Nos.
14	Slab/Box Culverts	36 Nos.

3.11.3. The shareholding of DBSTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	16,60,700	99.99%
2	Others	100	0.01%
	Total	**16,60,800**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.11.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.11.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.11.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.12. **DBL Hata - Dargawon Tollways Limited ("DHDTL")**

3.12.1. Summary of details of DHDTL are as follows:

Parameters	Details
Total Length	193.20 Lane Kms
Nos. of Lanes	2
NH / SH	SH 48
State Covered	Madhya Pradesh
Area (Start and End)	Hata - Dargawon
Project Cost	INR 101 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	06 March 2017
Nos. of Annuities	26
Annuity Amount	INR 70.2 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 10th April 2016

Source: Investment Manager

3.12.2. The corridor forms a part of the existing road from kilometer 0.00 (Damoh naka in Ilatta town) to kilometer 64.40 (at Dargawan Tiraha) (approximately 64.40 kilometer), section of the SH 48.

Sr. No.	Salient Features	As per Site
1	Total Length of 2 Lane (Flexible)	64.40 Kms.
2	Toll Plaza	1 No.
3	Bus Bays / Bus Shelters	14 Nos.
4	Truck Lay Bays	Nil
5	Major Junction	3 Nos.
6	Minor Junctions	11 Nos.
7	ROB	Nil
8	Major Bridges	02Nos.
9	Minor Bridges	15 Nos.
10	Pipe Culverts	74 Nos.
11	Slab/Box Culverts	20 Nos.

3.12.3. The shareholding of DHDTL as on Valuation Date is as follows:

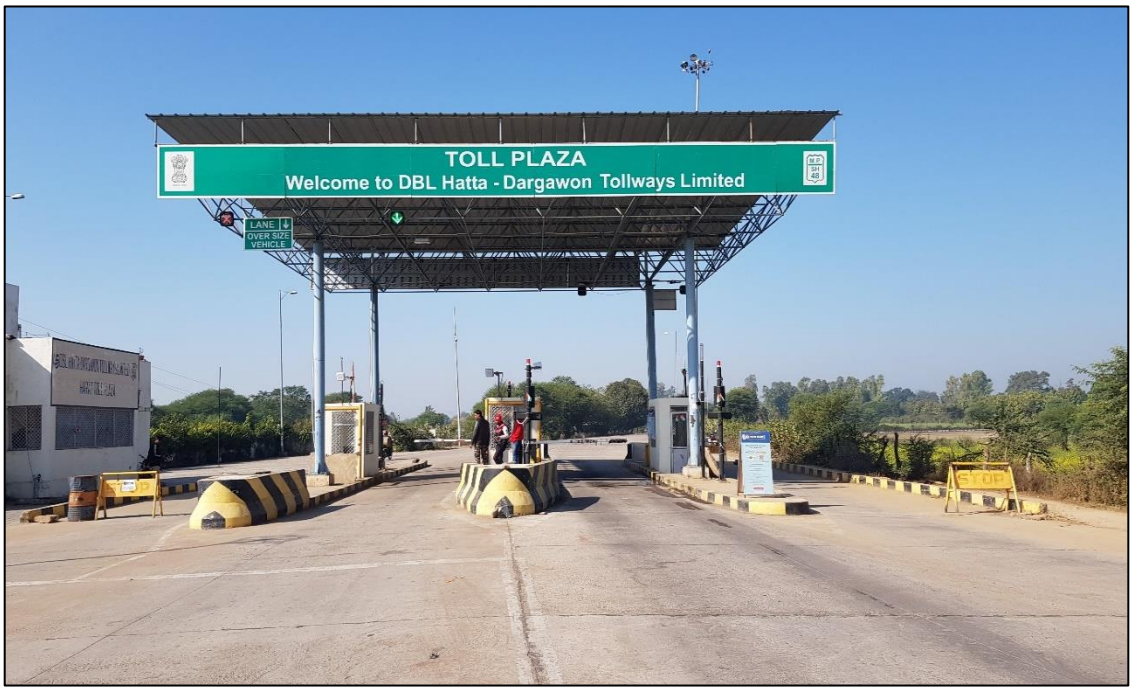
Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	79,656	99.87%
2	Others	100	0.13%
	Total	**79,756**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.12.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.12.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.12.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.



3.13. **DBL Silwani - Sultanganj Tollways Limited ("DSSTL")**

3.13.1. Summary of details of DSSTL are as follows:

Parameters	Details
Total Length	228 Lane Kms
Nos. of Lanes	2
NH / SH	SH 15
State Covered	Madhya Pradesh
Area (Start and End)	Silwani - Sultanganj
Project Cost	INR 134 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	25 March 2013
Nos. of Annuities	26
Annuity Amount	INR 94.9 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 27th February 2012

Source: Investment Manager

3.13.2. The corridor forms a part of the existing road from kilometer 0.00 to kilometer 75.995 (approximately 76.00 kilometer) on the Silwani – Sultanganj – Jaisinghnagar - Sagar Road section of SH 15.

Sr. No.	Salient Features	As per Site
1	Total Length (Flexible)	75.995 Km
2	Two lanes with Paved Shoulder	3.700 Kms
3	Two lanes with Granular Shoulder	72.295 Kms
4	Reconstruction	75.995 Km
5	Realignment/Bypass	Nil
6	Toll Plaza	02 Nos.
7	Bus Bays / Bus Shelters	6 Nos.
8	Truck Lay Bays	Nil
9	Major Junction	3 Nos.
10	Minor Junctions	15 Nos.
11	ROB	Nil
12	Level Crossing	Nil
13	Major Bridges	01 No
14	Minor Bridges	17 Nos.
15	Box/ Slab Culverts	11 Nos.
16	Pipe Culverts	134 Nos.

3.13.3. The shareholding of DSSTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	9,99,900	99.99%
2	Others	100	0.01%
	Total	**10,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.13.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th

August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.13.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.13.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.14. **DBL Sitamau- Suwasara Tollways Limited ("Sitamau")**

3.14.1. Summary of details of Sitamau are as follows:

Parameters	Details
Total Length	104.91 Lane Kms
Nos. of Lanes	2
NH / SH	NA (Major District Road)
State Covered	Madhya Pradesh
Area (Start and End)	Sitamau- Suwasara
Project Cost	INR 65 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	28 March 2013
Nos. of Annuities	26
Annuity Amount	INR 36.9 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 19th March 2012

Source: Investment Manager

3.14.2. The corridor forms a part of the existing road from kilometer 0/00 to kilometer 34/000 (approximately 34.97 kilometer) on the Sitamau – Basai - Suwasara section of major district road in Madhya Pradesh.

Sr. No.	Salient Features	As per Site
1	Total project length	34.959 Km
2	Four lane divided carriageway	0.550 Km
3	Two lane with paved shoulder	2.559 Km
4	Bypass realignment	0.200 Km
5	Intermediate lane with granular shoulder	31.650 Km
6	Rigid pavement-two lane with paved shoulder	2.109 Km
7	Flexible pavement	32.850 Km
8	Toll plaza	1 No.
9	Bus bays / Bus shelters	24 Nos.
10	Truck lay bays	--
11	Major junction	1 No.
12	Minor Junctions	11 no.
13	Major Bridges	2 No.
14	Minor Bridges	7 No.
15	Pipe Culverts	25 Nos.
16	Slab/Box Culverts	5 Nos.

3.14.3. The shareholding of Sitamau as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	77,49,900	100.00%
2	Others	100	0.00%
	Total	**77,50,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.14.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.14.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.14.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.15. **DBL Mundi - Sanawad Tollways Limited ("DMSTL")**

3.15.1. Summary of details of DMSTL are as follows:

Parameters	Details
Total Length	202.89 Lane Kms
Nos. of Lanes	2
NH / SH	NA (Major District Road)
State Covered	Madhya Pradesh
Area (Start and End)	Mundi - Sanawad
Project Cost	INR 141 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	15 May 2013
Nos. of Annuities	26
Annuity Amount	INR 82.8 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 31st August 2012

Source: Investment Manager

3.15.2. The corridor forms a part of the existing road from kilometer 0.00 (at Mundi) to kilometer 64.400 (at Sanawad town) (approximately 67.63 kilometer) on the Mundi – Punasa – Sulgaon - Sanawad section of the major district road in Madhya Pradesh.

Sr. No.	Salient Features	As per Site
1	Total Project Length	67.633 Km
2	Total Length of 2 Lane (Flexible)	65.397 Km
3	Total Length of 4 Lane (Flexible)	2.236 Km
4	Rigid Pavement	1.09 Km
5	Bypass/ Realignment	2.920Km./1.35 Km
6	Toll Plaza	1 No.
7	Bus Bays / Bus Shelters	56 nos.
8	Truck Lay Bays	Nil
9	Major Junction	1 No.
10	Minor Junctions	20 Nos.
11	ROB	Nil
12	Major Bridges	1 No.
13	Minor Bridges	24 Nos.
14	Pipe Culverts	88 Nos
15	Slab/Box Culverts	16 Nos

3.15.3. The shareholding of DMSTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	9,99,900	99.99%
2	Others	100	0.01%
	Total	**10,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.15.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th

August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.15.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.15.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.16. **DBL Uchera - Nagod Tollways Limited ("DUNTL")**

3.16.1. Summary of details of DUNTL are as follows:

Parameters	Details
Total Length	166.80 Lane Kms
Nos. of Lanes	2
NH / SH	SH 56
State Covered	Madhya Pradesh
Area (Start and End)	Uchera - Nagod
Project Cost	INR 116 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
Appointed Date	15 May 2014
Nos. of Annuities	26
Annuity Amount	INR 84.6 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 20th November 2012

Source: Investment Manager

3.16.2. The corridor forms a part of the existing road from kilometer 32.00 (near Nagod NH 75) to kilometer 87.00 (near Uttar Pradesh Border) including 1.70 kilometer Nagod bypass (approximately 55.60 kilometer) on the section of SH 56.

Sr. No.	Salient Features	As per Site
1	Length of 2-Lane without paved shoulder	50.100 Km
2	Length of 2-Lane with paved shoulder	2.600 Km
3	Length of 4-Lane road	1.2 Km
4	Length of Nagod Bypass	1.700 Km
5	Toll Plaza	1 No.
6	Bus Bays / Bus Shelters	7 Nos.
7	Truck Lay Bays	1 No.
8	Major Junction	4 Nos.
9	Minor Junctions	9 Nos.
10	Major Bridges	2 Nos.
11	Minor Bridges	10 Nos.
12	Box/Slab Culverts	30 Nos.
13	Pipe Culverts	92 Nos.

3.16.3. The shareholding of DUNTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	3,19,99,900	100.00%
2	Others	100	0.00%
	Total	**3,20,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.16.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.16.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.16.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.17. **DBL Sardarpur Badnawar Tollways Limited ("DSBTL")**

3.17.1. Summary of details of DSBTL are as follows:

Parameters	Details
Total Length	129 Lane Kms
Nos. of Lanes	2
NH / SH	SH 34
State Covered	Madhya Pradesh
Area (Start and End)	Sardarpur - Badnawar
Project Cost	INR 97 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	09 June 2012
Nos. of Annuities	26
Annuity Amount	INR 47.1 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 16th December 2011

Source: Investment Manager

3.17.2. The corridor forms a part of the existing road from kilometer 0/00 to kilometer 43/300 (approximately 43.00 kilometer) on the Sardarpur - Badnawar Road section of SH 34.

Sr. No.	Salient Features	As per Site
1	Total Length of 2 Lane (Flexible)	42.976 Km
2	Widening	Nil
3	Reconstruction	42.976 Km
4	Realignment/Bypass	Nil
5	Toll Plaza	Km8+600
6	Bus Bays / Bus Shelters	16 Nos.
7	Truck Lay Bays	01 No.
8	Rest Areas	Nil
9	Major Junction	02 Nos.
10	Minor Junctions	12 Nos.
11	ROB/RUB	01 No.
12	Under Passes(VUP/PUP/FO)	Nil
13	Total Major Bridges	-
14	Total Minor Bridges	17 Nos.
15	Total Pipe Culverts	22 Nos.
16	Total Slab Culverts	24 Nos.

3.17.3. The shareholding of DSBTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	2,49,900	99.96%
2	Others	100	0.04%
	Total	**2,50,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.17.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th

August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.17.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.17.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.18. **DBL Patan Rehli Tollways Limited ("DPRTL")**

3.18.1. Summary of details of DPRTL are as follows:

Parameters	Details
Total Length	259.80 Lane Kms
Nos. of Lanes	2
NH / SH	SH 15
State Covered	Madhya Pradesh
Area (Start and End)	Patan - Rehli
Project Cost	INR 262 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	31 March 2017
Nos. of Annuities	26
Annuity Amount	INR 176.4 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 10th April 2016

Source: Investment Manager

3.18.2. The corridor forms a part of the existing road from kilometer 31/10 of SH 15 Rehli – Gorjhamar - Patan Chok and cross the junction of kilometer 113/00 of Rehli Gourjhamar SH 15 including bypass of Rehli which is about 4.4 kilometer and terminated at kilometer 38/10 (approximately 86.60 kilometer) on the section of SH 15.

Sr. No.	Salient Features	As per Site
1	Total Length of Stretch	86.600 Kms
1a	Built-up Location (4-Lane)	2.200 Kms
1b	Built-up Location (2-Lane with Paved Shoulder)	4.600 Kms
1c	Forest Area (Single Lane)	21.400 Kms
1d	Two Lane with Granular Shoulder including Bypass	58.400 Kms
2	Toll Plaza	02 Nos.
3	Bus Bays / Bus Shelters	16 Nos.
4	Truck Lay Bays	Nil
5	Major Junction	06 Nos.
6	Minor Junctions	14 Nos.
7	ROB	Nil
8	Major Bridges	05 Nos.
9	Minor Bridges	19 Nos.
10	Box/Slab Culverts	20 Nos.
11	Pipe Culverts	86 Nos.
12	CUP	4 Nos.

3.18.3. The shareholding of DPRTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	1,00,935	99.90%
2	Others	100	0.10%
	Total	**1,01,035**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.18.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.18.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.18.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.19. **DBL Tikamgarh - Nowgaon Tollways Limited ("DTNTL")**

3.19.1. Summary of details of DTNTL are as follows:

Parameters	Details
Total Length	229.20 Lane Kms
Nos. of Lanes	2
NH / SH	SH -10 and NH -76
State Covered	Madhya Pradesh
Area (Start and End)	Tikamgarh - Nowgaon
Project Cost	INR 130 Cr
PPP Model	DBFOT
Project Type	Toll + Annuity
Concession Granted by	MPRDC
COD Date	26 May 2015
Nos. of Annuities	26
Annuity Amount	INR 89.1 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 08th August 2014

Source: Investment Manager

3.19.2. The corridor forms a part of the existing road from Y-junction in kilometer 10/8 at Tikamgarh-Malehra road (SH 10) to kilometer 107 of Jhansi-Nowgaon (NH 76) (approximately 76.40 kilometer), the section of major district road in Madhya Pradesh.

Sr. No.	Salient Features	As per Site
1	Total Length	77.515 km
2	Length of 2-Lane with earthen shoulder	64.115 km
3	Length of 2-Lane with paved shoulder	10.000 Km
4	Length of 4-Lane road	3.400 Km
5	Length of Jatara Bypass	8.400 Km
6	Toll Plaza	2 Nos.
7	Bus Shelters	8 No
8	Truck Lay Bays	Nil
9	Major Junction	6 Nos.
10	Minor Junctions	14 Nos.
11	Major Bridges	3 Nos.
12	Minor Bridges	12 Nos.
13	Box/Slab Culverts	36 Nos.
14	Pipe Culverts	60 Nos.

3.19.3. The shareholding of DTNTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	8,48,362	99.99%
2	Others	100	0.01%
	Total	**8,48,462**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.19.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.19.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.19.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.20. **DBL Nadiad Modasa Tollways Limited ("DNMTL")**

3.20.1. Summary of details of DNMTL are as follows:

Parameters	Details
Total Length	325.20 Lane Kms
Nos. of Lanes	2
NH / SH	SH 59
State Covered	Gujarat
Area (Start and End)	Nadiad - Modasa
Project Cost	INR 207 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	GSRDC
COD Date	31 December 2013
Nos. of Annuities	24
Annuity Amount	INR 174.6 Mn
Concession Period (CP)	14 years from Appointed date i.e. 03rd July 2012

Source: Investment Manager

3.20.2. The corridor forms a part of section Nadiad – Madhudha – Kathial – Kapadwanj – Bayad - Modasa from kilometer 0.60 to kilometer 109.00 on SH 59.

Sr. No.	Salient Features	As per Site
1	Total Length of 2 Lane Road	101.030 Kms
2	Total Length of 4 Lane Road	7.370 Kms.
3	Length of Project Highway in Widening	Nil
4	Length of Realignment/Bypass	4.400 Kms.
5	Number of Toll Plazas	1 No.
6	Number of Bus Shelters	36 Nos.
7	Number of Truck Lay Bays	0 Nos.
8	Number of Major Junction	9 Nos.
9	Number of Minor Junctions	58 Nos.
10	Number of ROB structures	Nil
11	Number of Bypasses	1 No.
12	Number of Major Bridges (Retain & Repair)	7 Nos.
13	Number of Minor Bridges	14 Nos.
14	Number of Box/Slab Culverts	32 Nos.
15	Number of Pipe Culverts	72 Nos.

3.20.3. The shareholding of DNMTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	2,12,04,600	74.00%
2	M/s Dilip Buildcon Limited	74,50,300	26.00%
3	Others	100	0.00%
	Total	**2,86,55,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.20.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th

August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.20.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.20.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.21. **DBL Bankhlafata - Dogawa Tollways Limited ("DBDTL")**

3.21.1. Summary of details of DBDTL are as follows:

Parameters	Details
Total Length	196.20 Lane Kms
Nos. of Lanes	2
NH / SH	NA (Major District Road)
State Covered	Madhya Pradesh
Area (Start and End)	Bankhlafata - Dogawa
Project Cost	INR 118 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	MPRDC
COD Date	31 March 2014
Nos. of Annuities	26
Annuity Amount	INR 99 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 14th August 2013

Source: Investment Manager

3.21.2. The corridor forms a part of the existing three major district roads under package - I comprising (i) Bankhalafata – Dogawa – via – Borawa - Savardevala (23.67 kilometer); (ii) Punasa – Mundi - Singhaji (thermal power plant) and Singhaji bridge approach road (13.30 kilometer); and (iii) Beed – Mundi – Devala – Khutala – Attoot - NVDA (28.43 kilometer) (total length of 65.40 kilometer).

Sr. No.	Salient Features	As per Site
1	Total Length of Project	65.4 Kms.
2	Total Length of 2 Lane(Flexible)	60.708 Kms
3	Total Length of 2 Lane (Rigid)	4.69 Kms.
4	Toll Plaza	Nil
5	Bus Bays / Bus Shelters	48 Nos.
6	Truck Lay Bays	Nil
7	Major Junction	7 Nos.
8	Minor Junctions	25 Nos.
9	ROB	Nil
10	Major Bridges	3 Nos.
11	Minor Bridges	13 Nos.
12	Pipe Culverts	96 Nos.
13	Slab/Box Culverts	12 Nos.

3.21.3. The shareholding of DBDTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	1,59,99,900	100.00%
2	Others	100	0.00%
	Total	**1,60,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.21.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th

August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.21.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.21.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.22. **DBL Jaora - Sailana Tollways Limited ("DJSTL")**

3.22.1. Summary of details of DJSTL are as follows:

Parameters	Details
Total Length	263.31 Lane Kms
Nos. of Lanes	2
NH / SH	SH 31 and SH 27
State Covered	Madhya Pradesh
Area (Start and End)	Jaora - Sailana
Project Cost	INR 136 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	MPRDC
COD Date	09 May 2014
Nos. of Annuities	26
Annuity Amount	INR 120.6 Mn
Concession Period (CP)	15 years from Appointed Date i.e. 29th June 2013

Source: Investment Manager

3.22.2. The corridor forms a part of the existing four major district roads under package - IV comprising (i) Jaora – Piplodha - Jalandharkheda and Piploda - Sailana (42.27 kilometer); (ii) Raipururiya – Petlabad - Bamniya (18.18 kilometer); (iii) Jawad - Khoh (21.07 kilometer); and (iv) Soyat - Pidawa (6.25 kilometer) (total length of 87.77 kilometer).

Sr. No.	Salient Features	As per Site
	Jaora-Piplodha-Jalandharkheda and Piploda-Sailana - SH-31	
1	Total Project Length	42.235 kms.
2	Rigid Pavement	2.622 Kms
3	Bypass/ Realignment	0.00 Kms / 0.770 Kms
4	Toll Plaza	-
5	Bus Bays / Bus Shelters	36
6	Truck Lay Bays	-
7	Major Junction	2
8	Minor Junctions	14
9	ROB	-
10	Major Bridges	-
11	Minor Bridges	4
12	Pipe Culverts Slab/Box Culverts Total Culverts	35 17 52
	Raipururiya-Petlabad-Bamniya	
1	Total Project Length	18.400 kms
2	Rigid Pavement	-
3	Bypass/ Realignment	-
4	Toll Plaza	-
5	Bus Bays / Bus Shelters	18
6	Truck Lay Bays	-
7	Major Junction	1
8	Minor Junctions	10
9	ROB	-
10	Major Bridges	-
11	Minor Bridges	3

12	Pipe Culverts Slab/Box Culverts Total Culverts	33 9 42
	Neemuch - Jawad - Khoh - Nayagaon	
1	Total Project Length	21.030 kms
2	Rigid Pavement	-
3	Bypass/ Realignment	-
4	Toll Plaza	-
5	Bus Bays / Bus Shelters	10
6	Truck Lay Bays	-
7	Major Junction	2
8	Minor Junctions	11
9	ROB	-
10	Major Bridges	-
11	Minor Bridges	3
12	Pipe Culverts Slab/Box Culverts Total Culverts	12 7 19
	Soyat - Pidawa - SH-27	
1	Total Project Length	6.300 Kms
2	Rigid Pavement	-
3	Bypass/ Realignment	-
4	Toll Plaza	-
5	Bus Bays / Bus Shelters	1
6	Truck Lay Bays	-
7	Major Junction	-
8	Minor Junctions	1
9	ROB	-
10	Major Bridges	-
11	Minor Bridges	-
12	Pipe Culverts Slab/Box Culverts Total Culverts	9 0 9

3.22.3. The shareholding of DJSTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	1,99,99,900	100.00%
2	Others	100	0.00%
	Total	**2,00,00,000**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.22.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.22.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.22.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.23. **DBL Mundargi Harapanahalli Tollways Limited ("DMHTL")**

3.23.1. Summary of details of DMHTL are as follows:

Parameters	Details
Total Length	153.63 Lane Kms
Nos. of Lanes	2
NH / SH	SH 45 and SH 47
State Covered	Karnataka
Area (Start and End)	Mundargi - Harapanahalli
Project Cost	INR 179 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	KRDC
COD Date	05 February 2018
Nos. of Annuities	16
Annuity Amount	INR 177.3 Mn
Concession Period (CP)	10 years from Appointed Date i.e. 29th September 2016

Source: Investment Manager

3.23.2. The corridor forms a part of the existing State Highway from Mundargi – Hadagali - Harapanahalli (approximate length 51.21 kilometer).

Sr. No.	Salient Features	As per Site
1	Length of 2-Lane with paved and earthen shoulder	42.90 Kms.
1a	Length of 2-Lane with paved shoulder	5.12 Kms
1b	Length of 4-Lane road	3.18 Kms.
2	Toll Plaza	SH:45-Km.7+900 SH:47-Km.24+200
3	Bus Bays / Bus Shelters	1 Nos. & 2 Nos. not constructed due to LA issue
4	Truck Lay Bays	0 No.
5	Major Junction	10 Nos.
6	Minor Junctions	20 Nos.
7	RUB/ROB	Nil
8	Level Crossing	Nil
9	Bypass	Nil
10	Length of the Bypass	-
11	Major Bridges	1 Nos.
12	Minor Bridges	11 Nos.
13	Causeway	0 Nos.
14	Box/Slab Culverts	19 Nos.
15	Pipe Culverts	65 Nos.

3.23.3. The shareholding of DMHTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	1,42,685	99.93%
2	Others	100	0.07%
	Total	**1,42,785**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.23.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.23.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.23.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.24. **DBL Hassan Periyapatna Tollways Limited ("DHPTL")**

3.24.1. Summary of details of DHPTL are as follows:

Parameters	Details
Total Length	221.07 Lane Kms
Nos. of Lanes	2
NH / SH	SH-21
State Covered	Karnataka
Area (Start and End)	Hassan - Periyapatna
Project Cost	INR 255 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	KRDC
COD Date	28 February 2018
Nos. of Annuities	16
Annuity Amount	INR 262.8 Mn
Concession Period (CP)	10 years from Appointed Date i.e. 29th September 2016

Source: Investment Manager

3.24.2. The corridor forms a part of the existing State Highway from Hassan-Ramanathapura-Periyapatna (approximate length of 73.69 kilometer).

Sr. No.	Salient Features	As per Site
1	Total Length of 2 Lane (Flexible)	71.080 Km
2	Total Length of 4 Lane (Flexible)	2.610 Km
3	Toll Plaza	3 Nos.
4	Bus Bays	24 Nos
5	Bus Shelters	21 Nos
6	Truck Lay Bays	Nil
7	Major Junction	5 Nos.
8	Minor Junctions	57 Nos.
9	Total Major Bridges	1 Nos.
10	Total Minor Bridges	13 Nos.
11	Total Pipe Culverts	139 Nos.
12	Total Box/ Slab Culverts	53 Nos.
13	Total Length of Drain	33,335 m

3.24.3. The shareholding of DHPTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	1,17,774	99.92%
2	Others	100	0.08%
	Total	**1,17,874**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.24.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.24.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL

whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.24.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.25. **DBL Hirekerur Ranibennur Tollways Limited ("DHRTL")**

3.25.1. Summary of details of DHRTL are as follows:

Parameters	Details
Total Length	167.07 Lane Kms
Nos. of Lanes	2
NH / SH	SH 62 and SH -76 and SH-57
State Covered	Karnataka
Area (Start and End)	Hirekerur - Ranibennur
Project Cost	INR 198 Cr
PPP Model	DBFOT
Project Type	Annuity
Concession Granted by	KRDC
COD Date	24 February 2018
Nos. of Annuities	16
Annuity Amount	INR 196.2 Mn
Concession Period (CP)	10 years from Appointed Date i.e. 29th September 2016

Source: Investment Manager

3.25.2. The corridor forms a part of the existing State Highway from Hirekerur - Ranibennur (approximate length 55.69 kilometers).

Sr. No.	Salient Features	As per Site
1	Total Length of 2-Lane with paved & earthen shoulder	47.30 Kms.
2	Length of 2-Lane with paved shoulder	9.1 Kms
3	Length of 4-Lane road	0.0 Kms
4	Toll Plaza	1. Km. 19+050 (SH:76 Km.153+900) 2. Km. 43+660) (SH:62 Km.32+300)
5	Bus Bays / Bus Shelters	8 Nos both Bus shelters and Bus bays completed. 6Nos only bus bays completed. 8Nos descoped.
6	Truck Lay Bays	Nil
7	Major Junction	9 Nos.
8	Minor Junctions	21 Nos.
9	RUB/ROB	Nil
10	Level Crossing	Nil
11	Bypass	1.992
12a	Realignment	Km.14+246-Km14+366(0.120Kms)
12b	Realignment	Km.15+000 to 15+120(0.120Kms)
13	Major Bridges	0 Nos.
14	Minor Bridges	11
15	Causeway	0 Nos.
16	Box/Slab Culverts	18 Nos.
17	Pipe Culverts	76 Nos.

3.25.3. The shareholding of DHRTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	1,61,838	99.94%
2	Others	100	0.06%
	Total	**1,61,938**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.25.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.25.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.25.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.26. **Jalpa Devi Tollways Limited ("JDTL")**

3.26.1. Summary of details of JDTL are as follows:

Parameters	Details
Total Length	506.70 Lane Kms
Nos. of Lanes	4
NH / SH	NH 3
State Covered	Madhya Pradesh
Area (Start and End)	Guna – Biaora
Project Cost	INR 901 Cr
PPP Model	DBFOT
Project Type	Toll
Concession Granted by	NHAI
COD Date	18 June 2018
Concession Period (CP)	26 years from Appointed Date i.e. 07th September 2016
Concession End Date	06 September 2042

Source: Investment Manager

3.26.2. The corridor forms a part of the existing NH 3 from kilometer 332.100 to kilometer 426.100 (approximately 93.500 kilometer) on the Guna-Biaora section of NH 3. Post the introduction of road, the time taken to cover this length of ~93.5 km has reduced from 5 hours to 1.5 hours.

Sr. No.	Salient Features	As per Site
1	Length of 4-Lane road	93.57km
2	Service Road	23.90 Km
3	No and Length of Bypass	2 Nos., 7.95 Km
4	Toll Plaza	2 Nos.
5	Bus Bays / Bus Shelters	44 Nos.
6	Truck Lay Bays	4 Nos.
7	Rest Area	1 No.
8	Major Junction	7 Nos.
9	Minor Junctions	34 Nos.
10	Major Bridges	4 Nos.
11	Minor Bridges	34 Nos.
12	Box/Slab Culverts	18 Nos.
13	Pipe Culverts	84 Nos.
14	Flyovers	2 Nos.
15	Foot Over Bridge	2 Nos.
16	Public Under Pass/ Covered Under Pas	8 Nos
17	Vehicle Under Pass	4 Nos

3.26.3. The shareholding of JDTL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	M/s Dilip Buildcon Limited	21,32,231	51.00%
2	Shrem Tollway Private Limited	20,48,513	49.00%
3	Others	100	0.00%
	Total	**41,80,844**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

3.26.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017, master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.26.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.26.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

3.27. **Suryavanshi Infrastructure Private Limited ("SUIPL")**

3.27.1. Summary of details of SUIPL are as follows:

Parameters	Details
Total Length	132 Lane Kms
Nos. of Lanes	2
NH / SH	SH 59
States Covered	Madhya Pradesh
Area (Start and End)	Mandsaur – Dipakheda
Project Cost	INR 29 Cr
PPP Model	DBFOT
Project Type	Toll
Concession Granted by	MPRDC
COD Date	05 February 2009
Concession Period (CP)	25 years from Appointed Date i.e. 27th November 2017
Concession End Date	30 March 2033

Source: Investment Manager

3.27.2. The corridor forms a part of Mandsaur - Sitamau section from existing kilometer stone 18 and ends at the existing kilometer stone 62 at Chambal River (Rajasthan border) (total 44 kilometer) on SH 14.

Sr. No.	Salient Features	As per Site
1	Total Length of Intermediate (Flexible)	43 Km
2	Total Length of 5.5 to 7m wide (Flexible)	1 Km
3	Toll Plaza	1 No.
4	Bus Shelters	Nil
5	Truck Lay Bays (Both sides)	Nil
6	Major/Minor Junction	13 Nos.
7	ROB	Nil
8	Major Bridges	1 No.
9	Minor Bridges	4 Nos.
10	Pipe Culverts	27 Nos.
11	Slab Culverts	15 Nos.

3.27.3. The shareholding of SUIPL as on Valuation Date is as follows:

Sr. No.	Particulars	No. of Shares	%
1	Shrem Roadways Private Limited	86,700	99.88%
2	Others	100	0.12%
	Total	**86,800**	**100.00%**

I have been represented by the Investment Manager that there is no change in shareholding pattern from the Valuation Date till the date of this Report.

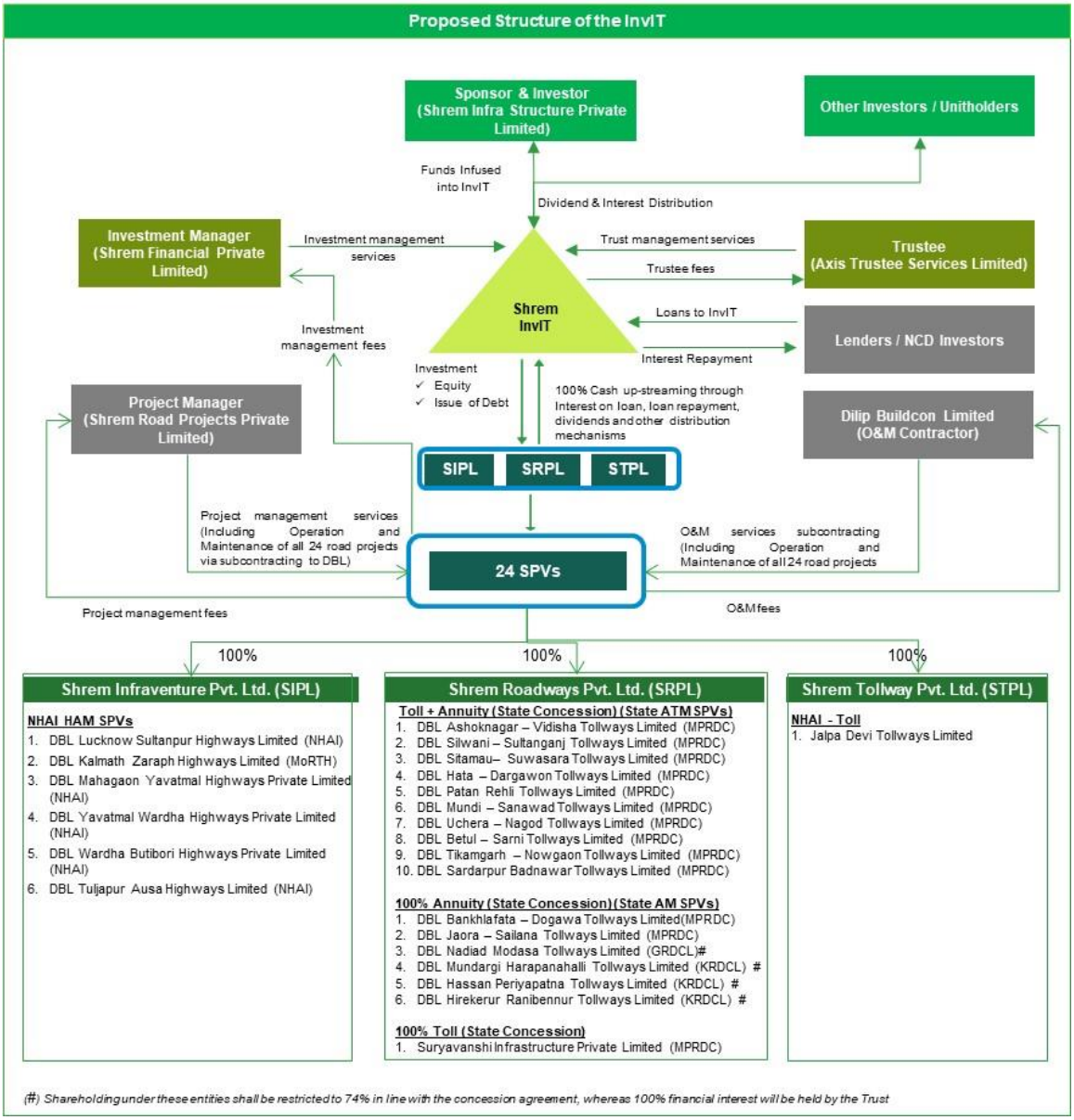
3.27.4. DBL was the original bidder for the Project SPVs, and was also responsible as the EPC contractor for the construction and development of each of the Projects. Pursuant to a term sheet dated 24th August 2017 master agreement dated 18th December 2017 and share acquisition agreements dated 26th March 2018, the Shrem group has acquired shareholding in the Project SPVs.

3.27.5. The O&M Contract for this project is signed between SPV and its immediate holding company and subsequently immediate holding company has entered into sub contract agreement with DBL whereby DBL will be responsible for discharging all the O&M functions required to be discharged under the Concession Agreement.

3.27.6. Due to the current scenario of restrictions imposed by the government on account of COVID-19 pandemic, it was not possible to conduct physical site visit for the SPVs. My team had conducted virtual visit to the extent appropriate during the course of this engagement. Refer below for the pictures of the SPV.

4. Proposed Transaction

4.1. Following is the proposed Shrem InvIT Structure after the completion of the Proposed Transaction:



Source: Investment Manager

4.2. Proposed Acquisition of stake in the SPVs by the Trust

		As on Report Date		After Report Date and Before Proposed Transaction	Post Proposed Transaction
Sr. No.	**SPV**	**Sponsor Holding**	**DBL Holding**	**Sponsor Holding***	**Equity Stake proposed to be acquired by the Trust prior to listing**
1	DLSHL	49.0%	51.0%	100.0%	100.0%
2	DKZHL	48.8%	51.0%	100.0%	100.0%
3	DYWHL	49.0%	50.9%	100.0%	100.0%
4	DTAHL	49.0%	50.9%	100.0%	100.0%
5	DWBHL	49.0%	50.9%	100.0%	100.0%
6	DMYHL	0.0%	99.9%	100.0%	100.0%
7	DAVTL	100.0%	0.0%	100.0%	100.0%
8	DBSTL	0.0%	99.9%	100.0%	100.0%
9	DHDTL	99.9%	0.0%	100.0%	100.0%
10	DSSTL	99.9%	0.0%	100.0%	100.0%
11	Sitamau	100.0%	0.0%	100.0%	100.0%
12	DMSTL	99.9%	0.0%	100.0%	100.0%
13	DUNTL	100.0%	0.0%	100.0%	100.0%
14	DSBTL	99.9%	0.0%	100.0%	100.0%
15	DPRTL	99.9%	0.0%	100.0%	100.0%
16	DTNTL	99.9%	0.0%	100.0%	100.0%
17	DNMTL**	74.0%	26%	74.0%	74.0%
18	DBDTL	100.0%	0.0%	100.0%	100.0%
19	DJSTL	100.0%	0.0%	100.0%	100.0%
20	DMHTL**	73.93%	26.0%	74.0%	74.0%
21	DHPTL**	0.0%	99.9%	74.0%	74.0%
22	DHRTL**	73.94%	26.0%	74.0%	74.0%
23	JDTL	49.0%	51.0%	100.0%	100.0%
24	SUIPL	99.8%	0.0%	100.0%	100.0%

Source: Investment Manager

** Effective holding of the Sponsor through the Holding Companies*

*** Shareholding under these entities shall be restricted to 74% in line with the respective concession agreements, whereas 100% financial interest will lie with Trust*

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5. Overview of the Industry

5.1 Introduction

5.1.1 The road infrastructure is an important determinant of economic growth in India and it plays a significant role in the economy's overall development process.

5.1.2 Creation and operation of quality road infrastructure continue to be major requirements for enabling overall growth and development of India in a sustained manner.

5.1.3 Bridging of existing infrastructure gaps and creating additional facilities to cater to the increasing population are equally important. Apart from providing connectivity in terms of enabling movement of passengers and freight, roads act as force multipliers in the economy.

5.1.4 Further, roads play a significant role in times of natural calamities, wars and other such events in terms of timely evacuation of the impacted population, carriage of relief material and other associated movements. Government takes cognisance of this requirement and road infrastructure remains to be a focus area.

5.2 Road Network in India

5.2.1 India has the second largest road network in the world, spanning over 5.8 million kms. Over 64.5% of all goods in the country are transported through roads, while 90% of the total passenger traffic uses road network to commute.

Source: IBEF Roads Report, November 2020

5.2.2 Out of this around 1.32 lakh km are National Highways ("NHs"). Significantly, NHs constitute around 2 per cent of the total road network in the country but carry about 40% of the road traffic. The density of India's highway network at 0.66 km of roads per square kilometer of land – is similar to that of the United States (0.65) and much greater than China's (0.16) or Brazil's (0.20).

5.3 Government Agencies for Road Development

5.3.1 The Ministry of Road Transport & Highway ("**MoRTH**") is responsible for development of Road Transport and Highways in general and construction & maintenance of National Highways.

5.3.2 The National Highways Authority of India ("**NHAI**") is an autonomous agency of the Government of India, set up in 1988 and is responsible for implementation of National Highways Development Project ("**NHDP**").

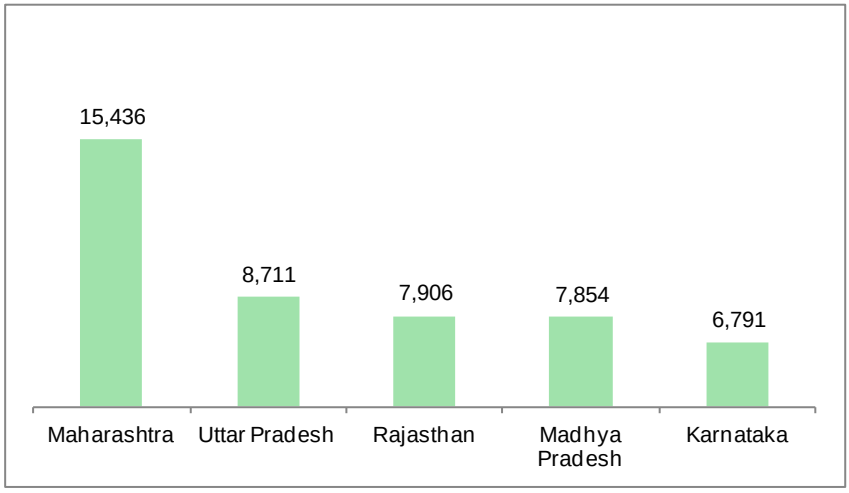
5.3.3 The NHDP in the context of NHs is nearing completion- in seven phases. Later, the other highway development programmes like Special Accelerated Road Development Programme for Development of Road Network in North Eastern States (SARDP- NE) and National Highways Interconnectivity Improvement Project (NHIIP) were also taken up by MoRTH. Further, Bharatlmala Pariyojana is ongoing. For majority of the projects under NHDP and Bharatmala Pariyojana, NHAI is the implementation agency. Other NH related programmes/works are being implemented

through agencies like National Highways Infrastructure Development Corporation Limited (NHIDCL), State Public Works Departments (PWDs), State Road Development Corporations and the Border Road Organizations

5.3.4 Roads in the jurisdiction of state governments are under different categories like State Highways ("SHs") and Major District Roads. They are being developed/ upgraded through State PWDs and State Road Development Corporations. Pradhan Mantri Gramm Sadak Yojana is being implemented for rural roads through the Ministry of Rural Affairs with active participation by state governments. Further, roads within urban areas mostly with PWDs and Urban Local Bodies.

5.3.5 State Governments have a significant role to play in developing the SHs, Major District Roads, Other District Roads to ensure the last mile connectivity. States have varying levels of maturity in terms of road infrastructure development due to issues such as inadequate identification and prioritization of projects, funding shortfall, limited institutional capacity to implement projects, etc.

Top 5 states by length of NHs in India (in KM)



5.4 Trend of Road and Highways Construction

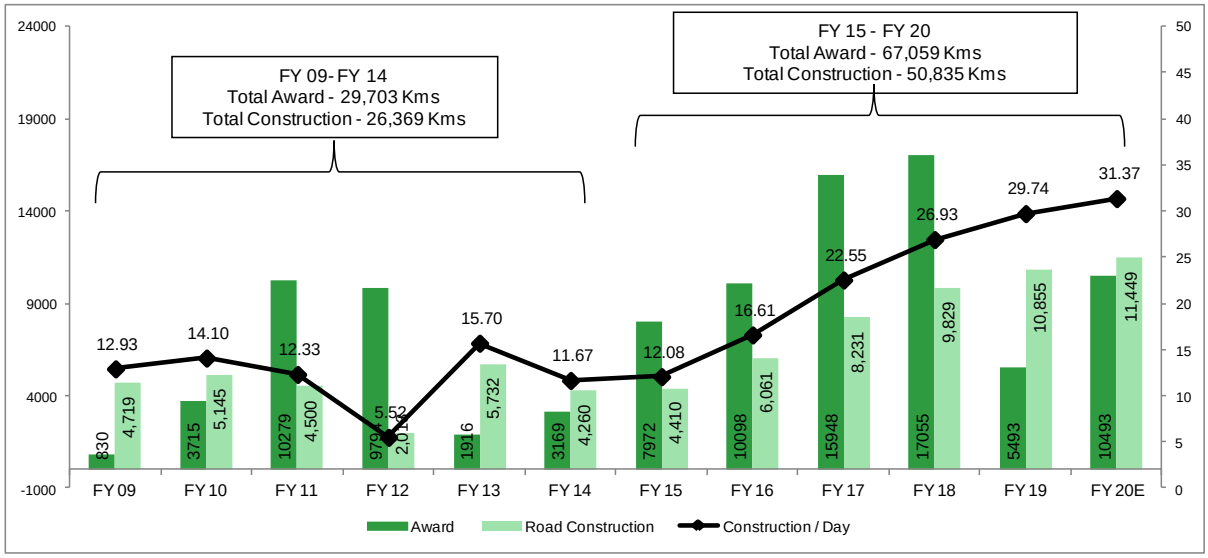
5.4.1 The length of National Highways awarded has almost doubled in the years FY 15 to FY 18 compared to FY 11 to FY 14. Length of NHs constructed has increased by 70% during the same period. This pace is expected to gain further ground, with the ambitious targets set by the ministry and the implementation of the Bharatmala Pariyojana as MORTH is planning to construct around 65,000 km of national highways at a cost of Rs 5.35 trillion (US$ 74.15 billion) by 2022.

5.4.2 India has become the fastest highway developer in the world with 27 kms of highways built each day and the aim is to increase this target to 40 Kms a day.

5.4.3 The NHDP is a project to upgrade, rehabilitate and widen major highways in India to a higher standard. The project was started in 1998 to be implemented in 7 phases.

5.4.4 With the launch of Bharatmala project, 10,000 km of highway construction left under NHDP was merged with Phase I of the Bharatmala project.

Details of national highways awarded (by NHAI) and constructed in India (KMs):



5.5 Implementation of important projects and expressways

5.5.1 Bharatmala Pariyojna

Bharatmala Pariyojana is a new umbrella program for the highways sector that focuses on optimizing efficiency of freight and passenger movement across the country by bridging critical infrastructure gaps through effective interventions like development of Economic Corridors, Inter Corridors and Feeder Routes, National Corridor Efficiency Improvement, Border and International connectivity roads, Coastal and Port connectivity roads and Green-field expressway.

The Bharatmala Pariyojana envisages development of about 26,000 km length of Economic Corridors, which along with Golden Quadrilateral (GQ) and North-South and East-West (NS-EW) Corridors are expected to carry majority of the Freight Traffic on roads.

A total length of 34,800 km in road projects have been proposed to be constructed with an estimated outlay of Rs 5.35 trillion (US$ 74.15 billion) under Bharatmala Pariyojana Phase-I over a five year period (2017-18 to 2021-22). Components under Bharatmala Pariyojana Phase-I are as given below:

Component	Length (Km)	Cost (INR Crore)
Economic corridors development	9,000	1,20,000
Inter-corridor & feeder roads	6,000	80,000
National Corridors Efficiency	5,000	1,00,000
Border & International connectivity	2,000	25,000
Coastal & port connectivity roads	2,000	20,000
Expressways	800	40,000
Sub Total	**24,800**	**3,85,000**
Other works - under NHDP	10,000	1,50,000
Total	**34,800**	**5,35,000**

Source: Ministry of Road Transport and Highways, Government of India

More than 13,000 km length of roads, at a cost of INR ~3.3 lakh crores, has already been awarded under the Bharatmala Pariyojana project of which 3,800 kms have been constructed. By March 2022, governments of India will be awarding another 8,500 kms and complete an additional 11,000 kms of national highway corridors.

5.5.2 Char Dham Vikas Mahamarg Pariyojna:

This project envisages development if easy access to the four dhams in India – Gangotri, Yamunotri, Kedarnath and Badrinath. Development of this route of 889 km route us expected at an estimated cost of INR 12,000 Crores.

5.5.3 Eastern peripheral and western peripheral expressway

These two projects will connect NH-1 and NH-2 from western and eastern side of Delhi.

5.5.4 Setu Bharatam:

This project aims to replace crossings on NHs with Road Over Bridges and Road Under Bridges. It is projected to construct 174 such structures.

5.5.5 To further augment road infrastructure, more economic corridors are also being planned by Government of India as revealed in Budget 2021-22.

a. 3,500 km of National Highway works in the state of Tamil Nadu at an investment of INR 1.03 lakh Crores. These include Madurai-Kollam corridor, Chittoor-Thatchur corridor. Construction will start next year.

b. 1,100 km of National Highway works in the State of Kerala at an investment of INR 65,000 Crores including 600 km section of Mumbai Kanyakumari corridor in Kerala.

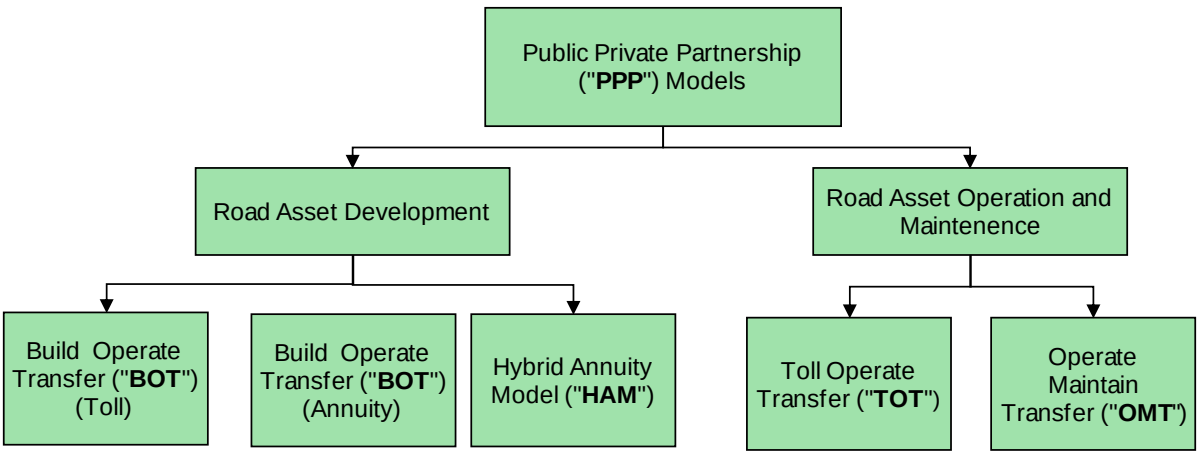
c. 675 km of highway works in the state of West Bengal at a cost of INR 25,000 Crores including upgradation of existing road-Kolkata –Siliguri.

d. National Highway works of around INR 19,000 Crores are currently in progress in the State of Assam. Further works of more than INR 34,000 Crores covering more than 1300 kms of National Highways will be undertaken in the State in the coming three years.

5.6 Public Private Partnership ("PPP") Models of road development and maintenance in India

5.6.1 India has a well-developed framework for Public-Private-Partnerships (PPP) in the highway sector. PPP has been a major contributor to the success story of the roads and highway sector in India. With the emergence of private players over the last decade, the road construction market has become fragmented and competitive. Players bidding for projects also vary in terms of size.

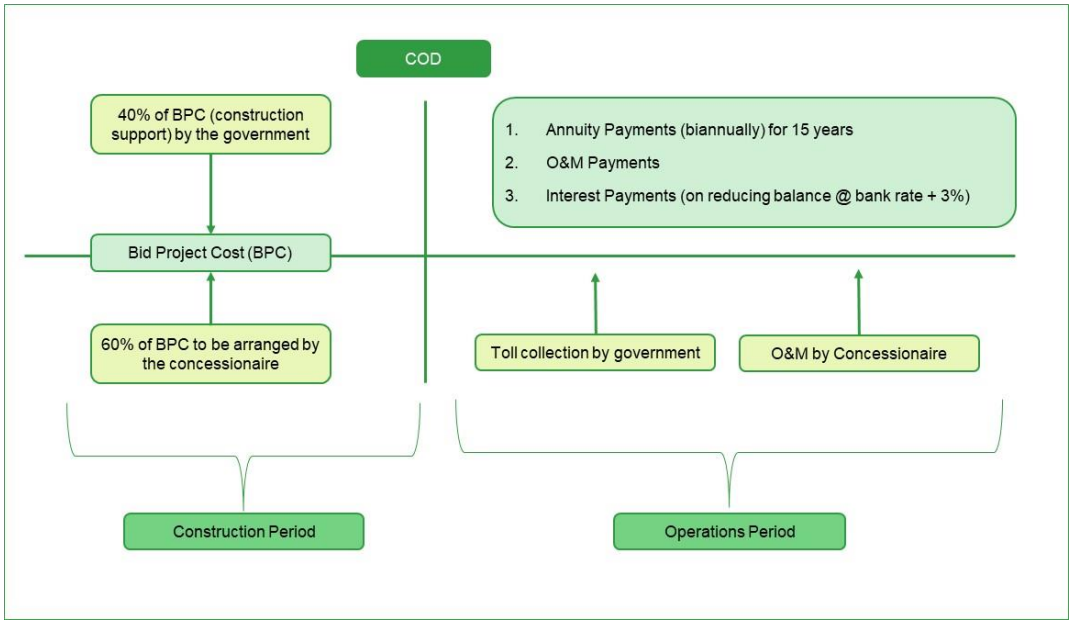
5.6.2 PPP modes have been used in India for both development and operation & maintenance of road assets.



5.6.3 Road Asset Development Models

- **BOT Toll**
  - In a BOT toll project, the concessionaire is responsible for designing, building, financing, operating, maintaining, tolling and transferring the project to the relevant authority at the end of the concession period. The concession period is project specific but is usually for 30 years. In BOT Toll model, the concessionaire earns revenue primarily in the form of toll revenue which in turns depends on the traffic on the road stretch. Toll rates are regulated by the government through rules.
- **BOT Annuity**
  - Similar to a BOT Toll projects, in BOT Annuity project, the concessionaire is responsible for designing, building, financing, operating, maintaining, tolling and transferring the project to the relevant authority at the end of the concession period. However, in these projects, the responsibility of tolling on road stretch lies with the government. The concessionaire earns revenue in the form of pre-determined semi-annual annuity payments.
- **HAM**
  - Similar to a BOT projects, in HAM project, the concessionaire is responsible for designing, building, financing, operating, maintaining, tolling and transferring the project to the relevant authority at the end of the concession period. However, in these projects, the responsibility of tolling on road stretch lies with the government. The construction period for HAM projects is project specific and a fixed operation period of 15 years.

Key Features of HAM Projects



  - The government provides construction support of 40% of the bid project cost adjusted for inflation to concessionaire during the construction period. This grant is provided in five equal tranches of 8% each. The remaining 60% of the bid project cost is to be arranged by the concessionaire during the construction period. The government compensates this balance cost in the form of semi annual payments. In addition to these semi annual payments, the government also pays an interest of reducing balance and operations and maintenance costs to the concessionaire.

Risk Parameters for Road Asset Development Models through PPP

Reducing risk for Concessionaire

Mode	Financing Risk	Construction Risk	Traffic Risk	O&M Risk
BOT (Toll)	Concessionaire	Concessionaire	Concessionaire	Concessionaire
BOT (Annuity)	Concessionaire	Concessionaire	Government	Concessionaire
HAM	Concessionaire (partly)	Concessionaire	Government	Concessionaire

5.6.4 **Road Asset Development Models**

- **TOT**
  - In this model, long term tolling rights and O&M responsibilities are assigned to the developer / investor after construction completion. This is done after a few years of successful operation of a project when the traffic on the road stretch has stabilized.
  - An upfront fee is paid by the concessionaire to the government for acquiring the tolling rights. Currently, the concession period of a TOT project is 30 years.
- **OMT**
  - Under the OMT mode, the concessionaire operates and maintains the road asset for a shorter duration, ranging from four to nine years. The concessionaire acquires the tolling rights in exchange of premium paid to the government authority. The concessionaire is responsible for routine maintenance, periodic maintenance and traffic management.

5.7 Government Investment in the Sector

5.7.1 Under Union Budget 2021-22, the Government of India has allocated INR 1,18,101 Crore (US$ 13.14 billion) for the Ministry of Road Transport and Highways as Gross Budgetary Support.

5.7.2 During 2019-23, NHAI is expected to generate Rs. 1 trillion (US$ 14.30 billion) annually from toll and other sources.

5.7.3 NHAI is planning to raise Rs. 40,000 crore (US$ 5.72 billion) to monetize its highway assets through Infrastructure Investment Trust (InvIT). Five operational roads with an estimated enterprise value of INR 5,000 crores are being transferred to the NHAI InvIT.

5.7.4 As on December 2019, 824 projects were recommended for development by PPP Appraisal Committee. Investment of US$ 31 billion for national highways is expected in PPP by 2020.

5.8 Growth Drivers

5.8.1 Robust Demand :

Growing domestic trade flows have led to rise in commercial vehicles and freight movement; supported by rise in production of commercial vehicles to 752,022 in FY20 which commands stronger road network in India. Higher individual discretionary spending has led to increased spending on two and four wheelers. Road's traffic share of the total traffic in India has grown from 13.8% to 65% in freight traffic and from 32% to 90% in passenger traffic over 1951–2019.

5.8.2 Increasing Investment :

Huge investment have been made in the sector with total investment increasing more than three times from Rs. 51,914 crore (US$ 7.43 billion) in 2014-15 to Rs. 158,839 crore (US$ 22.73 billion) in 2018- 19. Between FY16 and FY21, budget outlay for road transport and highways increased at a robust CAGR of 13.10%. In 2019-20, Rs. 36,691 crore (US$ 5.24 billion) was allocated to NHAI.

5.8.3 Policy Support :

100% FDI is allowed under automatic route subject to applicable laws and regulations, standardized process for bidding and tolling. Under Union Budget 2020-21, the Government of India has allocated Rs. 19,500 crore (US$ 2.79 billion) for Pradhan Mantri Gram Sadak Yojana (PMGSY) which is a scheme for development of rural roads in India. Government of India has set up India Infrastructure Finance Company (IIFCL) to provide long-term funding for infrastructure projects.

5.9 Challenges & Issues in the Sector

5.9.1 Land Acquisition Delays & Cost :

- Land acquisition cost has increased more than 30% since 2017, primarily due to enhanced compensation payment requirements as per 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013'.
- Delay in pre-construction activities (such as land acquisition, relocation) affects project timelines. Land acquisition for road projects involves various stages. Each stage involves a number of stakeholders and regulatory bodies. Thus processes consume considerable time.

5.9.2 Regulatory Approvals & Disputes :

- Road development process requires a number of approvals such as environmental clearance, forest clearance, railways clearance, etc. Each of these activities takes considerable time and non-adherence to timelines result in cost overruns due to delays.
- Claims arising out of disputes between the concessionaire/ contractor and the government authorities are also a significant cost which can lead to large liabilities.

5.9.3 Operational Issues :

- Uncertainty of toll revenue collection and variation of collected toll revenue compared to projected levels as Actual traffic is much less than the anticipated traffic.
- Often unforeseen weather conditions require unplanned O&M, over and above the routine and periodic maintenance activities. This results in enhanced O&M expenses. The increase in O&M costs is also affecting the project returns.

5.10 Recent Initiatives by Government

5.10.1 Bhoomi Rashi – Land Acquisition Portal

The ministry has corroborated with the National Informatics Centre, to create Bhoomirashi, a web portal which digitises the cumbersome land acquisition process, and also helps in processing notifications relating to land acquisition online. Processing time, which was earlier two to three months has come down to one to two weeks now.

5.10.2 FASTag – Electronic Toll Collection

Electronic Toll Collection (ETC) system, has been implemented on pan India basis in order to remove bottlenecks and ensure seamless movement of traffic and collection of user fee as per the notified rates, using passive Radio Frequency Identification (RFID) technology. 24 banks (including Public and Private sector banks) have been engaged as issuer banks in order to issue FASTag to road users. As of Jan-2020, collectively banks have issued 135.62 lakh FASTags and with an 30.80 lakhs average daily ETC transactions, the average daily collection through ETC has increased to Rs. 50.88 crore with a penetration of 65% in total fee collection. There are 538

operational National Highways fee plazas out of which 536 plazas are live with ETC infrastructure in all lanes.

5.10.3 Revival of languishing projects

Projects which were languishing for a number of years have been attempted to be revived, with the help of a number of policy measures taken by the government. Some of the policy measures like Premium deferment in stressed projects, extension of concession period for languishing projects to the extent of delay not attributable to concessionaires, One Time Capital Support for physical completion of languishing projects that have achieved at least 50 per cent physical progress, through one time fund infusion by NHAI, subject to adequate due diligence on a case to case basis.

Sources: IBEF Roads Report, July 2020; KPMG Report - Roads and Highway Sector, Sept'19; Ministry of Road Transport and Highways, Government of India.

6. Valuation Methodology and Approach

6.1. The present valuation exercise is being undertaken in order to derive the fair EV of the SPVs.

6.2. The valuation exercise involves selecting a method suitable for the purpose of valuation, by exercise of judgment by the valuers, based on the facts and circumstances as applicable to the business of the company to be valued.

6.3. There are three generally accepted approaches to valuation:

(a) "Cost" approach
(b) "Market" approach
(c) "Income" approach

6.4. **Cost Approach**

The cost approach values the underlying assets of the business to determine the business value. This valuation method carries more weight with respect to holding companies than operating companies. Also, cost value approaches are more relevant to the extent that a significant portion of the assets are of a nature that could be liquidated readily if so desired.

Net Asset Value ("**NAV**") Method

The NAV Method under Cost Approach considers the assets and liabilities, including intangible assets and contingent liabilities. The Net Assets, after reducing the dues to the preference shareholders, if any, represent the value of a company.

The NAV Method is appropriate in a case where the main strength of the business is its asset backing rather than its capacity or potential to earn profits. This valuation approach is also used in cases where the firm is to be liquidated, i.e. it does not meet the "Going Concern" criteria.

As an indicator of the total value of the entity, the NAV method has the disadvantage of only considering the status of the business at one point in time.

Additionally, NAV does not properly take into account the earning capacity of the business or any intangible assets that have no historical cost. In many aspects, NAV represents the minimum benchmark value of an operating business.

6.5. **Market Approach**

Under the Market approach, the valuation is based on the market value of the company in case of listed companies, and comparable companies' trading or transaction multiples for unlisted companies. The Market approach generally reflects the investors' perception about the true worth of the company.

Comparable Companies Multiples ("**CCM**") Method

The value is determined on the basis of multiples derived from valuations of comparable companies, as manifest in the stock market valuations of listed companies. This valuation is based on the principle that market valuations, taking place between informed buyers and informed sellers, incorporate all factors relevant to valuation. Relevant multiples need to be chosen carefully and adjusted for differences between the circumstances.

Comparable Transactions Multiples ("**CTM**") Method

Under the CTM Method, the value is determined on the basis of multiples derived from valuations of similar transactions in the industry. Relevant multiples need to be chosen carefully and adjusted for differences between the circumstances. Few of such multiples are EV/Earnings before Interest, Taxes, Depreciation & Amortization ("**EBITDA**") multiple and EV/Revenue multiple.

Market Price Method

Under this method, the market price of an equity share of the company as quoted on a recognized stock exchange is normally considered as the fair value of the equity shares of that company where such quotations are arising from the shares being regularly and freely traded. The market value generally reflects the investors' perception about the true worth of the company.

6.6. **Income Approach**

The income approach is widely used for valuation under "Going Concern" basis. It focuses on the income generated by the company in the past as well as its future earning capability. The Discounted Cash Flow Method under the income approach seeks to arrive at a valuation based on the strength of future cash flows.

DCF Method

Under DCF Method value of a company can be assessed using the FCFF or Free Cash Flow to Equity Method ("**FCFE**"). Under the DCF method, the business is valued by discounting its free cash flows for the explicit forecast period and the perpetuity value thereafter. The free cash flows represent the cash available for distribution to both, the owners and creditors of the business. The free cash flows in the explicit period and those in perpetuity are discounted by the WACC. The WACC, based on an optimal vis-à-vis actual capital structure, is an appropriate rate of discount to calculate the present value of future cash flows as it considers equity-debt risk by incorporating debt-equity ratio of the firm.

The perpetuity (terminal) value is calculated based on the business' potential for further growth beyond the explicit forecast period. The "Constant Growth Model" is applied, which implies an expected constant level of growth for perpetuity in the cash flows over the last year of the forecast period.

The discounting factor (rate of discounting the future cash flows) reflects not only the time value of money, but also the risk associated with the business' future operations. The EV (aggregate of the present value of explicit period and terminal period cash flows) so derived, is further reduced by the value of debt, if any, (net of cash and cash equivalents) to arrive at value to the owners of the business.

Conclusion on Valuation Approach

6.7. It is pertinent to note that the valuation of any company or its assets is inherently imprecise and is subject to certain uncertainties and contingencies, all of which are difficult to predict and are beyond my control. In performing my analysis, I have made numerous assumptions with respect to industry performance and general business and economic conditions, many of which are beyond the control of the SPVs. In addition, this valuation will fluctuate with changes in prevailing market conditions, and prospects, financial and otherwise, of the SPVs, and other factors which generally influence the valuation of companies and their assets.

6.8. The goal in selection of valuation approaches and methods for any business is to find out the most appropriate method under particular circumstances on the basis of available information. No one method is suitable in every possible situation. Before selecting the appropriate valuation approach and method, I have considered various factors, inter-alia, the basis and premise of current valuation exercise, purpose of valuation exercise, respective strengths and weaknesses of the possible valuation approach and methods, availability of adequate inputs or information and its reliability and valuation approach and methods considered by the market participants.

Cost Approach

The existing book value of EV of the SPVs comprising of the value of its Net fixed assets, Net intangible assets and working capital based on the unaudited financial statements as at 31st January 2021 and based on the audited financial statements as at 31st December 2020 prepared as per Indian Accounting Standards (Ind AS) are as under:

Book EV (INR Mn)	31st January 2021	31st December 2020
DLSHL	9,156	8,484
DKZHL	3,400	3,078
DYWHL	3,423	2,955
DTAHL	2,873	2,657
DWBHL	3,357	3,072
DMYHL	3,760	3,478
DAVTL	510	556
DBSTL	2,071	2,061
DHDTL	773	770
DSSTL	770	766
Sitamau	338	336
DMSTL	713	708
DUNTL	643	639
DSBTL	396	394
DPRTL	2,025	2,019
DTNTL	776	773
DNMTL	1,172	1,331
DBDTL	790	781
DJSTL	884	876
DMHTL	891	869
DHPTL	1,495	1,462
DHRTL	1,057	1,032
JDTL	7,380	7,390
SUIPL	223	224
Total	**48,875**	**46,710**

In the present case, The SPVs operate and maintain the project facilities in accordance with the terms and conditions under the relevant concession agreement. During the concession period, the SPVs operate and maintain the road asset and earn revenues through annuity fees that are pre-determine or through charges, fees or tolls generated from the asset. The amount of annuity fees are pre-determined and the charges, fees or tolls that they may collect are notified by the relevant government authority, which are usually revised annually as specified in the relevant concessions and toll notifications. In such scenario, the true worth of the business is reflected in its future earning capacity rather than the cost of the project. Accordingly, I have not considered the cost approach for the current valuation exercise.

Market Approach

The present valuation exercise is to undertake fair EV of the SPVs engaged in the road infrastructure projects for a predetermined tenure. Further, the tariff revenue and expenses are very specific to the SPVs depending on the nature of their geographical location, stage of project, terms of profitability. In the absence of any exactly comparable listed companies with characteristics and parameters similar to that of the SPVs, I have not considered CCM method in the present case. In the absence of adequate details about the Comparable Transactions, I was unable to apply the CTM method. Currently, the equity shares of the SPVs are not listed on any recognized stock exchange of India. Hence, I was unable to apply market price method.

Income Approach

Each of the SPVs operates under a BOT or DBFOT concession agreement with the relevant regulatory authorities. Government authorities in India typically award highway infrastructure development projects under BOT concessions, which are characterized by three distinct phases:

1. Build: upon successfully securing a project concession through a competitive bid, a concessionaire secures financing for, and completes construction, of a road;
2. Operate: during the agreed concession period, the concessionaire operates, manages and maintains the road at its own expense and earns revenues by collecting tolls from vehicles using the road; and
3. Transfer: at the end of the agreed concession period, the ownership of the road, the obligation to maintain the road and the right to collect tolls from the vehicles using the road revert to the government entity that granted the concession.

A DBFOT project involves, in addition to the activities required under a BOT project, the provision of engineering design and financing for such project.

Currently, each of the SPVs are completed and are revenue generating SPVs. The revenue of the SPVs is based on tenure, annuity fees, traffic volumes, operations and other factors that are unique to each of the SPVs. The revenue of all the SPVs, except for the Toll SPVs, is mainly derived from the annuity fees and interest income wherever applicable that is defined for a certain period of years under respective Concession Agreement, known as “Concession Period”. The annuity fees are typically pre-determined with the relevant government authority and cannot be modified to reflect prevailing circumstances, other than annual adjustments to account for inflation as specified in the concession agreements. The Toll SPVs derive almost all of their revenue from their toll-road operations. Demand for toll roads is primarily dependent on sustained economic development in the regions that they operate in and government policies relating to infrastructure development. The Toll SPVs are substantially dependent on the accuracy of the traffic volume forecasts for their respective projects. The rights in relation to the underlying assets of all the SPVs shall be transferred after the expiry of the Concession Period. Accordingly, since all the SPVs are generating income based on pre-determined agreements / mechanism and since the Investment Manager has provided me with the financial projections of the SPVs for the balance tenor of the concession agreements, DCF Method under the income approach has been considered as the appropriate method for the present valuation exercise.

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7. Valuation of the SPVs

7.1. I have estimated the fair EV of the SPVs using the DCF Method. While carrying out this engagement, I have relied extensively on the information made available to me by the Investment Manager. I have considered projected financial statement of the SPVs as provided by the Investment Manager.

Valuation

7.2. The key assumptions of the projections provided to us by the Investment Manager are:

Key Assumptions:

7.2.1. **Revenue cash flows for NHAI Hybrid Annuity Model SPVs (NHAI HAM SPVs)**

The Cash flow for the NHAI SPVs can be divided into two segments:

Payment NHAI during the Construction Period:

Each SPV were eligible to receive 40% of the Bid Project Cost, adjusted for the price index multiple, in 5 equal installments during the construction period. I have been represented by the Investment Manager that all the 6 NHAI HAM SPVs have received the agreed portion of the inflation adjusted bid project cost (of 40%) as per the respective concession agreements. Hence, no further cash flow receipts are attributable towards this segment of cash flows.

Payment by NHAI during the Operation Period: Accordingly, the revenue of each of the 6 NHAI HAM SPVs would mainly consists of the following:

a. **Annuity payments**: The Bid Project Cost remaining, adjusted for the price index multiple, to be paid in pursuance of the respective concession agreements is eligible to be received by the respective SPVs by way of specified biannual installments as mentioned in their respective concession agreement for the balance period of operations.

b. **Interest**: As per the concession agreements, the SPVs are entitled to receive interest on reducing balance Bid Project Cost equal to Bank Rate as per Reserve Bank of India + 3.00% spread. Such interest is due and payable along with each of the biannual installments as mentioned above.; and

c. **Operations and Maintenance Revenue**: In lieu of O&M expenses to be incurred by SPV, SPVs are eligible for the O&M cost at each biannual installment date duly adjusted for an appropriate inflation rate.

7.2.2. **Revenue cash flows for the State Annuity and Toll Model SPVs (State ATM SPVs)**

Under this model**,** concessionaire is responsible for designing, building, financing, operating, maintaining and transferring the project to the authority at the end of the concession period. The responsibility for tolling is with concessionaire. The concessionaire earns revenue in the following two forms

a. **Annuity Payments:** The concessionaire earns a pre–determined biannual annuity payment which are made by the government to the concessionaire and are based on the amount or mechanism mentioned in the respective concession agreements;

b. **Toll Revenue:** In addition to the annuity revenue, each SPV is allowed to levy, demand, collect and appropriate the fees (called as toll fees) from vehicles and persons liable to payment of fees for using their respective road asset. Toll revenues depend on toll receipts, which in turn depend on traffic volumes and toll fees on the toll roads. Based on the representation of the Investment Manager, toll revenue is escalated by 6% per annum throughout the balance project life. The toll revenue is based on the independent third party reports provided to us by the Investment Manager.

7.2.3. **Revenue cash flows for the State 100% Annuity Model SPVs (State AM SPVs)**

Under this model**,** concessionaire is responsible for designing, building, financing, operating, maintaining and transferring the project to the authority at the end of the concession period. Under this model, post completion of the road project, the responsibility for tolling is with government. Accordingly, only one mode of revenue is earned by these SPVs that is explained below:

Annuity Payments: The concessionaire earns revenue primarily in form of pre – determined biannual annuity payments which are made by the government to the concessionaire based on the respective concession agreements.

7.2.4. **Revenue cash flows for the Toll SPVs:**

Under this mode**,** the Toll SPVs Are responsible for designing, building, financing, operating, maintaining and transferring the project to the authority at the end of the concession period. The responsibility for tolling is with the Toll SPVs. The concessionaire earns revenue primarily in form of toll revenue.

Traffic Volumes

Traffic volumes are directly or indirectly affected by a number of factors, many of which are outside of the control of the Toll SPVs, including: toll fees; fuel prices in India; the frequency of traveler use; the quality, convenience and travel efficiency of alternative routes outside the Toll SPV's network of toll roads; the convenience and extent of a toll road's connections with other parts of the local, state and national highway networks; the availability and cost of alternative means of transportation, including rail networks and air transport; the level of commercial, industrial and residential development in areas served by the Toll SPVs' projects; adverse weather conditions; and seasonal holidays.

Toll Rates

During the concession period, the Toll SPVs operate and maintain the road asset and earn revenues through charges, fees or tolls generated from the asset. The amount of charges, fees or tolls that they may collect are notified by the relevant government authorities, which are usually revised annually as specified in the relevant concessions and toll notifications.

The toll rates for the projected period have been derived in the manner stipulated in the individual concession agreements of the Toll SPVs.

In the present case, the Investment Manager has appointed M/s Ramoll India Private Limited an independent third-party research agency to forecast the traffic volumes and toll revenues for JDTL. As confirmed by the Investment Manager, the traffic volumes and toll revenues for JDTL and other SPVs has been estimated by the traffic consultant after considering overall structure and condition of the projects including analysis of demand and supply and strategic geographical locations of the individual road projects. This was one of the most important input in projecting the toll revenues.

7.2.5. **Revenue Sharing with NHAI for JDTL:** This is applicable to JDTL only. The target traffic as per RFP of JDTL is deemed to be 27,136 PCUs as on 1st October 2025. Based on the above traffic forecast, the traffic estimated on the project road as the average of the traffic for the three consecutive accounting years (FY25 to FY27) is estimated to be 32,216 PCUs which is higher than the target traffic. As per concession agreement of JDTL, if the Actual Average Traffic shall have fallen short of or exceeded the target traffic by more than 2.5 percent, then there will be an increase or reduction in concession period. Based on the concession agreement of JDTL, if the traffic in PCUs at target date is higher than the target traffic, then for every 1 percent increase, the concession period shall be decreased by 0.75 percent, and no more than 10 per cent of the base concession period. The concession period may, therefore, be subject to a decrease by 2.6 years to 23.4 years. Accordingly the revised concession period arrive at 07 January 2041. In lieu of reduction in concession period, the

concessionaire may opt to pay 25 percent of the realisable fee over the remaining period from 7th January 2041 to NHAI for the balance concession period. As represented to us by the investment manager, JDTL is expected to share 25% of revenue for balance period, and has projected revenue of JDTL on the net of share of revenue basis (i.e. after deducting 25% of revenue to be shared to NHAI). Accordingly, no additional adjustment in relation to share of revenue that belongs to NHAI is required in order to derive the enterprise values of the SPVs.

7.2.6. **Operating and Maintenance Expenses:**

Since all the SPVs are operational on the Valuation Date, following are the major costs incurred by the SPV:

Operation and Maintenance Costs (Routine) ("O&M Costs")

These are routine costs incurred every year. These costs are related to normal wear and tear of the road and hence involve repairing the patches damaged mainly due to heavy traffic movement. The primary purpose of these expenses is to maintain the road as per the specifications mentioned in the respective concession agreement.

Major Maintenance and Repairs Costs ("MMR Costs")

MMR cost is typically incurred once in few years. These expenses are primarily related to the construction or re-laying of the top layer of the road. Accordingly such costs includes considerable amounts of materials and labour.

In the present case, all the SPVs along with its immediate holding company have entered into a sub-contracting agreement with DBL for the operations, maintenance and management of the SPVs' road projects. As per the sub-contracting agreement, I understand from the Investment Manager that DBL would be inter-alia responsible for the following:

a. Operation and maintenance of the road assets (or project) in conformity with the specifications and standards mentioned in the O&M sub-contract agreement, O&M agreement and the concession agreement of the respective SPVs.
b. Collection of toll fees, if any, from the users of the project as per the provisions of the respective concession agreements
c. Performing all activities, for ensuring timely release of the annuity (wherever applicable) to the concessionaire in accordance with the provisions of the concession agreement, including coordination with the relevant authority, conducting site visits, undertaking requisite tests at the project site, liaisoning with relevant officials, submission of test reports;
d. Performance and fulfilment of all other obligations of the sub-contractor and matters incidental to it

The operating and maintenance expenses that will be incurred by the sub-contractor i.e. DBL shall include:

a. Cost of salaries and other compensation to employees of the sub-contractor;
b. Cost of materials, supplies, utilities and other services,
c. Premium for sub-contractors insurance,
d. All profit, all license, royalty and other fees, all taxes, duties, cess and fees due and payable for O&M;
e. All repairs, replacements, reconstruction, reinstatement, improvement, general and major maintenance costs and
f. All other expenditure required to be incurred under the applicable laws, applicable permits or the concession agreement in connection with the O&M

The obligation of above mentioned activities including incurring major maintenance is with the sub-contractor. The sub-contractor i.e. DBL is expected to incur at its own cost and expenses to undertake the responsibilities of the operation and maintenance of the project including major maintenance and repairs. In lieu of the above services, the SPVs along with its

immediate holding company shall be responsible to provide payment to the sub-contractor as per the schedule or mechanism agreed as per the individual concession agreements. I have relied on the details provided by the Investment Manager in relation to the routine operating and maintenance expenses as well as the major maintenance and repairs expenses for the projected period.

7.2.7. **Defect Liability Payments:**

As per the respective O&M Agreements between the SPVs, the Holding Companies and DBL, DBL has provided security deposits to the Holding Companies in relation to the expected performance guarantee of the routine O&M and MMR expenses in relation to the SPVs. This security deposit is expected to be paid back to DBL based on its performance of conducting and incurring the routine O&M and MMR activities for the SPVs. Accordingly, the outflows pertaining to the above security deposits have been considered during the projected period.

7.2.8. **Depreciation and Amortization:** The toll collection rights or the financial rights (intangible assets) of the SPVs are being amortized using straight line method. Under this method, the carrying value of the toll collection rights is amortized in the proportion in balance useful life of the concessionaire period

7.2.9. **Capital Expenditure ("Capex"):** As represented by the Investment Manager, regarding the maintenance Capex, the same has already been considered in the Operations & Maintenance expenditure and Major maintenance expenditure for the projected period and regarding the expansion Capex, the SPVs are not expected to incur any capex in the projected period.

7.2.10. **Taxes:** As per the discussions with the Investment Manager, taxes payable by the SPVs for the projected period shall be MAT rates or normal tax rates, whichever is applicable. While projecting the tax numbers, 80-IA benefits under the Income Tax Act, 1961 has been considered whenever applicable to arrive at tax payable by the SPVs.

As per the discussion with the Investment manager the NHAI HAM SPV's are eligible for 80IA considering the letter of allotment was signed before the sunset clause (i.e 31st March 2017).

As per the discussions with the Investment Manager, for JDTL the company wish to continue with old tax regime till FY 32 and avail the benefits of additional depreciation, section 115 JB and section 80IA and thereafter shift to the new tax regime (the base tax rate of 22%) for the current valuation exercise.

7.2.11. **Working Capital:**

The investment manager has provided projected financial information on biannual basis for those SPVs where annuity payments are the material component of the revenue. The biannual period are based on the annuity dates of the respective SPVs. The amount of O&M expenses payable to DBL by the SPVs on the basis of their respective O&M Agreements is also due and payable on the basis of the annuity amount and date on which annuities are received. Hence, for all the SPVs where annuity payments are material component of revenue, there are no receivables and payables estimated to be outstanding at their respective annuity dates during the biannually prepared projected period. Other working capital items outstanding as at the Valuation Date mainly represents the advance income tax, prepaid expenses, etc. that are separately adjusted in the calculation of the enterprise values of the SPVs.

For the Toll SPVs or toll revenues, all the routine expenses are expected to be met by the daily toll collections. Accordingly, I understand the working capital is expected to be stable and is not expected to vary drastically over a period of time. Hence, changes in working capital have been considered as an adjustment for its release or payment in the projected cash flows towards the end of the concession period.

Other Adjustments

Receivable from NHAI and Payable to DBL: I understand from the Investment Manager, certain SPVs had incurred additional amount in relation to the Project Cost which can be

attributed towards change in scope of work or/and change in law (GST Law, etc.). These amount are receivable from NHAI as per the concession agreement and accordingly, are disclosed as receivable from NHAI in the financial statements as at the Valuation Date. We understand from the Investment Manager, the above amount receivable from NHAI is required to be paid to the EPC contractor i.e. DBL once received from NHAI after adjustment with the advance paid to or amount claimed by DBL. I understand, this entire balance will be settled by end of next financial year. Accordingly, the net amount is adjusted and disclosed separately in our calculation of the enterprise value for the NHAI HAM SPVs at present value.

Receivable from State and Payable to DBL: I understand from the Investment Manager, in case of state SPVs – DMHTL, DHPTL and DHRTL, the state authorities had withheld certain portions of the annuities on account of their claim on work to be completed by the respective SPVs. Correspondingly, the SPVs had withheld proportionate amount payable to the O&M Contractor i.e. DBL. As represented to me by the Investment Manager, the withheld annuities are expected to be received by the end of next financial year end. Accordingly, the same is adjusted and disclosed separately in our calculation of the enterprise value for the above mentioned State SPVs at present value.

7.3. Impact of Ongoing Material Litigation on Valuation

As on 31st January 2021, there are ongoing litigations as shown in Appendix 4. As represented by the Investment Manager, the Sponsor would indemnify the Trust and its SPVs against any financial losses suffered or incurred in connection with any pending or threatened claims against the Trust made prior to the transfer of the assets to the Trust, hence no impact has been factored on the valuation of the SPVs.

7.4. <u>Calculation of Weighted Average Cost of Capital for the SPVs</u>

7.4.1. Cost of Equity:

Cost of Equity (CoE) is a discounting factor to calculate the returns expected by the equity holders depending on the perceived level of risk associated with the business and the industry in which the business operates.

For this purpose, I have used the Capital Asset Pricing Model (CAPM), which is a commonly used model to determine the appropriate cost of equity for the SPVs.

K(e) = Rf + [ERP* Beta] + CSRP

Wherein:
K(e) = cost of equity
Rf = risk free rate
ERP = Equity Risk Premium
TARP = Temporary Additional Risk Premium
Beta = a measure of the sensitivity of assets to returns of the overall market
CSRP = Company Specific Risk Premium (In general, an additional company-specific risk premium will be added to the cost of equity calculated pursuant to CAPM).
For valuation exercise, I have arrived at adjusted cost of equity of the SPVs based on the above calculation (Refer Appendix 2).

7.4.2. Risk Free Rate:

I have applied a risk free rate of return of 6.33% on the basis of the zero coupon yield curve as on 31st January 2021 for government securities having a maturity period of 10 years, as quoted on the website of Clearing Corporation of India Limited ("**CCIL**").

7.4.3. Equity Risk Premium ("ERP"):

Equity Risk Premium is a measure of premium that investors require for investing in equity markets rather than bond or debt markets. The equity risk premium is estimated based on

consideration of historical realised returns on equity investments over a risk-free rate as represented by 10 year government bonds. Based on the aforementioned, a 7% equity risk premium for India is considered appropriate.

7.4.4. **Beta:**

Beta is a measure of the sensitivity of a company's stock price to the movements of the overall market index. In the present case, I find it appropriate to consider the beta of companies in similar business/ industry to that of the SPVs for an appropriate period.

For the valuation of the NHAI HAM SPVs, State ATM SPVs and State AM SPVs, I find it appropriate to consider the beta of MEP Infrastructure Developers Ltd. and Sadbhav Engineering Ltd for an appropriate period. The beta so arrived, is further adjusted based on advantageous factors of mentioned SPVs like completion of projects, revenue certainty, past collection trend, lack of execution uncertainty etc. to arrive at the adjusted unlevered beta appropriate to the SPV

I have further unlevered the beta of such companies based on market debt-equity of the respective company using the following formula:
Unlevered Beta = Levered Beta / [1 + (Debt / Equity) *(1-T)]

Further I have re-levered it based on debt-equity at 70:30 based on the industry Debt: Equity ratio of annuity based road DBFOT/BOT projects using the following formula:
Re-levered Beta = Unlevered Beta * [1 + (Debt / Equity) *(1-T)]

Accordingly, as per above, I have arrived at re-levered betas of the SPVs. (Refer Appendix 2)

For the valuation of the Toll SPVs, I find it appropriate to consider the beta of Ashoka Buildcon Limited and IRB Infrastructure Developers Limited for an appropriate period.

I have further unlevered the beta of such companies based on market debt-equity of the respective company using the following formula:
Unlevered Beta = Levered Beta / [1 + (Debt / Equity) *(1-T)]

Further I have re-levered it based on debt-equity at 50:50 based on the industry Debt: Equity ratio of a road toll based BOT/DBFOT projects using the following formula:
Re-levered Beta = Unlevered Beta * [1 + (Debt / Equity) *(1-T)]

Accordingly, as per above, I have arrived at re-levered betas of the SPVs. (Refer Appendix 2)

7.4.5. **Company Specific Risk Premium ("CSRP"):**

Discount Rate is the return expected by a market participant from a particular investment and shall reflect not only the time value of money but also the risk inherent in the asset being valued as well as the risk inherent in achieving the future cash flows. In the present case, considering the counter-party risk for certain SPVs, considering the length of the explicit period for the Toll SPVs, and basis my discussion with Investment Manager, I found it appropriate to consider the following CSRPs:

Sr. No.	SPVs	CSRP
1	DLSHL	0.0%
2	DKZHL	0.0%
3	DYWHL	0.0%
4	DTAHL	0.0%
5	DWBHL	0.0%
6	DMYHL	0.0%
7	DAVTL	0.5%
8	DBSTL	0.5%
9	DHDTL	0.5%
10	DSSTL	0.5%
11	Sitamau	0.5%
12	DMSTL	0.5%
13	DUNTL	0.5%
14	DSBTL	0.5%

15	DPRTL	0.5%
16	DTNTL	0.5%
17	DNMTL	0.5%
18	DBDTL	0.5%
19	DJSTL	0.5%
20	DMHTL	0.5%
21	DHPTL	0.5%
22	DHRTL	0.5%
23	JDTL	1.0%
24	SUIPL	1.0%

7.4.6. **Cost of Debt:**

The calculation of Cost of Debt post-tax can be defined as follows:
K(d) = K(d) pre-tax * (1 - T)

Wherein:
K(d) = Cost of debt
T = tax rate as applicable

For valuation exercise, pre-tax cost of debt has been considered on the basis of details representation provided by the Investment Manager.

7.4.7. **Weighted Average Cost of Capital (WACC):**

The discount rate, or the WACC, is the weighted average of the expected return on equity and the cost of debt. The weight of each factor is determined based on the company's optimal capital structure.

Formula for calculation of WACC:
WACC = [K(d) * Debt /(Debt + Equity)] + [K(e) * (1 - Debt /(Debt + Equity))]

Accordingly, as per above, I have arrived the WACC for the explicit period of the SPVs. *(Refer Appendix 2 for detailed workings).*

7.5. At the end of the agreed concession period, the rights in relation to the underlying assets, its operations, the obligation to maintain the road and the right to collect tolls from the vehicles using the road revert to the government authority that granted the concession by the SPVs. Hence, SPVs are not expected to generate cash flow after the expiry of their respective concession agreements. Accordingly, I found it appropriate not to consider terminal period value, which represents the present value at the end of explicit forecast period of all subsequent cash flows to the end of the life of the asset or into perpetuity if the asset has an indefinite life, in this valuation exercise.

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8. Valuation Conclusion

8.1. The current valuation has been carried out based on the discussed valuation methodology explained herein earlier. Further, various qualitative factors, the business dynamics and growth potential of the business, having regard to information base, management perceptions, key underlying assumptions and limitations were given due consideration.

8.2. I have been represented by the Investment Manager that there is no potential devolvement on account of the contingent liability as of valuation date; hence no impact has been factored in to arrive at fair EV of the SPVs.

8.3. Based on the above analysis, the fair EV as on the Valuation Date of the SPVs is as mentioned below:

INR Mn

Sr. No.	SPVs	Last Date	Approximate Balance Period	Enterprise Value
1	DLSHL	27 April 2034	13 Years 3 Months	9,579
2	DKZHL	19 March 2035	14 Years 2 Months	4,204
3	DYWHL	29 July 2034	13 Years 6 Months	4,163
4	DTAHL	16 November 2034	13 Years 10 Months	3,523
5	DWBHL	18 November 2034	13 Years 10 Months	4,280
6	DMYHL	19 May 2035	14 Years 4 Months	4,772
7	DAVTL	26 July 2027	6 Years 6 Months	491
8	DBSTL	12 May 2028	7 Years 3 Months	1,757
9	DHDTL	06 March 2030	9 Years 1 Months	748
10	DSSTL	25 March 2026	5 Years 2 Months	791
11	Sitamau	28 March 2026	5 Years 2 Months	363
12	DMSTL	15 May 2026	5 Years 3 Months	703
13	DUNTL	15 May 2027	6 Years 3 Months	873
14	DSBTL	09 June 2025	4 Years 4 Months	338
15	DPRTL	30 March 2030	9 Years 2 Months	2,215
16	DTNTL	26 May 2028	7 Years 4 Months	963
17	DNMTL	03 July 2026	5 Years 5 Months	1,208
18	DBDTL	30 March 2027	6 Years 2 Months	778
19	DJSTL	09 May 2027	6 Years 3 Months	905
20	DMHTL	28 September 2026	5 Years 8 Months	1,060
21	DHPTL	28 September 2026	5 Years 8 Months	1,749
22	DHRTL	28 September 2026	5 Years 8 Months	1,257
23	JDTL	06 September 2042	21 Years 7 Months	18,388
24	SUIPL	30 March 2033	12 Years 2 Months	284
				65,392

(Refer Appendix 1 for detailed workings)

8.4. EV is described as the total value of the equity in a business plus the value of its debt and debt related liabilities, minus any cash or cash equivalents to meet those liabilities.

8.5. The fair EV of the SPVs is estimated using DCF method. The valuation requires Investment Manager to make certain assumptions about the model inputs including forecast cash flows, discount rate, and credit risk.

8.6. Valuation is based on estimates of future financial performance or opinions, which represent reasonable expectations at a particular point of time, but such information, estimates or opinions are not offered as predictions or as assurances that a particular level of income or profit will be

achieved, a particular event will occur or that a particular price will be offered or accepted. Actual results achieved during the period covered by the prospective financial analysis will vary from these estimates and the variations may be material.

8.7. Accordingly, I have conducted sensitivity analysis on certain model inputs, the results of which are as indicated below:

1. Weighted Average Cost of Capital (WACC) by increasing / decreasing it by 1.0%
2. Expenses by increasing / decreasing it by 20%

1. Fair Enterprise Valuation Range based on WACC parameter (1.0%)

INR Mn

Sr. No.	SPVs	WACC + 1.0%	EV	Base WACC	EV	WACC - 1.0%	EV
1	DLSHL	8.8%	9,110	7.8%	9,579	6.8%	10,088
2	DKZHL	8.8%	4,005	7.8%	4,204	6.8%	4,420
3	DYWHL	8.8%	3,983	7.8%	4,163	6.8%	4,360
4	DTAHL	8.9%	3,361	7.9%	3,523	6.9%	3,699
5	DWBHL	8.8%	4,079	7.8%	4,280	6.8%	4,499
6	DMYHL	8.8%	4,550	7.8%	4,772	6.8%	5,014
7	DAVTL	9.3%	476	8.3%	491	7.3%	506
8	DBSTL	9.3%	1,693	8.3%	1,757	7.3%	1,807
9	DHDTL	9.3%	720	8.3%	748	7.3%	777
10	DSSTL	9.3%	773	8.3%	791	7.3%	810
11	Sitamau	9.4%	355	8.4%	363	7.4%	372
12	DMSTL	9.3%	687	8.3%	703	7.3%	720
13	DUNTL	9.3%	848	8.3%	873	7.3%	898
14	DSBTL	9.3%	331	8.3%	338	7.3%	345
15	DPRTL	9.3%	2,131	8.3%	2,215	7.3%	2,305
16	DTNTL	9.3%	933	8.3%	963	7.3%	994
17	DNMTL	9.3%	1,178	8.3%	1,208	7.3%	1,239
18	DBDTL	9.4%	757	8.4%	778	7.4%	800
19	DJSTL	9.4%	880	8.4%	905	7.4%	930
20	DMHTL	9.3%	1,035	8.3%	1,060	7.3%	1,086
21	DHPTL	9.3%	1,708	8.3%	1,749	7.3%	1,791
22	DHRTL	9.4%	1,229	8.4%	1,257	7.4%	1,287
23	JDTL	10.8%	16,844	9.8%	18,388	8.8%	20,149
24	SUIPL	11.1%	271	10.1%	284	9.1%	299
	Total of all SPVs		**61,940**		**65,392**		**69,197**

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2. Fair Enterprise Valuation Range based on Expense parameter (20%)

INR Mn

Sr. No.	SPVs	EV at Expenses + 20%	EV at Base Expenses	EV at Expenses - 20%
1	DLSHL	9,323	9,579	9,847
2	DKZHL	3,956	4,204	4,451
3	DYWHL	3,796	4,163	4,530
4	DTAHL	3,245	3,523	3,793
5	DWBHL	3,942	4,280	4,616
6	DMYHL	4,548	4,772	5,242
7	DAVTL	478	491	503
8	DBSTL	1,699	1,757	1,798
9	DHDTL	715	748	780
10	DSSTL	773	791	809
11	Sitamau	355	363	372
12	DMSTL	684	703	723
13	DUNTL	855	873	891
14	DSBTL	329	338	347
15	DPRTL	2,172	2,215	2,258
16	DTNTL	932	963	993
17	DNMTL	1,178	1,208	1,238
18	DBDTL	758	778	798
19	DJSTL	873	905	936
20	DMHTL	965	1,060	1,151
21	DHPTL	1,630	1,749	1,862
22	DHRTL	1,154	1,257	1,356
23	JDTL	17,648	18,388	19,124
24	SUIPL	256	284	203
		62,264	**65,392**	**68,620**

The above represents reasonable range of fair enterprise valuation of the SPVs.

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9. Additional Procedures to be complied with in accordance with InvIT regulations

Scope of Work

9.1 The Schedule V of the SEBI InvIT Regulations prescribes the minimum set of mandatory disclosures to be made in the valuation report. In this reference, the minimum disclosures in valuation report may include following information as well, so as to provide the investors with the adequate information about the valuation and other aspects of the underlying assets of the InvIT.

The additional set of disclosures, as prescribed under Schedule V of InvIT Regulations, to be made in the valuation report of the SPVs are as follows:

- List of one-time sanctions/approvals which are obtained or pending;
- List of up to date/overdue periodic clearances;
- Statement of assets;
- Estimates of already carried as well as proposed major repairs and improvements along with estimated time of completion;
- Revenue pendencies including local authority taxes associated with InvIT asset and compounding charges, if any;
- On-going material litigations including tax disputes in relation to the assets, if any;
- Vulnerability to natural or induced hazards that may not have been covered in town planning/ building control.

Limitations

9.2 This Report is based on the information provided by the representatives of the Investment Manager. The exercise has been restricted and kept limited to and based entirely on the documents, records, files, registers and information provided to me. I have not verified the information independently with any other external source.

9.3 I have assumed the genuineness of all signatures, the authenticity of all documents submitted to me as original, and the conformity of the copies or extracts submitted to me with that of the original documents.

9.4 I have assumed that the documents submitted to me by the representatives of Investment Manager in connection with any particular issue are the only documents related to such issue.

9.5 I have reviewed the documents and records from the limited perspective of examining issues noted in the scope of work and I do not express any opinion as to the legal or technical implications of the same.

Analysis of Additional Set of Disclosures for the SPVs

A. <u>List of one-time sanctions/approvals which are obtained or pending:</u>

As informed by the Investment Manager there are no applications for government sanctions/licenses obtained by the SPVs related to the Road for which approval is pending as on 31st January 2021. The list of such sanctions/ approvals obtained by the SPVs till 31st January 2021 is provided in Appendix 3.1 to Appendix 3.24. For 3 SPVs viz. DBL Hassan Periyapatna Tollways Limited, DBL Mundargi Harapanahalli Tollways Limited and DBL Hirekerur Ranibennur Tollways Limited, I was provided with the supplementary agreements entered with the Governor of Karnataka, which stated that all listed approvals therein are in place. It is to be noted that I was not provided with documents to verify these approvals. Also, for few SPVs, I was not provided with any / complete set of documents. However, all the SPVs have received PCOD/COD and the SPVs have also started receiving annuity payments.

B. List of up to date/ overdue periodic clearances:

The Investment Manager has confirmed that the SPVs are not required to take any periodic clearances and hence there are no up to date/ overdue periodic clearances as on 31 January 2021.

C. Statement of assets included:

The details of assets of the SPVs as at 31st January 2021 are as mentioned below:

INR Mn

Sr. No.	SPVs	Net Fixed Assets	Net Intangible Assets	Other Non - Current Assets	Current Assets
1	DLSHL	-	-	7,712.10	3,501.33
2	DKZHL	-	-	2,811.99	1,301.48
3	DYWHL	-	-	2,614.13	2,464.96
4	DTAHL	-	-	2,174.48	1,282.83
5	DWBHL	-	-	2,804.98	1,628.87
6	DMYHL	-	-	2,907.24	1,616.16
7	DAVTL	0.00	55.68	413.73	199.21
8	DBSTL	-	708.99	1,357.00	277.86
9	DHDTL	-	94.47	668.99	147.95
10	DSSTL	0.07	43.85	654.69	217.88
11	Sitamau	2.30	90.13	234.05	115.44
12	DMSTL	-	121.59	554.90	186.73
13	DUNTL	0.10	56.57	630.90	387.61
14	DSBTL	-	77.01	283.01	124.07
15	DPRTL	-	417.21	1,579.04	493.52
16	DTNTL	-	84.72	764.20	284.98
17	DNMTL	0.04	-	1,147.72	345.48
18	DBDTL	-	-	732.33	252.95
19	DJSTL	-	-	860.32	389.59
20	DMHTL	-	-	815.40	270.87
21	DHPTL	-	-	1,448.03	318.70
22	DHRTL	-	-	1,126.58	221.71
23	JDTL	1.79	6,965.72	-	1,627.73
24	SUIPL	0.00	215.30	10.67	13.36

Source: Investment Manager

D. Estimates of already carried as well as proposed major repairs and improvements along with estimated time of completion:

I have been informed that maintenance is regularly carried out by DBL on behalf of the SPVs in order to maintain the working condition of the assets.

Major Maintenance & Repairs to be incurred by the SPV (Refer Note 1)

INR Mn

SPVs	FY 21	FY 22	FY 23	FY 24	FY 25	FY 26	FY 27	FY 28	FY 29	FY 30	FY 31	FY 32	FY 33	FY 34	FY 35	FY 36	FY 37	FY 38	FY 39	FY 40	FY 41	FY 42	FY 43
DLSHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DKZHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DYWHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DTAHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DWBHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMYHL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DAVTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DBSTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHDTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DSSTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sitamau	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMSTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUNTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DSBTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DPRTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DTNTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DNMTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DBDTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DJSTL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DMHTL	-	-	-	179	188	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHPTL	-	-	-	196	206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DHRTL	-	-	-	190	199	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JDTL	-	-	-	503	-	-	-	-	-	1,349	-	-	-	-	-	2,712	-	-	-	-	4,615	-	-
SUIPL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Investment Manager

Note 1:

In the present case, all the SPVs have entered into the O&M agreement with its immediate holding company for the operations and maintenance services of the SPVs. The SPVs along with its immediate holding company have entered into a sub-contracting agreement with DBL for the operations, maintenance and management of the SPVs' road projects. As per the sub-contracting agreement, I understand from the Investment Manager that DBL would be inter-alia responsible for incurring expenses related all repairs, replacements, reconstruction, reinstatement, improvement, general and major maintenance costs and all other expenditure required to be incurred under the applicable laws, applicable permits or the concession agreement in connection with the O&M. Accordingly, the obligation of incurring major maintenance is with the sub-contractor. The sub-contractor i.e. DBL is expected to incur at its own cost and expenses to undertake the responsibilities of the operation and maintenance of the project including major maintenance and repairs.

As represented to us by the Investment Manager, all the SPVs except for DMHTL, DHPTL, DHRTL and JDTL, the amount payable as operating and maintenance expenses as per the individual schedule of the respective sub-contracting agreement is the only amount payable by the SPVs to the sub-contractor i.e. DBL in relation to the routine O&M costs as well as major maintenance and repairs costs. The amount payable as operating and maintenance expenses as per the individual schedule of the respective sub-contracting agreement have been considered as part of the operating expenses. Accordingly, the costs attributable towards the major maintenance and repairs for all the SPVs except for DMHTL, DHPTL, DHRTL and JDTL is disclosed as Nil.

E. Revenue pendencies including local authority taxes associated with InvIT asset and compounding charges, if any:

Investment Manager has informed me that there are no material dues including local authority taxes (such as Municipal Tax, Property Tax, etc.) pending to be payable to the government authorities with respect to the SPVs (InvIT assets).

F. On-going material litigations including tax disputes in relation to the assets, if any:

As informed by the Investment Manager, the status of ongoing litigations, status of arbitration matters and status of tax assessments are updated in Appendix 4A, 4B and 4C respectively. I have noted that majority of the cases are filed by the SPVs against various entities

Particulars	Number of Cases filed by SPVs	Number of Cases filed against SPVs
Litigations	1	4
Arbitrations	8	2

Investment Manager has informed us that it expects majority of the cases to be settled in favour of the SPVs. Further, Investment Manager has informed us that majority of the cases are having low to medium risk and accordingly no material outflow is expected against the litigations. As represented by the Investment Manager, DBL would indemnify the SPVs against any financial losses suffered or incurred in connection with any pending or threatened claims against the SPVs.

I was not been provided with the documents for the following cases as mentioned in the below table:

Sr. No.	SPVs	No. of Cases	Particulars
1	Jalpa Devi Tollways Limited	1	Documents for the hearing which took place on 20 March 2020.
2	DBL Hassan Periyapatna Tollways Limited	1	Documents regarding temporary injunction and vacating the property by court, defendant's filing and undertakings.
3	DBL Kalmath Zarap Highway Private Limited	1	Documents regarding the replies filed by the respondent and the latest hearing which took place on 7 January 2021.
4	DBL Nadiad-Modasa Toll ways Limited	1	Documents for the hearing which took place on 5 February 2021.
5	Suryavanshi Infrastructure Pvt Ltd.	1	Complete set of documents for the matter.

Hence, I have relied on the Investment Manager with respect to the current status of the abovementioned cases.

G. Vulnerability to natural or induced hazards that may not have been covered in town planning/ building control:

Investment Manager has confirmed to me that there are no such natural or induced hazards which have not been considered in town planning/ building control.

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10. Sources of Information

For the purpose of undertaking this valuation exercise, I have relied on the following sources of information provided by the Investment Manager:

10.1. Unaudited provisional financial statements of the SPVs as on 31st January 2021 and as on 31st December 2020

10.2. Audited financial Statement of the SPVs for year ended 31st March 2018, 31st March 2019 , 31st March 2020

10.3. Projected financial information for the remaining project life for each of the SPVs;

10.4. Details of projected Major Maintenance & Repairs (MMR) and Capital Expenditure (Capex);

10.5. Traffic Study Projection Report dated 27th January 2020 prepared by M/s Ramoll India Private Limtied for JDTL.

10.6. Details of brought forward losses and MAT credit (as per Income Tax Act) of the SPVs as at 31st March 2020;

10.7. Details of Written Down Value (WDV) (as per Income Tax Act) of assets as at 31st March 2020;

10.8. Concession Agreement of each of the SPVs with respective authority;

10.9. Operation & Maintenance Subcontract Agreement entered for each of the SPVs with the DBL and respective holding company:

10.10. Shareholders acquisition cum Shareholders agreement entered for each of the SPV's with the DBL.

10.11. List of licenses / approvals, details of tax litigations, civil proceeding and arbitrations of the SPVs;

10.12. Shareholding pattern as on 31st January 2021 of the SPVs, Holding Companies and other entities mentioned in this Report;

10.13. Management Representation Letter by the Investment Manager dated 23rd February 2021;

10.14. Relevant data and information about the SPVs provided to us by the Investment Manager either in written or oral form or in the form of soft copy;

10.15. Information provided by leading database sources, market research reports and other published data.

The information provided to me by the Investment Manager in relation to the SPVs included but not limited to historical financial statements, forecasts/projections, other statements and assumptions about future matters like forward-looking financial information prepared by the Investment Manager. The forecasts and projections as supplied to me are based upon assumptions about events and circumstances which are yet to occur.

By nature, valuation is based on estimates, however, considering the outbreak of COVID-19 Pandemic and the consequent economic slowdown, the risks and uncertainties relating to the events occurring in the future, the actual figures in future may differ from these estimates and may have a significant impact on the valuation of the SPVs.

I have not tested individual assumptions or attempted to substantiate the veracity or integrity of such assumptions in relation to the forward-looking financial information, however, I have made sufficient enquiries to satisfy myself that such information has been prepared on a reasonable basis.

Notwithstanding anything above, I cannot provide any assurance that the forward looking financial information will be representative of the results which will actually be achieved during the cash flow forecast period.

Further, considering the current crisis in relation to COVID-19 in India and across the globe, I have been informed by the Investment Manager, that the forecasts / projections provided for the valuation exercises are prepared after reasonably evaluating and incorporating the impact of outbreak of COVID-19 pandemic as per prevalent conditions as on date.

11. Exclusions and Limitations

11.1. My Report is subject to the limitations detailed hereinafter. This Report is to be read in totality, and not in parts, in conjunction with the relevant documents referred to herein.

11.2. Valuation analysis and results are specific to the purpose of valuation and is not intended to represent value at any time other than the valuation date of 31st January 2021 ("Valuation Date") mentioned in the Report and as per agreed terms of my engagement. It may not be valid for any other purpose or as at any other date. Also, it may not be valid if done on behalf of any other entity.

11.3. This Report, its contents and the results are specific to (i) the purpose of valuation agreed as per the terms of my engagements; (ii) the Valuation Date and (iii) are based on the financial information of the SPVs till 31st January 2021 . The Investment Manager has represented that the business activities of the SPVs have been carried out in normal and ordinary course between 31st January 2021 and the Report Date and that no material changes have occurred in the operations and financial position between 31st January 2021 and the Report date.

11.4. I have been informed by the Investment Manager that there will be limited impact of the on-going COVID-19 pandemic outbreak on the operations of the SPVs and the projections provided to me are after considering the same.

11.5. The scope of my assignment did not involve me performing audit tests for the purpose of expressing an opinion on the fairness or accuracy of any financial or analytical information that was provided and used by me during the course of my work. The assignment did not involve me to conduct the financial or technical feasibility study. I have not done any independent technical valuation or appraisal or due diligence of the assets or liabilities of the SPVs or any of other entity mentioned in this Report and have considered them at the value as disclosed by the SPVs in their regulatory filings or in submissions, oral or written, made to me.

11.6. In addition, I do not take any responsibility for any changes in the information used by me to arrive at my conclusion as set out herein which may occur subsequent to the date of my Report or by virtue of fact that the details provided to me are incorrect or inaccurate.

11.7. I have assumed and relied upon the truth, accuracy and completeness of the information, data and financial terms provided to me or used by me; I have assumed that the same are not misleading and do not assume or accept any liability or responsibility for any independent verification of such information or any independent technical valuation or appraisal of any of the assets, operations or liabilities of the SPVs or any other entity mentioned in the Report. Nothing has come to my knowledge to indicate that the material provided to me was misstated or incorrect or would not afford reasonable grounds upon which to base my Report.

11.8. This Report is intended for the sole use in connection with the purpose as set out above. It can however be relied upon and disclosed in connection with any statutory and regulatory filing in connection with the provision of SEBI InvIT Regulations. However, I will not accept any responsibility to any other party to whom this Report may be shown or who may acquire a copy of the Report, without my written consent.

11.9. It is clarified that this Report is not a fairness opinion under any of the stock exchange/ listing regulations. In case of any third party having access to this Report, please note this Report is not a substitute for the third party's own due diligence/ appraisal/ enquiries/ independent advice that the third party should undertake for his purpose.

11.10. Further, this Report is necessarily based on financial, economic, monetary, market and other conditions as in effect on, and the information made available to me or used by me up to, the date

hereof. Subsequent developments in the aforementioned conditions may affect this Report and the assumptions made in preparing this Report and I shall not be obliged to update, revise or reaffirm this Report if information provided to me changes.

11.11. This Report is based on the information received from the sources as mentioned in Section 9 of this Report and discussions with the Investment Manager. I have assumed that no information has been withheld that could have influenced the purpose of my Report.

11.12. Valuation is not a precise science and the conclusions arrived at in many cases may be subjective and dependent on the exercise of individual judgment. There is, therefore, no indisputable single value. I have arrived at an indicative EV based on my analysis. While I have provided an assessment of the value based on an analysis of information available to me and within the scope of my engagement, others may place a different value on this business.

11.13. Any discrepancies in any table / appendix between the total and the sums of the amounts listed are due to rounding-off.

11.14. Valuation is based on estimates of future financial performance or opinions, which represent reasonable expectations at a particular point of time, but such information, estimates or opinions are not offered as predictions or as assurances that a particular level of income or profit will be achieved, a particular event will occur or that a particular price will be offered or accepted. Actual results achieved during the period covered by the prospective financial analysis will vary from these estimates and the variations may be material.

11.15. I do not carry out any validation procedures or due diligence with respect to the information provided/extracted or carry out any verification of the assets or comment on the achievability and reasonableness of the assumptions underlying the financial forecasts, save for satisfying ourselves to the extent possible that they are consistent with other information provided to me in the course of this engagement.

11.16. My conclusion assumes that the assets and liabilities of the SPVs, reflected in their respective latest balance sheets remain intact as of the Report date.

11.17. Whilst all reasonable care has been taken to ensure that the factual statements in the Report are accurate, neither myself, nor any of my associates, officers or employees shall in any way be liable or responsible either directly or indirectly for the contents stated herein. Accordingly, I make no representation or warranty, express or implied, in respect of the completeness, authenticity or accuracy of such factual statements. I expressly disclaim any and all liabilities, which may arise based upon the information used in this Report. I am not liable to any third party in relation to the issue of this Report.

11.18. The scope of my work has been limited both in terms of the areas of the business & operations which I have reviewed and the extent to which I have reviewed them. There may be matters, other than those noted in this Report, which might be relevant in the context of the transaction and which a wider scope might uncover.

11.19. For the present valuation exercise, I have also relied on information available in public domain; however the accuracy and timelines of the same has not been independently verified by me.

11.20. In the particular circumstances of this case, my liability (in contract or under any statute or otherwise) for any economic loss or damage arising out of or in connection with this engagement, however the loss or damage caused, shall be limited to the amount of fees actually received by me from the Investment Manager, as laid out in the engagement letter for such valuation work.

11.21. In rendering this Report, I have not provided any legal, regulatory, tax, accounting or actuarial advice and accordingly I do not assume any responsibility or liability in respect thereof.

11.22. This Report does not address the relative merits of investing in InvIT as compared with any other alternative business transaction, or other alternatives, or whether or not such alternatives could be achieved or are available.

11.23. I am not an advisor with respect to legal, tax and regulatory matters for the proposed transaction. No investigation of the SPVs' claim to title of assets has been made for the purpose of this Report and the SPVs' claim to such rights have been assumed to be valid. No consideration has been given to liens or encumbrances against the assets, beyond the loans disclosed in the accounts. Therefore, no responsibility is assumed for matters of a legal nature.

11.24. I have no present or planned future interest in the Trustee, Investment Manager or the SPVs and the fee for this Report is not contingent upon the values reported herein. My valuation analysis should not be construed as investment advice; specifically, I do not express any opinion on the suitability or otherwise of entering into any financial or other transaction with the Investment Manager or SPVs.

11.25. I have submitted the draft valuation report to the Trust and Investment Manager for confirmation of accuracy of the factual data used in my analysis and to prevent any error or inaccuracy in this Report.

11.26. **Limitation of Liabilities**

i. It is agreed that, having regard to the RV's interest in limiting the personal liability and exposure to litigation of its personnel, the Sponsor, the Investment Manager and the Trust will not bring any claim in respect of any damage against any of RV personally.

ii. In no circumstances RV shall be responsible for any consequential, special, direct, indirect, punitive or incidental loss, damages or expenses (including loss of profits, data, business, opportunity cost, goodwill or indemnification) in connection with the performance of the services whether such damages are based on breach of contract, tort, strict liability, breach of warranty, negligence, or otherwise, even if the Investment Manager had contemplated and communicated to RV the likelihood of such damages. Any decision to act upon the deliverables (including this Report) is to be made by the Investment Manager and no communication by RV should be treated as an invitation or inducement to engage the Investment Manager to act upon the deliverable(s).

iii. It is clarified that the Investment Manager will be solely responsible for any delays, additional costs, or other liabilities caused by or associated with any deficiencies in their responsibilities, misrepresentations, incorrect and incomplete information including information provided to determine the assumptions.

iv. RV will not be liable if any loss arises due to the provision of false, misleading or incomplete information or documentation by the Investment Manager.

11.27. **Limitation on account of COVID-19 and Significant Valuation Uncertainty in Valuation**

i. It is important to highlight that the COVID-19 pandemic has created significant uncertainty in valuation and accordingly, I would recommend a degree of caution to the values arrived under current circumstances as the same may change rapidly depending on the changing market scenario. For avoidance of doubt, the existence of significant uncertainty does not mean that valuation cannot be undertaken but it means existence of significant assumptions within the valuation approach and methodology which are based on factors whose outcome are uncertain and hence, results in lower certainty of the value determined in the valuation, than would otherwise be in this case.

ii. Further, this Report is necessarily based on financial, economic, monetary, market and other conditions as in effect on, and the information made available to me or used by me up to, the date hereof. Subsequent developments in the aforementioned conditions may

affect this Report and the assumptions made in preparing this Report and I shall not be obliged to update, revise or reaffirm this Report if information provided to me changes.

S. SUNDARARAMAN
IBBI / RV / 06 / 2018 / 10238
CHENNAI
REGISTERED VALUER

S. Sundararaman
Registered Valuer
IBBI Registration No.: IBBI/RV/06/2018/10238
Asset Class: Securities or Financial Assets
Place: Chennai
UDIN: 21028423AAAACZ9032

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Appendix 1 – Valuation of SPVs as on 31st January 2021

Abbreviations	Meaning
EBITDA	Operating Earnings Before Interest, Taxes, Depreciation and Amortization
MME	Actual Major Maintenance Expenses incurred during the year
Capex	Capital Expenditure
Wcap	Incremental Working Capital
FCFF	Free Cash Flow to the Firm
CAF	Cash Accrual Factor
DF	Discounting Factor
PVFCFF	Present value of Free Cash Flow to the Firm

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Appendix 1.1 – Valuation of DLSHL as on 31st January 2021 under the DCF Method

WACC	7.8%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Apr-21	886	630	(257)	404	81	858	-	(83)	-	(110)	666	0.28	0.98	652
Oct-21	788	616	(252)	317	81	762	-	(83)	-	(108)	572	0.78	0.94	539
Apr-22	786	602	(250)	326	81	760	-	(88)	-	(105)	567	1.28	0.91	515
Oct-22	784	588	(247)	336	81	758	-	(88)	-	(103)	567	1.78	0.87	496
Apr-23	784	573	(244)	346	81	756	-	(93)	-	(100)	563	2.28	0.84	475
Oct-23	782	465	(241)	357	81	662	-	-	-	(81)	581	2.78	0.81	471
Apr-24	781	442	(237)	367	81	654	-	-	-	(77)	577	3.28	0.78	451
Oct-24	779	425	(233)	378	81	652	-	-	-	(74)	578	3.78	0.75	435
Apr-25	778	482	(228)	390	-	644	-	-	-	(84)	560	4.28	0.72	406
Oct-25	776	463	(223)	402	-	642	-	-	-	(81)	561	4.78	0.70	392
Apr-26	774	436	(217)	414	-	633	-	-	-	(76)	557	5.28	0.67	374
Oct-26	772	415	(210)	426	-	631	-	-	-	(73)	558	5.78	0.65	361
Apr-27	771	385	(203)	439	-	621	-	-	-	(67)	554	6.28	0.62	345
Oct-27	769	362	(196)	453	-	619	-	-	-	(63)	556	6.78	0.60	334
Apr-28	767	329	(187)	466	-	608	-	-	-	(58)	551	7.28	0.58	319
Oct-28	765	304	(178)	481	-	607	-	-	-	(53)	554	7.78	0.56	308
Apr-29	763	268	(168)	495	-	595	-	-	-	(47)	549	8.28	0.54	294
Oct-29	761	240	(157)	510	-	593	-	-	-	(42)	551	8.78	0.52	285
Apr-30	758	201	(146)	525	-	580	-	-	-	(35)	545	9.28	0.50	271
Oct-30	755	171	(133)	541	-	578	-	-	-	(30)	548	9.78	0.48	263
Apr-31	753	128	(120)	557	-	564	-	-	-	(22)	542	10.28	0.46	250
Oct-31	743	94	(106)	566	-	554	-	-	-	(16)	539	10.78	0.44	239
Apr-32	723	48	(91)	566	-	523	-	-	-	(8)	515	11.28	0.43	221
Oct-32	729	13	(75)	591	-	529	-	-	-	(2)	527	11.79	0.41	217
Apr-33	744	29	(58)	627	-	598	-	-	-	(5)	593	12.28	0.40	235
Oct-33	728	(11)	(40)	632	-	582	-	-	-	-	582	12.79	0.38	222
Apr-34	706	(164)	(20)	632	-	448	-	-	-	-	448	13.28	0.37	165
Total of PV FCFF														**9,537**
Adjustments:														
Other Working Capital Adjustment														45
Present Value of Receivable from NHAI														356
Present Value of Payable to DBL														(359)
Enterprise Value														**9,579**

Appendix 1.2 – Valuation of DKZHL as on 31st January 2021 under the DCF Method

WACC	7.8%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Mar-21	396	353	(157)	260	29	484	-	(26)	-	(62)	397	0.25	0.98	389
Sep-21	385	342	(152)	139	29	359	-	(26)	-	(60)	273	0.76	0.94	258
Mar-22	381	339	(152)	143	29	358	-	(34)	-	(59)	265	1.25	0.91	241
Sep-22	377	334	(153)	148	29	357	-	(34)	-	(58)	265	1.76	0.88	232
Mar-23	372	329	(153)	152	29	357	-	(72)	-	(57)	227	2.25	0.84	192
Sep-23	367	324	(153)	156	29	356	-	(72)	-	(57)	227	2.76	0.81	185
Mar-24	362	318	(153)	161	29	355	-	(62)	-	(56)	238	3.25	0.78	186
Sep-24	356	250	(152)	166	29	293	-	-	-	(44)	249	3.76	0.75	188
Mar-25	349	254	(152)	171	29	302	-	-	-	(44)	258	4.25	0.73	187
Sep-25	342	275	(150)	176	-	301	-	-	-	(48)	253	4.76	0.70	177
Mar-26	335	248	(149)	182	-	281	-	-	-	(43)	238	5.25	0.67	160
Sep-26	327	239	(147)	187	-	280	-	-	-	(42)	238	5.76	0.65	154
Mar-27	318	138	(145)	193	-	186	-	-	-	(24)	162	6.25	0.62	101
Sep-27	309	128	(142)	199	-	185	-	-	-	(22)	162	6.76	0.60	98
Mar-28	299	218	(139)	205	-	284	-	-	-	(38)	246	7.26	0.58	142
Sep-28	288	206	(135)	211	-	282	-	-	-	(36)	246	7.76	0.56	137
Mar-29	276	190	(131)	217	-	276	-	-	-	(33)	243	8.26	0.54	131
Sep-29	264	177	(126)	224	-	275	-	-	-	(31)	244	8.76	0.52	126
Mar-30	251	141	(120)	231	-	252	-	-	-	(25)	227	9.26	0.50	113
Sep-30	237	126	(113)	238	-	250	-	-	-	(22)	228	9.76	0.48	109
Mar-31	221	49	(106)	245	-	187	-	-	-	(8)	179	10.26	0.46	83
Sep-31	205	32	(98)	252	-	185	-	-	-	(5)	180	10.76	0.45	80
Mar-32	188	78	(90)	259	-	248	-	-	-	(13)	235	11.26	0.43	101
Sep-32	169	59	(80)	264	-	243	-	-	-	(10)	233	11.76	0.41	96
Mar-33	149	34	(69)	264	-	229	-	-	-	(6)	223	12.26	0.40	89
Sep-33	129	13	(58)	276	-	231	-	-	-	(2)	229	12.76	0.38	88
Mar-34	107	(83)	(45)	292	-	163	-	-	-	-	163	13.26	0.37	60
Sep-34	83	(108)	(31)	295	-	155		-		-	155	13.76	0.36	55
Mar-35	58	(224)	(16)	295	-	55		-		-	55	14.26	0.34	19
Total of PV FCFF														**4,179**
Adjustments:														
Other Working Capital Adjustment														2
Present Value of Receivable from NHAI														214
Present Value of Payable to DBL														(192)
Enterprise Value														**4,204**

Appendix 1.3 – Valuation of DYWHPL as on 31st January 2021 under the DCF Method

WACC	7.8%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Jan-21	461	417	(198)	324	29	572	-	(45)	-	(73)	454	0.04	1.00	453
Jul-21	446	401	(188)	163	29	405	-	(96)	-	(70)	240	0.53	0.96	230
Jan-22	442	398	(190)	168	29	405	-	(96)	-	(69)	240	1.04	0.93	222
Jul-22	438	393	(192)	173	29	403	-	(73)	-	(69)	261	1.53	0.89	233
Jan-23	434	389	(194)	178	29	403	-	(73)	-	(68)	261	2.04	0.86	224
Jul-23	429	384	(195)	184	29	402	-	(98)	-	(67)	236	2.53	0.83	195
Jan-24	424	280	(196)	189	29	303	-	-	-	(49)	254	3.04	0.80	202
Jul-24	418	257	(196)	195	29	285	-	-	-	(45)	240	3.53	0.77	184
Jan-25	411	251	(196)	201	29	284	-	-	-	(44)	241	4.04	0.74	178
Jul-25	404	214	(196)	207	-	225	-	-	-	(37)	187	4.53	0.71	133
Jan-26	396	206	(195)	213	-	224	-	-	-	(36)	188	5.04	0.68	129
Jul-26	387	271	(194)	220	-	297	-	-	-	(47)	250	5.53	0.66	165
Jan-27	377	261	(192)	226	-	296	-	-	-	(46)	250	6.04	0.63	159
Jul-27	367	176	(189)	233	-	220	-	-	-	(31)	189	6.53	0.61	116
Jan-28	355	164	(185)	240	-	219	-	-	-	(29)	191	7.04	0.59	112
Jul-28	343	171	(181)	247	-	237	-	-	-	(30)	207	7.54	0.57	118
Jan-29	329	157	(175)	255	-	237	-	-	-	(27)	209	8.04	0.55	114
Jul-29	314	119	(169)	263	-	213	-	-	-	(21)	192	8.54	0.53	101
Jan-30	297	103	(162)	271	-	212	-	-	-	(18)	194	9.04	0.51	98
Jul-30	279	124	(153)	278	-	249	-	-	-	(22)	228	9.54	0.49	111
Jan-31	259	104	(143)	287	-	248	-	-	-	(18)	230	10.04	0.47	108
Jul-31	238	44	(131)	295	-	208	-	-	-	(7)	201	10.54	0.45	91
Jan-32	214	20	(118)	300	-	203	-	-	-	(3)	199	11.04	0.44	87
Jul-32	189	(122)	(103)	300	-	75	-	-	-	-	75	11.54	0.42	31
Jan-33	163	(148)	(87)	314	-	78	-	-	-	-	78	12.04	0.40	31
Jul-33	134	21	(69)	333	-	285	-	-	-	(4)	281	12.54	0.39	110
Jan-34	102	(11)	(48)	336	-	277	-	-	-	-	277	13.04	0.37	104
Jul-34	67	(137)	(25)	336	-	174		-		-	174	13.54	0.36	63
Total of PV FCFF														**4,102**
Adjustments:														
Other Working Capital Adjustment														33
Present Value of Receivable from NHAI														383
Present Value of Payable to DBL														(355)
Present Value of Payable to Related Party														(285)
Present Value of Advance from DBL														285
Enterprise Value														**4,163**

Appendix 1.4 – Valuation of DTAHL as on 31st January 2021 under the DCF Method

WACC	7.9%													INR Mn
Year	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
May-21	357	317	(143)	126	27	327	-	(34)	-	(55)	238	0.33	0.98	232
Nov-21	354	314	(144)	130	27	326	-	(67)	-	(55)	205	0.83	0.94	192
May-22	350	310	(145)	134	27	326	-	(67)	-	(54)	205	1.33	0.90	185
Nov-22	347	306	(146)	138	27	325	-	(68)	-	(53)	204	1.83	0.87	177
May-23	342	301	(146)	142	27	324	-	(68)	-	(53)	203	2.33	0.84	170
Nov-23	338	297	(147)	147	27	324	-	(86)	-	(52)	186	2.83	0.81	150
May-24	333	206	(147)	151	27	237	-	-	-	(36)	201	3.33	0.78	156
Nov-24	328	207	(146)	156	27	243	-	-	-	(36)	207	3.84	0.75	155
May-25	322	228	(146)	160	-	242	-	-	-	(40)	202	4.33	0.72	146
Nov-25	315	177	(145)	165	-	198	-	-	-	(31)	167	4.84	0.69	116
May-26	308	169	(143)	171	-	197	-	-	-	(30)	167	5.33	0.67	112
Nov-26	301	150	(142)	176	-	184	-	-	-	(26)	158	5.84	0.64	101
May-27	293	141	(139)	181	-	183	-	-	-	(25)	158	6.33	0.62	98
Nov-27	284	179	(137)	186	-	228	-	-	-	(31)	197	6.84	0.60	117
May-28	274	168	(133)	192	-	227	-	-	-	(29)	198	7.33	0.57	113
Nov-28	264	166	(130)	198	-	234	-	-	-	(29)	205	7.84	0.55	113
May-29	253	155	(125)	204	-	233	-	-	-	(27)	206	8.33	0.53	110
Nov-29	241	61	(120)	210	-	151	-	-	-	(10)	141	8.84	0.51	72
May-30	227	47	(114)	216	-	149	-	-	-	(8)	141	9.33	0.49	70
Nov-30	213	76	(107)	222	-	191	-	-	-	(13)	178	9.84	0.47	85
May-31	198	60	(99)	229	-	190	-	-	-	(10)	180	10.33	0.46	82
Nov-31	182	34	(91)	236	-	179	-	-	-	(6)	174	10.84	0.44	76
May-32	164	16	(81)	240	-	175	-	-	-	(3)	172	11.34	0.42	73
Nov-32	145	(1)	(71)	240	-	169	-	-	-	-	169	11.84	0.41	69
May-33	126	(21)	(59)	251	-	171	-	-	-	-	171	12.34	0.39	67
Nov-33	105	(42)	(47)	266	-	177	-	-	-	-	177	12.84	0.38	67
May-34	81	(66)	(32)	268	-	170	-	-	-	-	170	13.34	0.36	62
Nov-34	57	(92)	(17)	268	-	160		-		-	160	13.84	0.35	56
Total of PV FCFF														**3,223**
Adjustments:														
Other Working Capital Adjustment														42
Present Value of Receivable from NHAI														224
Present Value of Advance to related party														62
Present Value of Receivable from related party														(220)
Present Value of Advance from DBL														190
Enterprise Value														**3,523**

Appendix 1.5 – Valuation of DWBHL as on 31st January 2021 under the DCF Method

WACC	7.8%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
May-21	456	408	(190)	271	32	522	-	(34)	-	(71)	416	0.33	0.98	406
Nov-21	445	397	(185)	165	32	410	-	(78)	-	(69)	263	0.84	0.94	247
May-22	441	393	(186)	170	32	409	-	(78)	-	(69)	263	1.33	0.90	237
Nov-22	436	388	(187)	175	32	409	-	(61)	-	(68)	280	1.84	0.87	244
May-23	431	382	(188)	180	32	407	-	(61)	-	(67)	279	2.33	0.84	234
Nov-23	425	376	(188)	186	32	407	-	(73)	-	(66)	268	2.84	0.81	216
May-24	419	297	(188)	192	32	332	-	-	-	(52)	281	3.34	0.78	218
Nov-24	412	264	(188)	198	32	306	-	-	-	(46)	260	3.84	0.75	195
May-25	405	289	(187)	203	-	305	-	-	-	(50)	254	4.34	0.72	183
Nov-25	397	206	(186)	210	-	229	-	-	-	(36)	193	4.84	0.69	134
May-26	388	196	(185)	216	-	228	-	-	-	(34)	193	5.34	0.67	129
Nov-26	379	273	(183)	223	-	313	-	-	-	(48)	266	5.84	0.64	171
May-27	368	262	(180)	229	-	311	-	-	-	(46)	266	6.34	0.62	165
Nov-27	357	180	(177)	236	-	240	-	-	-	(32)	209	6.84	0.60	125
May-28	345	167	(172)	243	-	239	-	-	-	(29)	209	7.34	0.58	120
Nov-28	331	192	(168)	251	-	275	-	-	-	(34)	242	7.84	0.55	134
May-29	317	177	(162)	258	-	274	-	-	-	(31)	243	8.34	0.53	130
Nov-29	302	116	(155)	266	-	227	-	-	-	(20)	206	8.84	0.51	106
May-30	285	98	(148)	274	-	225	-	-	-	(16)	208	9.34	0.49	103
Nov-30	267	120	(139)	282	-	263	-	-	-	(21)	242	9.84	0.48	115
May-31	247	100	(129)	291	-	261	-	-	-	(17)	245	10.34	0.46	112
Nov-31	226	39	(118)	299	-	220	-	-	-	(6)	213	10.84	0.44	94
May-32	203	15	(106)	304	-	214	-	-	-	(3)	211	11.34	0.43	90
Nov-32	179	(139)	(92)	304	-	73	-	-	-	-	73	11.85	0.41	30
May-33	154	(165)	(78)	318	-	76	-	-	-	-	76	12.34	0.39	30
Nov-33	127	26	(61)	337	-	302	-	-	-	(4)	297	12.85	0.38	113
May-34	96	(6)	(42)	340	-	292	-	-	-	-	292	13.34	0.37	107
Nov-34	64	(116)	(22)	340	-	202		-		-	202	13.85	0.35	71
Total of PV FCFF														**4,262**
Adjustments:														
Other Working Capital Adjustment														47
Present Value of Receivable from NHAI														353
Present Value of Payable to DBL														(382)
Enterprise Value														**4,280**

Appendix 1.6 – Valuation of DMYHL as on 31st January 2021 under the DCF Method

WACC	7.8%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
May-21	486	433	(196)	199	36	473	-	(44)	-	(76)	353	0.34	0.97	344
Nov-21	480	427	(195)	172	36	440	-	(44)	-	(75)	321	0.84	0.94	302
May-22	476	423	(197)	177	36	439	-	(105)	-	(74)	261	1.34	0.90	236
Nov-22	471	418	(198)	183	36	439	-	(105)	-	(73)	261	1.84	0.87	227
May-23	466	412	(199)	188	36	437	-	(76)	-	(72)	290	2.34	0.84	243
Nov-23	460	407	(200)	194	36	436	-	(76)	-	(71)	290	2.84	0.81	234
May-24	454	400	(200)	200	36	435	-	(103)	-	(70)	262	3.34	0.78	204
Nov-24	447	289	(200)	206	36	331	-	-	-	(51)	280	3.84	0.75	210
May-25	440	265	(200)	212	36	313	-	-	-	(46)	267	4.34	0.72	192
Nov-25	431	293	(199)	218	-	312	-	-	-	(51)	261	4.84	0.69	181
May-26	423	217	(198)	225	-	243	-	-	-	(38)	206	5.34	0.67	138
Nov-26	413	207	(196)	232	-	243	-	-	-	(36)	206	5.84	0.64	133
May-27	403	283	(194)	239	-	328	-	-	-	(49)	278	6.34	0.62	173
Nov-27	392	271	(191)	246	-	326	-	-	-	(47)	279	6.84	0.60	167
May-28	379	168	(187)	253	-	235	-	-	-	(29)	205	7.34	0.58	118
Nov-28	366	155	(183)	261	-	233	-	-	-	(27)	206	7.85	0.55	114
May-29	352	167	(178)	269	-	259	-	-	-	(29)	229	8.34	0.53	122
Nov-29	337	152	(171)	277	-	258	-	-	-	(27)	231	8.85	0.51	119
May-30	320	115	(164)	286	-	237	-	-	-	(20)	217	9.34	0.50	107
Nov-30	302	97	(156)	294	-	235	-	-	-	(16)	219	9.85	0.48	104
May-31	283	123	(147)	303	-	278	-	-	-	(21)	257	10.34	0.46	118
Nov-31	262	102	(136)	312	-	277	-	-	-	(18)	259	10.85	0.44	115
May-32	239	40	(125)	321	-	237	-	-	-	(7)	230	11.35	0.43	98
Nov-32	215	16	(112)	326	-	231	-	-	-	(3)	228	11.85	0.41	94
May-33	189	(150)	(97)	326	-	79	-	-	-	-	79	12.35	0.39	31
Nov-33	163	(177)	(82)	341	-	83	-	-	-	-	83	12.85	0.38	31
May-34	133	15	(64)	362	-	312	-	-	-	(2)	310	13.35	0.37	113
Nov-34	101	(17)	(44)	365	-	303		-		-	303	13.85	0.35	107
May-35	67	(147)	(23)	365	-	195		-		-	195	14.35	0.34	66
Total of PV FCFF														**4,441**
Adjustments:														
Other Working Capital Adjustment														(3)
Present Value of Receivable from NHAI														245
Present Value of Payable to DBL														(380)
Present Value of Receivable from related party														468
Enterprise Value														**4,772**

Appendix 1.7 – Valuation of DAVTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Jan-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul-21	36	29	(25)	50	1	54	-	(2)	-	(4)	48	0.52	0.96	46
Jan-22	34	27	(24)	50	1	54	-	(2)	-	(4)	48	1.03	0.92	44
Jul-22	34	26	(22)	50	1	55	-	(2)	-	(4)	49	1.52	0.89	43
Jan-23	32	24	(21)	50	1	55	-	(2)	-	(3)	49	2.03	0.85	41
Jul-23	31	23	(19)	50	1	55	-	(2)	-	(3)	49	2.52	0.82	40
Jan-24	29	21	(18)	50	1	55	-	(2)	-	(3)	49	3.03	0.79	39
Jul-24	28	20	(16)	50	1	55	-	(2)	-	(3)	50	3.53	0.75	38
Jan-25	26	18	(14)	50	1	55	-	(2)	-	(2)	50	4.03	0.72	36
Jul-25	25	17	(12)	50	-	56	-	(2)	-	(2)	51	4.53	0.70	35
Jan-26	23	15	(10)	50	-	56	-	(2)	-	(2)	51	5.03	0.67	34
Jul-26	22	12	(7)	50	-	55	-	(2)	-	(1)	52	5.53	0.64	33
Jan-27	19	10	(5)	50	-	55	-	(5)	-	(1)	49	6.03	0.62	31
Jul-27	12	(6)	(3)	50	-	42	-	-	-	-	42	6.53	0.59	25
Total of PV FCFF														**486**
Adjustments:														
Other Working Capital Adjustment														5
Enterprise Value														**491**

Appendix 1.8 – Valuation of DBSTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
May-21	125	101	(97)	155	0	160	-	(8)	-	(10)	143	0.32	0.97	139
Nov-21	135	112	(93)	155	0	174	-	(8)	-	(11)	155	0.82	0.94	145
May-22	134	108	(89)	155	0	175	-	(8)	-	(11)	156	1.32	0.90	141
Nov-22	129	104	(84)	155	0	175	-	(8)	-	(10)	157	1.82	0.86	136
May-23	127	100	(79)	155	0	176	-	(8)	-	(9)	159	2.32	0.83	132
Nov-23	122	95	(74)	155	0	176	-	(8)	-	(9)	160	2.82	0.80	127
May-24	119	90	(69)	155	0	177	-	(8)	-	(8)	161	3.32	0.77	124
Nov-24	114	85	(63)	155	0	177	-	(8)	-	(7)	162	3.82	0.74	120
May-25	110	81	(57)	155	-	179	-	(8)	-	(6)	165	4.32	0.71	117
Nov-25	104	74	(50)	155	-	179	-	(8)	-	(5)	166	4.82	0.68	113
May-26	100	67	(43)	155	-	179	-	(8)	-	(4)	167	5.32	0.65	110
Nov-26	92	60	(36)	155	-	179	-	(8)	-	(3)	169	5.82	0.63	106
May-27	88	53	(28)	155	-	180	-	(8)	-	(2)	171	6.32	0.60	103
Nov-27	79	44	(19)	155	-	180	-	(15)	-	(0)	165	6.82	0.58	96
May-28	24	(25)	(10)	155	-	120	-	-	-	-	120	7.32	0.56	67
Total of PV FCFF														**1,776**
Adjustments:														
Other Working Capital Adjustment														14
Present Value of Payable to DBL														(88)
Present Value of Receivable from NHAI														55
Enterprise Value														**1,757**

Appendix 1.9 – Valuation of DHDTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	57	41	(55)	70	1	58	-	(3)	-	(6)	48	0.13	0.99	48
Sep-21	61	47	(53)	70	1	65	-	(3)	-	(7)	55	0.64	0.95	52
Mar-22	59	46	(52)	70	1	65	-	(3)	-	(7)	55	1.13	0.91	50
Sep-22	58	44	(50)	70	1	65	-	(3)	-	(7)	55	1.64	0.88	48
Mar-23	57	42	(49)	70	1	65	-	(3)	-	(6)	55	2.13	0.84	46
Sep-23	55	40	(47)	70	1	64	-	(3)	-	(6)	55	2.64	0.81	45
Mar-24	53	38	(45)	70	1	64	-	(3)	-	(6)	55	3.14	0.78	43
Sep-24	52	36	(43)	70	1	64	-	(3)	-	(5)	55	3.64	0.75	41
Mar-25	50	35	(41)	70	-	64	-	(3)	-	(5)	55	4.14	0.72	40
Sep-25	48	32	(38)	70	-	64	-	(3)	-	(5)	56	4.64	0.69	39
Mar-26	45	30	(36)	70	-	64	-	(3)	-	(4)	57	5.14	0.66	37
Sep-26	43	26	(33)	70	-	63	-	(3)	-	(4)	56	5.64	0.64	36
Mar-27	40	23	(30)	70	-	63	-	(3)	-	(3)	57	6.14	0.61	35
Sep-27	37	19	(27)	70	-	63	-	(3)	-	(2)	57	6.64	0.59	33
Mar-28	33	15	(23)	70	-	63	-	(3)	-	(2)	57	7.14	0.56	32
Sep-28	30	16	(19)	70	-	67	-	(3)	-	(2)	62	7.64	0.54	34
Mar-29	26	12	(15)	70	-	67	-	(3)	-	(1)	63	8.14	0.52	33
Sep-29	21	(7)	(10)	70	-	53	-	(3)	-	-	50	8.64	0.50	25
Mar-30	16	(11)	(5)	70	-	53	-	-	-	-	53	9.14	0.48	26
Total of PV FCFF														**743**
Adjustments:														
Other Working Capital Adjustment														5
Enterprise Value														**748**

Appendix 1.10 – Valuation of DSSTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	61	43	(55)	95	1	83	-	(7)	-	(7)	69	0.19	0.99	68
Sep-21	71	59	(52)	95	1	102	-	(7)	-	(9)	86	0.69	0.95	81
Mar-22	67	55	(48)	95	1	102	-	(7)	-	(9)	86	1.19	0.91	79
Sep-22	65	51	(45)	95	1	102	-	(7)	-	(8)	87	1.69	0.87	76
Mar-23	60	47	(40)	95	1	102	-	(7)	-	(7)	88	2.19	0.84	74
Sep-23	57	43	(36)	95	1	103	-	(7)	-	(7)	89	2.69	0.81	72
Mar-24	52	38	(31)	95	1	103	-	(7)	-	(6)	89	3.19	0.78	69
Sep-24	48	33	(26)	95	1	103	-	(7)	-	(5)	90	3.69	0.75	67
Mar-25	43	28	(20)	95	-	103	-	(7)	-	(4)	91	4.19	0.72	65
Sep-25	37	22	(14)	95	-	103	-	(7)	-	(3)	93	4.69	0.69	64
Mar-26	31	16	(7)	95	-	103	-	-	-	(1)	102	5.19	0.66	68
Total of PV FCFF														**784**
Adjustments:														
Other Working Capital Adjustment														7
Enterprise Value														**791**

Appendix 1.11 – Valuation of Sitamau as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	33	15	(19)	37	0	33	-	(3)	-	(1)	29	0.19	0.98	28
Sep-21	32	27	(18)	37	0	46	-	(3)	-	(3)	40	0.70	0.95	38
Mar-22	31	26	(16)	37	0	46	-	(3)	-	(3)	40	1.19	0.91	36
Sep-22	31	25	(15)	37	0	47	-	(3)	-	(3)	41	1.70	0.87	35
Mar-23	29	23	(14)	37	0	47	-	(3)	-	(3)	41	2.19	0.84	34
Sep-23	29	22	(12)	37	0	47	-	(3)	-	(2)	41	2.70	0.81	33
Mar-24	27	20	(10)	37	0	47	-	(3)	-	(2)	42	3.20	0.77	32
Sep-24	26	19	(8)	37	0	48	-	(3)	-	(2)	42	3.70	0.74	32
Mar-25	24	17	(7)	37	-	48	-	(3)	-	(2)	43	4.20	0.71	30
Sep-25	23	16	(5)	37	-	48	-	(3)	-	(1)	44	4.70	0.69	30
Mar-26	21	14	(2)	37	-	48	-	-	-	-	48	5.20	0.66	32
Total of PV FCFF														**361**
Adjustments:														
Other Working Capital Adjustment														2
Enterprise Value														**363**

Appendix 1.12 – Valuation of DMSTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
May-21	56	44	(43)	83	1	84	-	(5)	-	(6)	73	0.33	0.97	71
Nov-21	59	47	(41)	83	1	90	-	(5)	-	(6)	79	0.83	0.94	74
May-22	58	45	(38)	83	1	90	-	(5)	-	(6)	79	1.33	0.90	71
Nov-22	54	42	(35)	83	1	90	-	(5)	-	(5)	80	1.83	0.86	69
May-23	52	38	(31)	83	1	91	-	(5)	-	(5)	80	2.33	0.83	67
Nov-23	49	35	(28)	83	1	91	-	(5)	-	(4)	81	2.83	0.80	65
May-24	46	31	(24)	83	1	91	-	(5)	-	(4)	82	3.33	0.77	63
Nov-24	42	28	(20)	83	-	91	-	(5)	-	(3)	82	3.83	0.74	61
May-25	39	24	(15)	83	-	92	-	(5)	-	(2)	84	4.33	0.71	59
Nov-25	34	20	(10)	83	-	92	-	(11)	-	(2)	79	4.83	0.68	54
May-26	12	(19)	(5)	83	-	58	-	-	-	-	58	5.33	0.65	38
Total of PV FCFF														**691**
Adjustments:														
Other Working Capital Adjustment														12
Enterprise Value														**703**

Appendix 1.13 – Valuation of DUNTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
May-21	69	58	(54)	85	1	90	-	(4)	-	(9)	77	0.33	0.97	75
Nov-21	74	63	(51)	85	1	98	-	(4)	-	(10)	84	0.83	0.94	78
May-22	73	61	(49)	85	1	98	-	(4)	-	(10)	85	1.33	0.90	76
Nov-22	70	58	(46)	85	1	98	-	(4)	-	(9)	85	1.83	0.86	74
May-23	69	56	(43)	85	1	99	-	(4)	-	(9)	86	2.33	0.83	72
Nov-23	65	52	(39)	85	1	99	-	(4)	-	(8)	87	2.83	0.80	69
May-24	63	49	(36)	85	1	99	-	(4)	-	(8)	88	3.33	0.77	68
Nov-24	59	46	(32)	85	-	99	-	(4)	-	(7)	89	3.83	0.74	65
May-25	56	44	(27)	85	-	101	-	(4)	-	(7)	90	4.33	0.71	64
Nov-25	52	39	(23)	85	-	101	-	(4)	-	(6)	91	4.83	0.68	62
May-26	49	34	(18)	85	-	101	-	(4)	-	(5)	92	5.33	0.65	60
Nov-26	43	29	(12)	85	-	101	-	(8)	-	(4)	89	5.83	0.63	56
May-27	14	(1)	(6)	85	-	78	-	-	-	-	78	6.33	0.60	47
Total of PV FCFF														**866**
Adjustments:														
Other Working Capital Adjustment														6
Enterprise Value														**873**

Appendix 1.14 – Valuation of DSBTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Jun-21	24	17	(15)	47	0	49	-	(4)	-	(2)	43	0.39	0.97	42
Dec-21	24	18	(14)	47	0	51	-	(4)	-	(2)	45	0.90	0.93	42
Jun-22	23	16	(12)	47	0	51	-	(4)	-	(2)	45	1.39	0.89	41
Dec-22	22	15	(11)	47	0	51	-	(4)	-	(1)	46	1.90	0.86	39
Jun-23	21	13	(9)	47	0	51	-	(4)	-	(1)	46	2.39	0.83	38
Dec-23	19	11	(8)	47	0	51	-	(4)	-	(1)	46	2.90	0.79	37
Jun-24	18	10	(6)	47	0	51	-	(4)	-	(1)	46	3.40	0.76	35
Dec-24	16	8	(4)	47	-	51	-	(8)	-	(0)	43	3.90	0.73	31
Jun-25	7	(9)	(2)	47	-	36	-	-	-	-	36	4.40	0.70	26
Total of PV FCFF														**330**
Adjustments:														
Other Working Capital Adjustment														8
Enterprise Value														**338**

Appendix 1.15 – Valuation of DPRTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Mar-21	150	127	(142)	176	2	163	-	(5)	-	(18)	140	0.20	0.98	138
Sep-21	164	145	(138)	176	2	184	-	(5)	-	(22)	158	0.70	0.95	149
Mar-22	161	141	(135)	176	2	184	-	(5)	-	(21)	159	1.20	0.91	144
Sep-22	159	138	(131)	176	2	185	-	(5)	-	(20)	160	1.70	0.87	139
Mar-23	155	134	(127)	176	2	185	-	(5)	-	(20)	160	2.20	0.84	135
Sep-23	152	130	(123)	176	2	185	-	(5)	-	(19)	161	2.70	0.81	130
Mar-24	147	125	(118)	176	2	185	-	(5)	-	(18)	162	3.20	0.78	126
Sep-24	144	120	(113)	176	2	186	-	(5)	-	(17)	164	3.71	0.74	122
Mar-25	138	117	(107)	176	-	186	-	(5)	-	(16)	165	4.20	0.72	118
Sep-25	134	112	(101)	176	-	187	-	(5)	-	(15)	167	4.71	0.69	115
Mar-26	127	105	(95)	176	-	187	-	(5)	-	(14)	168	5.20	0.66	111
Sep-26	122	98	(87)	176	-	187	-	(5)	-	(13)	169	5.71	0.64	107
Mar-27	114	90	(79)	176	-	187	-	(5)	-	(12)	170	6.20	0.61	104
Sep-27	107	81	(71)	176	-	187	-	(5)	-	(10)	172	6.71	0.59	101
Mar-28	98	72	(61)	176	-	187	-	(5)	-	(9)	174	7.21	0.56	98
Sep-28	90	70	(51)	176	-	195	-	(5)	-	(8)	182	7.71	0.54	99
Mar-29	79	58	(40)	176	-	195	-	(5)	-	(6)	184	8.21	0.52	96
Sep-29	69	30	(28)	176	-	179	-	(5)	-	(2)	172	8.71	0.50	86
Mar-30	55	17	(14)	176	-	179	-	-	-	-	179	9.21	0.48	86
Total of PV FCFF														**2,205**
Adjustments:														
Other Working Capital Adjustment														10
Enterprise Value														**2,215**

Appendix 1.16 – Valuation of DTNTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
May-21	71	56	(57)	89	1	89	-	(5)	-	(9)	76	0.36	0.97	74
Nov-21	76	61	(55)	89	1	97	-	(5)	-	(9)	83	0.86	0.93	77
May-22	75	59	(52)	89	1	97	-	(5)	-	(9)	83	1.36	0.90	75
Nov-22	72	56	(50)	89	1	97	-	(5)	-	(9)	84	1.86	0.86	72
May-23	71	54	(47)	89	1	97	-	(5)	-	(8)	84	2.36	0.83	70
Nov-23	68	51	(44)	89	1	97	-	(5)	-	(8)	85	2.86	0.80	67
May-24	66	48	(41)	89	1	97	-	(5)	-	(7)	85	3.36	0.77	65
Nov-24	63	46	(37)	89	-	97	-	(5)	-	(7)	86	3.86	0.73	63
May-25	61	43	(34)	89	-	98	-	(5)	-	(6)	87	4.36	0.71	62
Nov-25	57	39	(30)	89	-	98	-	(5)	-	(6)	88	4.86	0.68	60
May-26	55	35	(26)	89	-	98	-	(5)	-	(5)	89	5.36	0.65	58
Nov-26	50	30	(21)	89	-	98	-	(5)	-	(4)	89	5.86	0.63	56
May-27	47	26	(16)	89	-	98	-	(5)	-	(3)	90	6.36	0.60	54
Nov-27	42	21	(11)	89	-	98	-	(9)	-	(3)	87	6.86	0.58	50
May-28	16	(14)	(6)	89	-	69	-	-	-	-	69	7.36	0.56	38
Total of PV FCFF														**942**
Adjustments:														
Other Working Capital Adjustment														21
Enterprise Value														**963**

Appendix 1.17 – Valuation of DNMTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Jan-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul-21	96	77	(96)	175	1	156	-	(9)	-	(13)	135	0.46	0.96	130
Jan-22	90	71	(90)	175	1	156	-	(9)	-	(12)	136	0.96	0.93	126
Jul-22	84	63	(84)	175	1	155	-	(9)	-	(11)	136	1.46	0.89	121
Jan-23	77	56	(77)	175	1	155	-	(9)	-	(9)	137	1.96	0.85	117
Jul-23	70	48	(70)	175	1	153	-	(9)	-	(8)	137	2.46	0.82	112
Jan-24	62	40	(62)	175	1	153	-	(9)	-	(7)	138	2.96	0.79	109
Jul-24	53	29	(53)	175	1	152	-	(9)	-	(5)	138	3.46	0.76	105
Jan-25	44	21	(44)	175	-	152	-	(9)	-	(4)	140	3.97	0.73	102
Jul-25	34	11	(34)	175	-	151	-	(9)	-	(2)	141	4.46	0.70	98
Jan-26	24	0	(24)	175	-	151	-	(18)	-	(0)	134	4.97	0.67	90
Jul-26	12	(29)	(12)	175	-	134	-	-	-	-	134	5.46	0.65	86
Total of PV FCFF														**1,196**
Adjustments:														
Other Working Capital Adjustment														12
Enterprise Value														**1,208**

Appendix 1.18 – Valuation of DBDTL as on 31st January 2021 under the DCF Method

WACC	8.4%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	65	49	(65)	99	1	84	-	(5)	-	(8)	70	0.20	0.98	69
Sep-21	62	50	(62)	99	1	88	-	(5)	-	(8)	74	0.70	0.94	70
Mar-22	59	47	(59)	99	1	88	-	(5)	-	(8)	75	1.20	0.91	68
Sep-22	55	43	(55)	99	1	87	-	(5)	-	(7)	75	1.70	0.87	65
Mar-23	52	39	(52)	99	1	87	-	(5)	-	(7)	75	2.20	0.84	63
Sep-23	48	34	(48)	99	1	86	-	(5)	-	(6)	75	2.70	0.80	61
Mar-24	43	30	(43)	99	1	86	-	(5)	-	(5)	76	3.20	0.77	59
Sep-24	38	24	(38)	99	1	85	-	(5)	-	(4)	76	3.71	0.74	56
Mar-25	33	20	(33)	99	-	85	-	(5)	-	(3)	77	4.20	0.71	55
Sep-25	28	14	(28)	99	-	85	-	(5)	-	(2)	77	4.71	0.68	53
Mar-26	22	8	(22)	99	-	85	-	(5)	-	(1)	78	5.20	0.66	52
Sep-26	15	(1)	(15)	99	-	83	-	(5)	-	-	78	5.71	0.63	49
Mar-27	8	(8)	(8)	99	-	83	-	-	-	-	83	6.20	0.61	51
Total of PV FCFF														**771**
Adjustments:														
Other Working Capital Adjustment														7
Enterprise Value														**778**

Appendix 1.19– Valuation of DJSTL as on 31st January 2021 under the DCF Method

WACC	8.4%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
May-21	82	65	(82)	121	1	105	-	(6)	-	(11)	88	0.31	0.98	86
Nov-21	78	61	(78)	121	1	105	-	(6)	-	(10)	89	0.81	0.94	83
May-22	74	56	(74)	121	1	104	-	(6)	-	(9)	89	1.31	0.90	80
Nov-22	70	52	(70)	121	1	104	-	(6)	-	(9)	89	1.81	0.86	77
May-23	65	46	(65)	121	1	103	-	(6)	-	(8)	89	2.31	0.83	74
Nov-23	60	41	(60)	121	1	103	-	(6)	-	(7)	90	2.81	0.80	72
May-24	55	34	(55)	121	1	101	-	(6)	-	(6)	90	3.31	0.77	69
Nov-24	49	30	(49)	121	-	101	-	(6)	-	(5)	90	3.82	0.74	66
May-25	42	23	(42)	121	-	101	-	(6)	-	(4)	91	4.31	0.71	64
Nov-25	35	16	(35)	121	-	101	-	(6)	-	(3)	92	4.82	0.68	63
May-26	28	6	(28)	121	-	99	-	(6)	-	(1)	92	5.31	0.65	60
Nov-26	19	(3)	(19)	121	-	99	-	(12)	-	-	87	5.82	0.63	54
May-27	10	(35)	(10)	121	-	76	-	-	-	-	76	6.31	0.60	46
Total of PV FCFF														**893**
Adjustments:														
Other Working Capital Adjustment														11
Enterprise Value														**905**

Appendix 1.20 – Valuation of DMHTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	Revenue	EBITDA	Financial Income	Annuity Receipt	Non Cash Expenses	Cash EBITDA	MMR	O&M Liability	Capex	Tax	FCFF	CAF	DF	PVFCFF
Mar-21	157	127	(157)	177	6	153	-	-	-	(22)	131	0.19	0.98	129
Sep-21	153	122	(153)	177	6	152	-	-	-	(21)	131	0.70	0.95	124
Mar-22	148	118	(148)	177	6	152	-	-	-	(21)	132	1.19	0.91	120
Sep-22	143	111	(143)	177	6	151	-	-	-	(19)	132	1.70	0.87	115
Mar-23	136	104	(136)	177	6	151	-	-	-	(18)	133	2.19	0.84	112
Sep-23	128	94	(128)	177	6	150	(90)	-	-	(1)	60	2.70	0.81	48
Mar-24	118	84	(118)	177	6	150	(90)	-	-	-	60	3.20	0.77	47
Sep-24	106	71	(106)	177	6	149	(94)	-	-	-	55	3.70	0.74	41
Mar-25	92	63	(92)	177	-	149	(94)	-	-	-	55	4.20	0.71	39
Sep-25	74	45	(74)	177	-	148	-	-	-	(7)	140	4.70	0.69	96
Mar-26	54	24	(54)	177	-	148	-	-	-	(4)	144	5.20	0.66	95
Sep-26	29	4	(29)	177	-	152	-	-	-	(1)	151	5.70	0.63	96
Total of PV FCFF														**1,061**
Adjustments:														
Other Working Capital Adjustment														(1)
Enterprise Value														**1,060**

Appendix 1.21 – Valuation of DHPTL as on 31st January 2021 under the DCF Method

WACC	8.3%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	222	175	(222)	263	11	227	-	-	-	(31)	196	0.19	0.98	193
Sep-21	215	166	(215)	263	11	225	-	-	-	(29)	196	0.70	0.95	185
Mar-22	207	158	(207)	263	11	225	-	-	-	(28)	197	1.19	0.91	179
Sep-22	198	147	(198)	263	11	223	-	-	-	(26)	198	1.70	0.87	172
Mar-23	187	136	(187)	263	11	223	-	-	-	(24)	200	2.19	0.84	167
Sep-23	174	122	(174)	263	11	221	(98)	-	-	(4)	119	2.70	0.81	96
Mar-24	159	107	(159)	263	11	221	(98)	-	-	(1)	122	3.20	0.77	94
Sep-24	142	88	(142)	263	11	220	(103)	-	-	-	117	3.70	0.74	87
Mar-25	122	79	(122)	263	-	220	(103)	-	-	-	117	4.20	0.71	83
Sep-25	98	53	(98)	263	-	218	-	-	-	(9)	209	4.70	0.69	143
Mar-26	70	25	(70)	263	-	218	-	-	-	(4)	214	5.20	0.66	141
Sep-26	38	2	(38)	263	-	227	-	-	-	(0)	227	5.70	0.63	144
Total of PV FCFF														**1,686**
Adjustments:														
Other Working Capital Adjustment														23
Present Value of Payable to DBL														(22)
Present Value of Receivable from Authority														62
Enterprise Value														**1,749**

Appendix 1.22 – Valuation of DHRTL as on 31st January 2021 under the DCF Method

WACC	8.4%													INR Mn
Annuity Period Ended	**Revenue**	**EBITDA**	**Financial Income**	**Annuity Receipt**	**Non Cash Expenses**	**Cash EBITDA**	**MMR**	**O&M Liability**	**Capex**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
Mar-21	171	137	(171)	196	9	170	-	-	-	(24)	146	0.19	0.98	144
Sep-21	167	131	(167)	196	9	169	-	-	-	(23)	146	0.70	0.95	138
Mar-22	161	125	(161)	196	9	169	-	-	-	(22)	147	1.19	0.91	133
Sep-22	155	117	(155)	196	9	168	-	-	-	(21)	147	1.70	0.87	128
Mar-23	147	110	(147)	196	9	168	-	-	-	(19)	148	2.19	0.84	124
Sep-23	138	99	(138)	196	9	166	(95)	-	-	(1)	71	2.70	0.81	57
Mar-24	126	88	(126)	196	9	166	(95)	-	-	-	71	3.20	0.77	55
Sep-24	113	74	(113)	196	9	165	(100)	-	-	-	65	3.70	0.74	48
Mar-25	98	67	(98)	196	-	165	(100)	-	-	-	65	4.20	0.71	47
Sep-25	79	47	(79)	196	-	163	-	-	-	(8)	156	4.70	0.69	107
Mar-26	57	25	(57)	196	-	163	-	-	-	(4)	159	5.20	0.66	105
Sep-26	31	2	(31)	196	-	167	-	-	-	(0)	167	5.70	0.63	106
Total of PV FCFF														**1,193**
Adjustments:														
Other Working Capital Adjustment														1
Present Value of Payable to DBL														(80)
Present Value of Receivable from Authority														144
Enterprise Value														**1,257**

Appendix 1.23 – Valuation of JDTL as on 31st January 2021 under the DCF Method

WACC	9.8%									INR Mn
Year	**Revenue**	**EBITDA**	**MMR**	**Capex**	**Wcap**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
FY21*	226	81	-	-	55	(18)	118	0.08	0.99	117
FY22	1,418	1,210	-	-	84	(155)	1,139	0.66	0.94	1,071
FY23	1,568	1,378	-	-	84	(185)	1,278	1.66	0.86	1,095
FY24	1,690	1,494	(503)	-	84	(117)	958	2.67	0.78	747
FY25	1,847	1,636	-	-	63	(230)	1,469	3.67	0.71	1,044
FY26	2,016	1,859	-	-	-	(269)	1,590	4.67	0.65	1,029
FY27	2,200	2,064	-	-	-	(305)	1,759	5.67	0.59	1,038
FY28	2,413	2,268	-	-	-	(340)	1,928	6.67	0.54	1,036
FY29	2,660	2,470	-	-	-	(375)	2,094	7.67	0.49	1,025
FY30	2,912	2,709	(1,349)	-	-	(182)	1,179	8.67	0.45	526
FY31	3,166	2,989	-	-	-	(517)	2,472	9.67	0.41	1,004
FY32	3,480	3,290	-	-	-	(748)	2,542	10.67	0.37	941
FY33	3,803	3,558	-	-	-	(815)	2,742	11.67	0.34	925
FY34	4,176	3,914	-	-	-	(905)	3,009	12.67	0.31	925
FY35	4,571	4,291	-	-	(0)	(1,000)	3,291	13.67	0.28	921
FY36	4,967	4,717	(2,712)	-	-	(425)	1,580	14.67	0.26	403
FY37	5,358	5,092	-	-	-	(1,202)	3,891	15.67	0.23	904
FY38	5,838	5,554	-	-	-	(1,318)	4,236	16.67	0.21	897
FY39	6,330	6,027	-	-	-	(1,437)	4,590	17.67	0.19	885
FY40	6,521	6,205	-	-	-	(1,482)	4,724	18.68	0.18	829
FY41	5,606	5,244	(4,615)	-	-	(78)	551	19.68	0.16	88
FY42	6,092	5,795	-	-	-	(1,379)	4,417	20.68	0.15	644
FY43**	2,882	2,773	-	-	-	(618)	2,155	21.39	0.14	294
Enterprise Value										**18,388**

** From 1st January 2021*
*** 7th September 2042*

Appendix 1.24 – Valuation of SUIPL as on 31st January 2021 under the DCF Method

WACC	10.1%									INR Mn
Year	**Revenue**	**EBITDA**	**MMR**	**Capex**	**Wcap**	**Tax**	**FCFF**	**CAF**	**DF**	**PVFCFF**
FY21*	8	(6)	-	-	49	(0)	44	0.08	0.99	43
FY22	49	(4)	-	-	(3)	-	(7)	0.66	0.94	(7)
FY23	52	43	-	-	(3)	(4)	35	1.66	0.85	30
FY24	55	45	-	-	(3)	(5)	37	2.67	0.77	29
FY25	58	48	-	-	(3)	(5)	40	3.67	0.70	28
FY26	61	52	-	-	(4)	(6)	43	4.67	0.64	27
FY27	65	55	-	-	(4)	(6)	45	5.67	0.58	26
FY28	69	(14)	-	-	(4)	-	(18)	6.67	0.53	(9)
FY29	73	63	-	-	(4)	(7)	52	7.67	0.48	25
FY30	77	67	-	-	(4)	(8)	55	8.67	0.44	24
FY31	82	71	-	-	(4)	(9)	59	9.67	0.40	23
FY32	87	76	-	-	(4)	(10)	63	10.67	0.36	23
FY33**	92	81	-	-	(4)	(11)	67	11.67	0.33	22
Enterprise Value										**284**

** From 1st January 2021*
*** 30ht March 2033*

Appendix 2.1 – Weighted Average Cost of Capital of the NHAI HAM SPVs as on 31st January 2021

Particulars	DLSHL	DKZHL	DYWHL	DTAHL	DWBHL	DMYHL	Remarks
Risk Free Rate (Rf)	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	Risk Free Rate has been considered based on zero coupon yield curve as at 31st January 2021 of Government Securities having maturity period of 10 years, as quoted on CCIL's website
Equity Risk Premium (ERP)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	Based on historical realized returns on equity investments over a risk free rate represented by 10 years government bonds, a 7% equity risk premium is considered appropriate for India
Beta (relevered)	0.59	0.59	0.59	0.60	0.59	0.59	Beta has been considered based on the beta of companies operating in the similar kind of business in India
Base Cost of Equity (Ke)	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**Base Ke = Rf + (ERP+TARP) * β**
Company Specific Risk Premium (CSRP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	Based on SPV specific risk(s)
Adjusted Cost of Equity (Ke)	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**10.5%**	**Adjusted Ke = Rf + (ERP) * β + CSRP**
Pre-tax Cost of Debt (Kd)	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	As represented by the Investment Manager
Tax rate of SPV	16.8%	16.7%	16.6%	15.9%	16.5%	16.6%	Tax Rate Applicable to SPVs is considered
Post-tax Cost of Debt	**6.7%**	**6.7%**	**6.7%**	**6.7%**	**6.7%**	**6.7%**	**Post-tax Kd = Pre-tax Kd * (1-Tax rate)**
Debt / (Debt + Equity)	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	Debt : Equity ratio computed as [D/(D+E)] is considered as 70%
WACC	**7.8%**	**7.8%**	**7.8%**	**7.9%**	**7.8%**	**7.8%**	**WACC = [Ke * (1 - D/(D+E))] + [Kd * (1-t) * D/(D+E)]**

Appendix 2.2 – Weighted Average Cost of Capital of the State ATM SPVs as on 31st January 2021

Particulars	DAVTL	DBSTL	DHDTL	DSSTL	Sitamau	DMSTL	DUNTL	DSBTL	DPRTL	DTNTL	Remarks
Risk Free Rate (Rf)	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	Risk Free Rate has been considered based on zero coupon yield curve as at 31st January 2021 of Government Securities having maturity period of 10 years, as quoted on CCIL's website
Equity Risk Premium (ERP)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	Based on historical realized returns on equity investments over a risk free rate represented by 10 years government bonds, a 7% equity risk premium is considered appropriate for India
Beta (relevered)	0.60	0.60	0.60	0.59	0.60	0.60	0.60	0.60	0.60	0.60	Beta has been considered based on the beta of companies operating in the similar kind of business in India
Base Cost of Equity (Ke)	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	Base Ke = Rf + (ERP+TARP) * β
Company Specific Risk Premium (CSRP)	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	Based on SPV specific risk(s)
Adjusted Cost of Equity (Ke)	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**Adjusted Ke = Rf + (ERP) * β + CSRP**
Pre-tax Cost of Debt (Kd)	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	As represented by the Investment Manager
Tax rate of SPV	15.9%	16.1%	15.6%	16.7%	15.3%	15.8%	15.9%	15.4%	16.4%	16.1%	Tax Rate Applicable to SPVs is considered
Post-tax Cost of Debt	**7.1%**	**7.1%**	**7.2%**	**7.1%**	**7.2%**	**7.2%**	**7.2%**	**7.2%**	**7.1%**	**7.1%**	**Post-tax Kd = Pre-tax Kd * (1-Tax rate)**
Debt / (Debt + Equity)	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	Debt : Equity ratio computed as [D/(D+E)] is considered as 70%
WACC	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**8.3%**	**WACC = [Ke * (1 - D/(D+E))] + [Kd * (1-t) * D/(D+E)]**

Appendix 2.3 – Weighted Average Cost of Capital of the State AM SPVs as on 31st January 2021

Particulars	DNMTL	DBDTL	DJSTL	DMHTL	DHPTL	DHRTL	Remarks
Risk Free Rate (Rf)	6.3%	6.3%	6.3%	6.3%	6.3%	6.3%	Risk Free Rate has been considered based on zero coupon yield curve as at 31st January 2021 of Government Securities having maturity period of 10 years, as quoted on CCIL's website
Equity Risk Premium (ERP)	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	Based on historical realized returns on equity investments over a risk free rate represented by 10 years government bonds, a 7% equity risk premium is considered appropriate for India
Beta (relevered)	0.61	0.60	0.60	0.60	0.60	0.60	Beta has been considered based on the beta of companies operating in the similar kind of business in India
Base Cost of Equity (Ke)	10.6%	10.6%	10.5%	10.5%	10.5%	10.5%	Base Ke = Rf + (ERP+TARP) * β
Company Specific Risk Premium (CSRP)	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	Based on SPV specific risk(s)
Adjusted Cost of Equity (Ke)	**11.1%**	**11.1%**	**11.0%**	**11.0%**	**11.0%**	**11.0%**	**Adjusted Ke = Rf + (ERP) * β + CSRP**
Pre-tax Cost of Debt (Kd)	8.5%	8.5%	8.5%	8.5%	8.5%	8.5%	As represented by the Investment Manager
Tax rate of SPV	13.8%	14.7%	14.9%	15.3%	15.6%	15.2%	Tax Rate Applicable to SPVs is considered
Post-tax Cost of Debt	**7.3%**	**7.3%**	**7.2%**	**7.2%**	**7.2%**	**7.2%**	**Post-tax Kd = Pre-tax Kd * (1-Tax rate)**
Debt / (Debt + Equity)	70.0%	70.0%	70.0%	70.0%	70.0%	70.0%	Debt : Equity ratio computed as [D/(D+E)] is considered as 70%
WACC	**8.5%**	**8.4%**	**8.4%**	**8.3%**	**8.3%**	**8.4%**	**WACC = [Ke * (1 - D/(D+E))] + [Kd * (1-t) * D/(D+E)]**

Appendix 2.4 – Weighted Average Cost of Capital of the Toll SPVs as on 31st January 2021

Particulars	JDTL	SUIPL	Remarks
Risk Free Rate (Rf)	6.3%	6.3%	Risk Free Rate has been considered based on zero coupon yield curve as at 31st January 2021 of Government Securities having maturity period of 10 years, as quoted on CCIL's website
Equity Risk Premium (ERP)	7.0%	7.0%	Based on historical realized returns on equity investments over a risk free rate represented by 10 years government bonds, a 7% equity risk premium is considered appropriate for India
Beta (relevered)	0.81	0.84	Beta has been considered based on the beta of companies operating in the similar kind of business in India
Base Cost of Equity (Ke)	12.0%	12.2%	Base Ke = Rf + (ERP+TARP) * β
Company Specific Risk Premium (CSRP)	1.0%	1.0%	Based on SPV specific risk(s)
Adjusted Cost of Equity (Ke)	**13.0%**	**13.2%**	**Adjusted Ke = Rf + (ERP+TARP) * β + CSRP**
Pre-tax Cost of Debt (Kd)	8.5%	8.5%	As represented by the Investment Manager
Tax rate of SPV	23.3%	18.7%	Tax Rate Applicable to SPVs is considered
Post-tax Cost of Debt	**6.5%**	**6.9%**	**Post-tax Kd = Pre-tax Kd * (1-Tax rate)**
Debt / (Debt + Equity)	50.0%	50.0%	Debt : Equity ratio computed as [D/(D+E)] is considered as 50%
WACC	**9.8%**	**10.1%**	**WACC = [Ke * (1 - D/(D+E))] + [Kd * (1-t) * D/(D+E)]**

Appendix 3.1 – DLSHL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Clearing of Pollution Control Board for Batching Plant**			
	Gata 220	21-Mar-17	1 year	Uttar Pradesh Pollution Control Board
	Gata 107	9-Mar-17	2 years	Uttar Pradesh Pollution Control Board
	Gata 81	9-Mar-17	2 years	Uttar Pradesh Pollution Control Board
	Gata 132	9-Mar-17	2 years	Uttar Pradesh Pollution Control Board
	Gata 137, 139	9-Mar-17	2 years	Uttar Pradesh Pollution Control Board
2	**Permission of Village Panchayat and Pollution control board for installation of crushers**			
	Village Panchayat NOC	2-Sep-15		Gram Panchayat, Lalai
	Pollution control board NOC	1-Dec-16	31-Dec-18	Uttar Pradesh Pollution Control Board
3	**Permission of state government for cutting of trees**			
	Permission for cutting trees for widening of Lucknow Sultanpur Route	10-Mar-17	-	Office of Divisional Director, Social Forestry Division, Sultanpur
4	**Permission for Camp and Stockyard**			
	NOC for Camp (Gata 268)			Gram Panchayat - Gotauna
	NOC for Camp (Gata 210,213,211,286,218,267, 272,264,266,219,221,253,274,273,276,268,262)	-	-	Gram Panchayat - Gotauna
	NOC for Camp	15-Dec-16	-	Gram Panchayat - Gunnaur
5	**Labour License**			
	License of Contract Labour (for 300 workers per day)	8-Mar-17	7-Mar-18	GOI, Ministry of Labour and Employment
6	**Clearing of Pollution Control Board for Plant**			
	NOC for Hot Mix Plant	21-Mar-17	1 year	Uttar Pradesh Pollution Control Board

Source: Investment Manager

Appendix 3.2 – DKZHL: Summary of approval and licences (1/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of the State Government for extraction of boulders from quarry**			
	Minor Mineral Extraction License for Kanakvali under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	1-Aug-17	20-Dec-17	Collector and District Magistrate Office, Sindhudurg
	Minor Mineral Extraction License for Kanakvali under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	8-Jan-19	7-Jun-19	Collector and District Magistrate Office, Sindhudurg
	Minor Mineral Extraction License for Kanakvali under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	19-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
2	**Permission of Village Panchayat and state government for Borrow earth**			
	Permission for soil excavation on 20 villagers' land	-	-	Sub treasury Officer Kudal & Kankavli, Maharashtra
	Permission for soil excavation in Salgaon on an area of 2.67 hectare.	22-Feb-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Anav on an area of 2.87 hectare. Survey number is 15/1.	19-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Kalsuli on an area of 0.61 hectare. Survey number is 43/8, 43/9 and 43/12.	19-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Kasal on an area of 3.73 hectare.	19-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Pavshi on a total area of 1.94 hectare. The survey number is 35/24 (235).	30-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Zarap on an area of 2.74 hectare.	30-Mar-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Kalsuli on an area of 0.61 hectare. Survey Number is 43/15 and 43/17.	25-Dec-19	-	Collector and District Magistrate Office, Sindhudurg
	Permission for soil excavation in Zarap on a total area of 2.09 hectare for survey numbers 2653 B/ 2560 B.	25-Dec-19	-	Collector and District Magistrate Office, Sindhudurg

Source: Investment Manager

Appendix 3.2 – DKZHL: Summary of approval and licences (2/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
3	**Permission of Village Panchayat and Pollution control board for installation of crushers**			
	NOC from Gram Panchayat for Crusher, stone stocks, RMC Plant, hot mix plant, staff quarters, office building, way bridge and WM Plant subject to relevant conditions.	11-Apr-17	-	Gram Panchayat Office, Bordave
	Permission is granted for setting up of stone crusher with maximum allowed quantity of 2800 metric tonne per day.	16-Aug-18	-	Maharashtra Pollution Control Board, Regional Office, Kolhapur
	Consent No.: RO-KOLHAPUR/ CONSENT/ 1808000698/ 705/ 18 Consent to Operate Stone crusher at Kankavali under the Water Act, Air Act and HW and OW (M and TM) Rules	16-Aug-18	31-12-2021	Maharashtra Pollution Control Board, Regional Office, Kolhapur
	Consent No.: RO-KOLHAPUR/ CONSENT/ 1709000847/ 503/ 17 Consent to Establish Stone crusher at Kankavali under the Water Act, Air Act and HW and OW (M and TM) Rules	22-Sep-17	Commissioning of the unit or 5 years, whichever is earlier	Maharashtra Pollution Control Board, Regional Office, Kolhapur
4	**Clearance of Pollution Control Board**			
	Consent No.: MPCB/ SRO-RATNAGIRI/ CONSENT/ 1707001094 (95/96)/ 17 Consent to Establish Ready Mix Concrete (RMC) plant at Kudal under the Water Act, Air Act and HW and OW (M and TM) Rules	26-Jul-17	Commissioning of the unit or 5 years, whichever is earlier	Maharashtra Pollution Control Board, Sub Regional Office, Ratnagiri
	Consent No.: MPCB/ SRO-RATNAGIRI/ CONSENT/ 1711000702 (05/07)/ 17 Consent to Operate Ready Mix Concrete (RMC) plant at Kudal under the Water Act, Air Act and HW and OW (M and TM) Rules	18-Nov-17	31-12-2020	Maharashtra Pollution Control Board, Sub Regional Office, Ratnagiri
	Consent No.: MPCB/ SRO-RATNAGIRI/ CONSENT/ 1707001093/ 17 Consent to Establish Dry Lean Concrete (DLC) plant at Kudal under the Water Act, Air Act and HW and OW (M and TM) Rules	26-Jul-17	Commissioning of the unit or 5 years, whichever is earlier	Maharashtra Pollution Control Board, Sub Regional Office, Ratnagiri
	Consent No.: MPCB/ SRO-RATNAGIRI/ CONSENT/ 1711000706/ 17 Consent to Operate Dry Lean Concrete (DLC) plant at Kudal under the Water Act, Air Act and HW and OW (M and TM) Rules	18-Nov-17	31-12-2020	Maharashtra Pollution Control Board, Sub Regional Office, Ratnagiri
	Consent No.: RO-KOLHAPUR/ CONSENT/ 1709000848/ 502/ 17 Consent to Establish Hot Mix plant at Kankavali under the Water Act, Air Act and HW and OW (M and TM) Rules	22-Sep-17	Commissioning of the unit or 5 years, whichever is earlier	Maharashtra Pollution Control Board, Regional Office, Kolhapur
	Consent No.: RO-KOLHAPUR/ CONSENT/ 1808000695/ 704/ 18 Consent to Operate Hot Mix plant at Kankavali under the Water Act, Air Act and HW and OW (M and TM) Rules	16-Aug-18	31-12-2021	Maharashtra Pollution Control Board, Regional Office, Kolhapur

Source: Investment Manager

Appendix 3.2 – DKZHL: Summary of approval and licences (3/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
5	**Permission of state government for cutting of trees**			
	Cutting trees in Rambambuli	7-Dec-17	-	Office of Deputy Conservators of Forest
	Cutting trees in Oras, Wadihamarmala and Pandur	8-Dec-17	-	Office of Deputy Conservators of Forest
	Cutting trees in Osargaon	6-Feb-18	-	Office of Deputy Conservators of Forest
	Cutting trees in Kudal, Sangirde and Kankavali	4-Sep-18	-	Office of Deputy Conservators of Forest
	Cutting trees in Halwal	6-Dec-18	-	Range Forest Officer (Pvt.) Kudal - Kudal
	Cutting trees in Wagde	24-Dec-18	-	Range Forest Officer (Pvt.) Kudal - Kudal
	Cutting trees in Betal Bambarde, Powasi, Borbhati, Belnadi, Guldepur, Pinguli, Temdhuri Nagar, Bibwane, Mangaon, Salgaon and Zarap	28-Dec-18	-	Range Forest Officer (Pvt.) Kudal - Kudal
6	**NOC from Gram Panchayat for Camp**			
	Camp 2 September 2018 to August 2019	27-Apr-17	-	Gram Panchayat, Salgaon
	Camp 1 September 2018 to August 2019	11-May-17	-	Gram Panchayat, Bordave
	Camp 3 September 2018 to August 2019	26-Jul-17	-	Gram Panchayat, Wagde
7	**Labour License**			
	Labour License under Contract Labour (Regulation and Abolition) Act, 1970 and Central Rules, 1971	6-Jul-18	05-07-2021	Ministry of Labour & Employment, GOI

Source: Investment Manager

Appendix 3.3 – DYWHL: Summary of approval and licences (1/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of state government for cutting of trees**			
	Cutting of trees under Maharashtra Tree Cutting Act 1964	09-Nov-17	-	Forest Range Office, Forest Department, Yavatmal
	Cutting of trees under Maharashtra Tree Cutting Act 1964	03-Nov-17	-	Forest Range Office, Forest Department, Jodmoha
	Cutting of trees under Maharashtra Tree Cutting Act 1964	16-Nov-17	-	Forest Range Office, Forest Department, Wardha
2	**Permission for diversion of forest land and non-agricultural use**			
	Permission for diversion of forest land for construction purposes (Issued to Forest and Revenue Department, Government of Maharashtra)	19-Feb-18	-	Ministry of Environment, Forests and Climate Change - Government of India
3	**Permission of Village Panchayat and Pollution control board for installation of crushers**			
	Temporary non-agricultural permission for shed construction and storage of construction material	5-Aug-17	-	Sub-Divisional Office, Ralegaon
	Temporary non-agricultural permission for shed construction and storage of construction material	5-Aug-17	-	Sub-Divisional Office, Ralegaon
	Temporary non-agricultural permission / industrial permission - crusher plant, storage of construction material	3-Nov-17	30-Nov-20	Tehsildar, Deoli

Source: Investment Manager

Appendix 3.3 – DYWHL: Summary of approval and licences (2/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
4	**Clearance from Pollution control board for Wet Mix / DLC, Ready Mix (RMC), Dry Sand, Stone Metals**			
	Consent to establish under Water Act, Air Act, Hazardous and Other Waste Rules	29-Jul-17	28-Jul-22	Maharashtra Pollution Control Board
	Consent to operate under Water Act, Air Act, Hazardous and Other Waste Rules	13-Nov-17	31-Aug-19	Maharashtra Pollution Control Board
5	**Permission of the State Government for extraction of boulders from quarry**			
	Permission for mining	5-Sep-17	-	Office of Gram Panchayat, Wabgaon
	Permission for mining	23-Jul-17	-	Office of Gram Panchayat, Bhidi
	Excavation / Mining of minor minerals	13-Sep-17	13-Nov-17	Mining Office, Wardha
6	**Labour License**			
	Certificate of registration and Licence for execution of contract work (for 200 construction workers)	11-Jul-17	10-07-2018	Ministry of Labour - Government of India
	Certificate of registration as employer under Contract Labour Central Rules, 1971 (for maximum of 50 contract labours per day)	26-Nov-20		Office of Licencing Officer, Government of India
	Licence under Contract Labour Central Rules, 1971 (for maximum of 50 contract labours per day)	19-Nov-20	18-11-2021	Office of Licencing Officer, Government of India

Source: Investment Manager

Appendix 3.4 – DTAHL: Summary of approval and licences (1/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of the State Government for extraction of boulders from quarry**			
	Minor Mineral Extraction License for Khandala under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (22,000 Brass stones - INR 66 lakh)	28-Jul-17	27-Oct-17	Minor Mineral Branch, Osmanabad District Office
	Minor Mineral Extraction License for Khandala under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 75 lakh)	8-Nov-17	07-Feb-18	Minor Mineral Branch, Osmanabad District Office
	Minor Mineral Extraction License for Karla under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 75 lakh)	1-Jan-18	31-Mar-18	Minor Mineral Branch, Osmanabad District Office
	Minor Mineral Extraction License for Karla under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 75 lakh)	27-Jun-18	26-Sep-18	Minor Mineral Branch, Osmanabad District Office
	Minor Mineral Extraction License for Karla under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 75 lakh)	30-Oct-18	29-Jan-19	Minor Mineral Branch, Osmanabad District Office
	Minor Mineral Extraction License for Belkund under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 1 Crore)	22-Sep-17	31-Mar-18	Minor Mineral Branch, Latur District Office
	Minor Mineral Extraction License for Belkund under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 1 Crore)	12-Dec-17	31-Mar-18	Minor Mineral Branch, Latur District Office
	Minor Mineral Extraction License for Belkund under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 1 Crore)	28-Feb-18	31-Mar-18	Minor Mineral Branch, Latur District Office
	Minor Mineral Extraction License for Belkund under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 1 Crore)	28-Aug-18	31-Dec-18	Minor Mineral Branch, Latur District Office
	Minor Mineral Extraction License for Belkund under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013 (25,000 Brass stones - INR 1 Crore)	28-Nov-18	30-Apr-19	Minor Mineral Branch, Latur District Office

Source: Investment Manager

Appendix 3.4 – DTAHL: Summary of approval and licences (2/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
2	**License for use of explosives**			
	License for Possession for Use of Explosives (Issued to M/s Mewara Explosives)	18-Mar-13	31-Mar-16	Petroleum and Explosives Safety Organisation, GOI
	License to transport explosives in a road van (Issued to Prithviraj Mewara)	11-Feb-16	31-Mar-20	Petroleum and Explosives Safety Organisation, GOI
	License to transport explosives in a road van (Issued to Prithviraj Mewara)	25-Jan-16	31-Mar-21	Petroleum and Explosives Safety Organisation, GOI
	Certificate of competency to carry out blasting (Issued to Vikas Mewara and Ramdev Gujar)	2-Jul-10	5	Petroleum and Explosives Safety Organisation, GOI
	Certificate of competency to carry out blasting (Issued to Chandrakant Kadam)	30-Aug-11	5	Petroleum and Explosives Safety Organisation, GOI
3	**Permission of state government for cutting of trees**			
	Tree cutting permission	15-Sep-17		Range Forest Officer and Tree Officer, Latur
	Tree cutting permission	25-Sep-17		Range Forest Officer and Tree Officer, Tuljapur
4	**Clearance of Pollution Control Board**			
	Consent No.: RO-Aurangabad/Consent/1910000149 Consent to Operate RMC plant and Aggregate (Hot mix) plant at Belkund under the Water Act, Air Act and HW and OW (M and TM) Rules	3-Oct-19	31-Jul-21	Maharashtra Pollution Control Board
	Consent No.: SRO-Latur/Consent/1909001169 Consent to Operate RMC plant and Wet mix plant at Khandala under Water Act, Air Act and H&OW (M&TM) Rules	27-Sep-19	31-Jul-22	Maharashtra Pollution Control Board
5	**Labour License**			
	Labour License under Contract Labour (Regulation and Abolition) Act, 1970 and Central Rules, 1971	8-Aug-17	07-Aug-20	Ministry of Labour & Employment, GOI

Source: Investment Manager

Appendix 3.5 – DWBHL: Summary of approval and licences (1/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of the State Government for extraction of boulders from quarry**			
	Mining Licence for extraction in Selu under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	26-Jul-17	25-Sep-17	District Mining Office, Wardha
	Order for Extension of Mining Licence for extraction in Selu under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	28-Sep-17	25-Nov-17	Upper District Collector, Wardha
	Mining Licence for extraction in Wardha under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	22-Aug-17	21-Nov-17	District Mining Office, Wardha
	Mining Licence for extraction in Deoli under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	13-Sep-17	13-Nov-17	District Mining Office, Wardha
	Mining Licence for extraction in Wardha under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	15-Sep-17	13-Nov-17	District Mining Office, Wardha
	Order for Extension of Mining Licence for extraction in Wardha under Maharashtra Minor Mineral Extraction (Development and Regulations) Rules, 2013	16-Nov-17	15-Jan-18	Upper District Collector, Wardha
2	**Clearing of Pollution control board (Kelzar and Umari)**			
	Consent No.: MPCB/1711000400 and Consent No.: MPCB/1711000401 Consent to Operate under the Water Act, Air Act and HW and OW (M and TM) Rules	9-Nov-17	31-Aug-19	Maharashtra Pollution Control Board
	Consent No.: MPCB/1707001282 and Consent No.: MPCB/1707001283 Consent to Establish under the Water Act, Air Act and HW and OW (M and TM) Rules	29-Jul-17	Commissioning of the Unit or 5 years whichever is earlier	Maharashtra Pollution Control Board
3	**Clearance of Village Panchayats for Asphalt plant**			
	NOC for laying machinery, Asphalt Plant / RMC Plant / Crusher / WMM Plant / Diesel Pipe / Electrical Diesel Machine on Land for construction of Butibori to Wardha Road (NH-361).	20-Jun-17	-	Office of Gram Panchayat, Kelzar
	NOC for laying machinery, Asphalt Plant / RMC Plant / Crusher / WMM Plant / Diesel Pipe / Electrical Diesel Machine on Land (Survey No. 184/1, 185) for construction of Butibori to Wardha Road (NH-361).	11-Jul-17	3 years	Office of Gram Panchayat, Umari
	NOC for laying machinery, Asphalt Plant / RMC Plant / Crusher / WMM Plant / Diesel Pipe / Electrical Diesel Machine on Land (Survey No. 269/2) for construction of Butibori to Wardha Road (NH-361).	11-Jul-17	3 years	Office of Gram Panchayat, Umari
	NOC for laying machinery, Asphalt Plant / RMC Plant / Crusher / WMM Plant / Diesel Pipe / Electrical Diesel Machine on Land for construction of Butibori to Wardha Road (NH-361).	27-Oct-17	-	Office of Gram Panchayat, Ashola
	NOC for laying machinery, Asphalt Plant / RMC Plant / Crusher / WMM Plant / Diesel Pipe / Electrical Diesel Machine on Land for construction of Butibori to Wardha Road (NH-361).	23-Jun-17	-	Office of Gram Panchayat, Bhidi

Source: Investment Manager

Appendix 3.5 – DWBHL: Summary of approval and licences (2/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
4	**Permission of state government for cutting of trees**			
	Tree cutting permission for upgradation of Wardha-Butibori section of NH-361	24-Oct-17	-	Forest Range Officer, Butibori
	Tree cutting permission for upgradation of Wardha-Butibori section of NH-361	16-Nov-17	-	Forest Range Officer, Wardha
	Tree cutting permission for upgradation of Wardha-Butibori section of NH-361	15-Nov-17	-	Forest Range Officer, Hingi
5	**Permission of Village Panchayat and Pollution control board for installation of crushers**			
	Permission for temporary non-agricultural use for construction of shed for storage purposes	14-Jun-17	30-Jun-18	Tehsildar, Kankavli
	Permission for temporary non-agricultural use for lying Crusher Plant,RMC Plant, Workshop, storage for construction materials,etc.	28-Aug-17	16-May-20	Tehsildar, Selu
6	**Labour License**			
	Certificate of Registration (ALCN-42/R/72/2017-BOCW) under The Building & Other Construction Workers Act, 1996 & Central Rules, 1998 for the execution of contract work of Wardha to Butibori section of NH-361.	11-Jul-17	04-May-20	Ministry of Labour and Employment Office
	License (ALCN/46/L/127/2017-CL) under The Contract Labour (Regulation & Abolition) Act, 1970 & Central Rules,1971 for the execution of contract work of Wardha to Butibori section of NH-361.	11-Jul-17	10-Jul-17	Ministry of Labour Office
	License (CLRA/ALCNAGPUR/2020/L-196) under The Contract Labour (Regulation & Abolition) Central Rules,1971 for the execution of contract work of Wardha to Butibori section of NH-361.	19-Nov-20	18-Nov-21	Office of the Licensing Officer
7	**Permission for laying extra pipes**			
	Permission to lay pipes along the canal side for Butibori to Wardha quadrangle road (NH-361)	5-Jul-17	-	Sub-Divisional Engineer, Irrigation Subdivision, Selu.

Source: Investment Manager

Appendix 3.6 –DMYHL: Summary of approval and licences (1/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Other permits / clearances**			
	Environment Health & Safety Manual, Environment Management Plan, Traffic Management and Safety plan	-	-	National Highway Authority of India
2	**Permission for power supply**			
	Load sanction for power supply new temporary HT consumer	16-Mar-18	6 months	Maharashtra State Distribution Co.Ltd. O.&M. Circle, Yavatmal
	Load sanction for power supply new temporary HT consumer	16-Mar-18	6 months	Maharashtra State Distribution Co.Ltd. O.&M. Circle, Yavatmal
3	**Clearing of Pollution control board for Stone Crusher, DLC, RMC and Sand Classifier (Mhasola and Sukali)**			
	Consent to establish under Water Act, Air Act, Hazardous and Other Waste Rules	9-Aug-17	08-Aug-22	Maharashtra Pollution Control Board
	Consent to operate under Water Act, Air Act, Hazardous and Other Waste Rules	7-Dec-17	31-Oct-19	Maharashtra Pollution Control Board
4	**Permission of Village Panchayat and Pollution control board for installation of crushers**			
	No Objection Certificate, Mhasola	23-Jun-17	-	Gram Panchayat, Mhasola
	No Objection Certificate, Sukali	10-Jul-17	-	Gram Panchayat, Sukali
	No Objection Certificate, Sukali	14-Jul-17	-	Gram Panchayat, Sukali
5	**Diesel Storage**			
	No objection certificate for HS Diesel Storage Tank, Mhasola	18-Dec-17	-	Office of Sub-Divisional Officer and Magistrate, Yavatmal
	No objection certificate for HS Diesel Storage Tank, Sukali	18-Dec-17	-	Office of Sub-Divisional Officer and Magistrate, Yavatmal

Source: Investment Manager

Appendix 3.6 – DMYHL: Summary of approval and licences (2/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
6	**Labour License**			
	Issue of registration certificate under Contract Labour Act	31-Jul-17	-	GOI, Ministry of Labour and Employment
	Contract labour - Issuance of and renewal licence (No ALCH 46(L)/54/2017)	31-Jul-17	30-Jul-21	GOI, Ministry of Labour and Employment
	Issue of registration certificate under Building and Other Construction Workers Act	31-Jul-17	-	GOI, Ministry of Labour and Employment
	Contract labour - Issue of licence (No ALCH 42('R)/4/2017)	31-Jul-17	30-Jul-18	GOI, Ministry of Labour and Employment
7	**Permission of state government for cutting of trees**			
	Tree cutting permission for 80.195 km under NHDP phase-IV	27-Oct-17	-	Forest Range Officer, Kali
	Tree cutting permission for 80.195 km under NHDP phase-IV	3-Nov-17	-	Forest Range Officer, South Arni
	Tree cutting permission for 80.195 km under NHDP phase-IV	8-Nov-17	-	Forest Range Officer, Hiwari
	Permission for diversion of forest land for non-agricultural use			
	Diversion of 34.9831 ha of forest land in favour of NHAI	19-Feb-18	-	Ministry of Environment, Forests and climate change
8	**License for use of explosives**			
	Licence for nitrate mixture, safety fuse and electric and/or Ordinary detonators	5-Feb-02	31-Mar-03	Controller of explosives
	Blasting Permission Letter	2-Nov-17	-	Swapnil Su, Tagade, Sub Divisional Magistrate's Office, Yavatmal
	Blasting Permission Letter	2-Nov-17	-	Swapnil Su, Tagade, Sub Divisional Magistrate's Office, Yavatmal
9	**Permission of the State Government for extraction of boulders from quarry**			
	Mhasola boulder permission	6-Nov-18	1 month	Collectorate Yavatmal
	Sukli Boulder permission	27-Feb-19	3 months	Collectorate Yavatmal
	Stone Quarry	27-Feb-19	3 months	Collectorate Yavatmal

Source: Investment Manager

Appendix 3.7 – DAVTL: Summary of approval and licences

I have not been provided with any documents for this SPV. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Appendix 3.8 – DBSTL: Summary of approval and licences (1/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission for diversion of forest land**			
	Permission granted for diversion of 12.026 hectare of Reserved, Protected and Revenue forest land for construction of Betul-Parasia road, State Highway no. 43.	26-Feb-18	-	Ministry of Environment, Forest and Climate Change, Western Region, Bhopal, Government of India
	Permission granted for diversion of forest land for widening and upgradation of Betul project road passing through Satpura-Pench corridor	5-May-17	-	State Chief Wildlife Wardens Office, Madhya Pradesh
	Permission granted for diversion of 19.653 hectare of Reserved, Protected and Revenue forest land for construction of Betul-Parasia road, State Highway no. 43 in Chhindwara District of MP.	10-Nov-15	-	Office of Forest Divisional Officer, West Chhindwara Forest Division
	NoC from Gram Panchayat for carrying out road construction work of Betul-Parasia, National Highway 43 on forest land of the village.	3-Oct-13	-	Gram Panchayat, Kumhartek
	NoC from Gram Panchayat for carrying out road construction work of Betul-Parasia, National Highway 43 on forest land of the village.	5-Oct-13	-	Gram Panchayat, Maramjhiri
	Certicate for land diversion of 33.660 hectares of forest land	24-Mar-14	-	Office of Collector, Betul
	Permission granted for diversion of forest land for widening and upgradation of Betul zone.	11-Feb-14	-	Office of deputy forest officer, Betul
	Proposal for diversion of Affected forest land	17-Jan-14	-	Office of Forest Zone Officer Sarni

Source: Investment Manager

Appendix 3.8 – DBSTL: Summary of approval and licences (2/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
2	**Permission for Commercial use of land**			
	Land measuring upto 0.809 hectare in Ghoradogri taken on lease for setting up plant and construction of temporary office / camp for storage of materials and machinery which will be used for construction of road.	2-Apr-14	FY 2013-14 and FY 2014-15	Court, Sub-Divisional Officer (Revenue), Shahpur, Distt. Betul
	Land measuring upto 0.405 hectare in Ghoradogri, taken on lease for construction of temporary office / camp for storage of materials and machinery which will be used for construction of road.	2-Apr-14	FY 2013-14 and FY 2014-15	Court, Sub-Divisional Officer (Revenue), Shahpur, Distt. Betul
	Land measuring upto 0.405 hectare in Ghoradogri, taken on lease for construction of temporary office / camp for storage of materials and machinery which will be used for construction of road.	2-Apr-14	FY 2013-14 and FY 2014-15	Court, Sub-Divisional Officer (Revenue), Shahpur, Distt. Betul
	Permission for setting up temporary office / camp in Ghoradogri, Betul for facilitating construction of road.	5-Sep-13	-	Gram Panchayat Office, Ghoradogri, Betul
3	**Permission for Extraction Work and Setting-up plant**			
	Permission for extraction of stone from 0.959 hectares of land.	4-Oct-13	-	Gram Panchayat Office, Ghogri Rayat
	Permission granted for extraction of 2000 mm Muram and 25000 mm stone from area of 1.250 hectares out of total 1.805 hectares and 500 mm Muram and 5000 mm stone from area of 0.250 hectares out of total 1.505 hectares.	3-Oct-13	-	Office Colletor (Mineral Branch), Betul
	NoC for establishment of stone crusher on 0.765 hectares of land.	27-Jan-14	-	Gram Panchayat Office, Ghogri Rayat and Janpad Panchayat, Parrasia, Chindwara M.P.
	Permission granted for setting-up RMC plant and DG Set on 1.892 acre of land.	27-Jan-14	-	Gram Panchayat Office, Ghogri Rayat and Janpad Panchayat, Parrasia, Chindwara M.P.
	Permission for setting-up DVM plant on 2.10 acre land.	27-Jan-14	-	Gram Panchayat Office, Ghogri Rayat and Janpad Panchayat, Parrasia, Chindwara M.P.
	Permission for setting-up WMM plant on 2.02 acre land.	27-Jan-14	-	Gram Panchayat Office, Ghogri Rayat and Janpad Panchayat, Parrasia, Chindwara M.P.
4	**Approval of Drawings**			
	Drawings for development and operation of Betul Sarni Parasia road on BOT basis.	10-Mar-14	-	Theme Engineering Services Pvt. Ltd.

Source: Investment Manager

Appendix 3.8 – DBSTL: Summary of approval and licences (3/3)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
5	**Permission of state government for cutting of trees**			
	Permission greanted for Cutting trees for widening and contruction of two-lane road stated in order dated 8-5-12	4-Mar-14	-	Offiice of Forest Officer, North Betul Forest Division
	Letter for permission regarding felling of trees in Betul, Sarani, Tika Dhana, Junnadev and Parasia	8-May-12	-	Court Collector, Betul
	Promissory note	3-Mar-14	-	Madhya Pradesh road development Corporation limited
	Permission greanted for Cutting trees for widening and contruction of two-lane road stated in order dated 8-5-12	6-Mar-14	-	Offiice of Forest Officer, North Betul Forest Division
6	**Permission for Land Diversion**			
	Gopal Omkar - Survey No. 36 - 0.4 hectares	2-Apr-14	2 years	Sub-Divisional Officer (Revenue), Parasia
	Ramdas Ramkrishna - Survey No. 34/1, 34/2, 34/3 - 0.757 hectares	2-Apr-14	2 years	Sub-Divisional Officer (Revenue), Parasia
	Joheb Hasan - Survey No. 12/1 - 1 hectare	2-Apr-14	2 years	Sub-Divisional Officer (Revenue), Parasia
	Baikundth Rai - Survey No. 33 - 0.765 hectares	2-Apr-14	2 years	Sub-Divisional Officer (Revenue), Parasia
	Nawnit - Survey No. 40 - 0.279 hectares	2-Apr-14	2 years	Sub-Divisional Officer (Revenue), Parasia
7	**Permission for construction of pond**			
	Consent for construction of pond in 2 acres of land in Junnardeo Village	4-Mar-14	-	Office of the Collector (Mining Branch), Chhindwara
8	**Permission of the State Government for extraction of boulders from quarry**			
	Temporary permit for excavation and transportation of mineral stone/ ballast	25-Oct-13	23-Oct-14	Office of the Collector (Mining Branch), Chhindwara
9	**Clearance of Pollution Control Board**			
	For Hot Mix and WMM Plant	21-Mar-14	31-Dec-14	M.P. Pollution Control Board
	For RMC Mix and Stone Chips	21-Mar-14	31-Dec-14	M.P. Pollution Control Board

Source: Investment Manager

Appendix 3.9 – DHDTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Handing /taking over the land for the development of Hata-Darguan (SH 48) road section.	9-Nov-15	-	MP Road Development Corporation Ltd.

Source: Investment Manager

Appendix 3.10 – DSSTL: Summary of approval and licences

I have not been provided with any documents for this SPV. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Appendix 3.11 –Sitamau: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Handing over the right to access over the site - 112.218 hectares (99.80% of the total land propose)	03-May-12	-	Madhya Pradesh Road Development Corporation Ltd

Source: Investment Manager

Appendix 3.12 – DMSTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	Annual safety report	22-Aug-16	-	Madhya Pradesh Road Development Corporation Limited
2	**Permission of state government for cutting of trees**			
	Permission for cutting trees for Upgradation work of the route passing through the forest area	7-Aug-13	-	General Forest Division, Khandwa
	Permission for cutting trees obstructing in upgrading/widening of roads	30-Jun-12	-	Sub divisional Officer, Khandwa
3	**Permission of the State Government for extraction of boulders from quarry**			
	Permission for extraction of Stone Boulder and Murum Quarry in Village Cheerakhan, Khandwa	26-Feb-13	-	State Environment Impact Assessment Authority, MP
	Permission for extraction of Stone Boulder and Murum Quarry in Village Udaipur Raiyyat, Khandwa	27-Feb-13	-	State Environment Impact Assessment Authority, MP
	Granting permission for excavation of minerals	11-Sep-13	-	Office of Collector (Mineral), District Khandwa
	Permission for setting up a temporary stone crusher and hard mix plant for extraction of minerals	19-Mar-12	-	Office of Collector (Mineral), District Khandwa

Source: Investment Manager

Appendix 3.13 – DUNTL: Summary of approval and licences

I have not been provided with any documents for this SPV. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Appendix 3.14 – DSBTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Handing over of site for pre-construction / construction activities	14-Sep-11	-	Madhya Pradesh Road Development Corporation Ltd

Source: Investment Manager

Appendix 3.15 – DPRTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Permission for handing over of "Right of access to the site" for development of Patan - Tendukheda- Rehli Road	28-Oct-15	-	Madhya Pradesh Road Development Corporation Limited
2	**Permission of state government for cutting of trees**			
	Permission to upgradation of road which comes under Nauradehi Sanctuary	12-Jan-17	-	Office of the Forest Officer, Nauradehi

Source: Investment Manager

Appendix 3.16 – DTNTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
	Handing over site land			
1	Handing over of road for development work - 14,60,800 sq. meter	13-Aug-14	-	Madhya Pradesh Road Development Corporation Ltd

Source: Investment Manager

Appendix 3.17 – DNMTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of state government for cutting of trees**			
	Diversion of 39.69 hectare protected forest land in Kheda District of Gujrat	18-May-12	-	Forest and Environment Department, Govt. of Gujrat
	Diversion of 39.69 hectare protected forest land in Kheda District of Gujrat	15-Feb-12	-	Ministry of Environment and Forests, Govt. of India
	Diversion of 39.06 hectare protected forest land in Sabarkantha District of Gujrat	23-Jul-12	-	Ministry of Environment and Forests, Govt. of India
	Diversion of 39.06 hectare protected forest land in Sabarkantha District of Gujrat	27-Jul-12	-	Forest and Environment Department, Govt. of Gujrat
2	**Clearance of Pollution Control Board**			
	Consent No.: GPCB/ CTE-KH/ 559169 Consent to Establish Asphalt Concrete plant at Kheda under the Water Act, Air Act and HW and OW (M and TM) Rules	16-Mar-20	17-Feb-27	Gujrat Pollution Control Board, Gandhinagar
3	Setting up industrial unit for operation of plant or carrying out industrial activity	1-Sep-20	9-Aug-25	Gujrat Pollution Control Board, Nadiad
4	Workmen's Compensation Policy	18-Feb-20	30-Jan-21	The New India Assurance Company Limited
5	Project Insurance Policy	27-Mar-20	1 year	National Insurance Company Limited

Source: Investment Manager

Appendix 3.18 – DBDTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Handing over of Bankhalfata-Dogawa site for development of road measuring total length of 65.40 kms.	26-Mar-13	-	Madhya Pradesh Road Development Corporation limited
2	**Permission for upgradation of route**			
	NOC for upgradation of route from Mandla to Seldamal and NOC from Forest Officer	30-Nov-12	-	NHDC Limited, Govt. of Madhya Pradesh

Source: Investment Manager

Appendix 3.19 – DJSTL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Handing over site land**			
	Permission for handing over of "Right of access to the site" for development of Road	14-May-13	-	Madhya Pradesh Road Development Corporation Limited
2	**Permission of state government for cutting of trees**			
	Permission for cutting tress for obstruction in the widening of the route	6-Jun-13	-	Collector, Ratlam

Source: Investment Manager

Appendix 3.20 – DMHTL: Summary of approval and licences (1/3)

I have been provided with the supplementary agreement entered with the Governor of Karnataka, which stated that all listed approvals therein are in place. It is to be noted that I was provided with only few documents (like NOC from Tehsildar and NOC from Gram Panchayat for installation of crusher plant) to verify this permit status. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Sr. No.	Approvals	Permit Status	Management Comments
1	Permission for new quarries from Department of Mines and Geology, State Pollution Control Board, land conversion from State Revenue Department and District Administration. If mining area comes under forest land, permission from State Forest Department	Conditionally fulfilled	Concessionaire has identified 2 quarries for the project, i.e. (i) Devanagere district (government quarry); (ii) Koyilagaratti (private quarry). Permission from Department of Mines & Geology, PCB and land conversion permission for development of quarry is pending with the District Commissioner. NOC form the Village Panchayat have been received. Conditionally, accepted based on submission of all applicable permits to KRDCL before carrying out quarrying operations.
2	Permission of Village Panchayat and Pollution Control Board for and installation of crushers	Conditionally fulfilled	Concessionaire is installing new crushers at Devanagere district and Koyilagaratti. PCB Permission for operation & establishment of crusher is pending. Supporting documents for crushers includes: NOC from Village Panchayat. Conditionally accepted based on submission of all applicable permits to KRDCL before carrying out crushing operations.
3	License for use of explosive from the office of Explosives controller	Conditionally Fulfilled	Valid license to possess explosives, transport explosives and carry out blasting operations is pending. According to the concessionaire, application can be made after the approval of quarry license. Conditionally accepted based on submission of all applicable permits to KRDCL before using explosives.
4	Permission for drawing water from bore well / pond / river from Village Panchayat / Irrigation Department as applicable	Conditionally Fulfilled	Permission for drawing water from bore well from Village Panchayat and agreement with private land owner to supply the water from his own borewell is pending. Conditionally fulfilled subject to submission of such permits to KRDCL before drawing of water from any bore well/ pond for the project.
5	License for Inspector of factories or other competent authority for setting up Batching Plant	Conditionally Fulfilled	Permission from Village Panchayat and PCB have been received. Permission from Dept of Factory and Boiler is pending. Conditionally fulfilled subject to submission of such permits to KRDCL before the operations of Batching Plants.
6	Consent for Establishment and Operation of Asphalt Plant, WMM Plant and Concrete Batching Plant from State Pollution Control Board	Conditionally Fulfilled	Permission from Village Panchayat and PCB for establishment of Asphalt plant, WMM Plant and Concrete Batching Plant have been received. PCB permission for establishment of Asphalt plant, WMM Plant and Concrete Batching Plant is pending. Conditionally fulfilled subject to submission of Village Panchayat permission to KRDCL before the operations of Asphalt plant and WMM plant.

Source: Investment Manager

Appendix 3.20 – DMHTL: Summary of approval and licences (2/3)

Sr. No.	Approvals	Permit Status	Management Comments
7	**Borrow Earth**		
	i) Permission required from Village Panchayat and owner of the land in case of private land;	Conditionally Fulfilled	Permission from Village Panchayat & Private land owner is pending. Alternatively, concessionaire has applied for permission to tahsildar for sand quarry from the nearby canal area. Conditionally accepted; subject to submission of applicable permits before using the borrow area.
	ii) Permission from Local Municipalities and Development Authorities;	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
8	Permission of State Forest Department for cutting of trees, if any	Fulfilled	Accepted; The same is responsibility of Authority subject to provision of clause 11.4 of CA.
9	**Ministry of Finance / RBI**		
	i) Approval for foreign investment and foreign loans, if required;	Fulfilled	Concessionaire has represented that there is no foreign investment in this project and no foreign currency loans are proposed at this stage. In view of this no approval has been sought from RBI as none is required at this stage. We will seek approval of RBI if at all an external commercial borrowing is proposed in the future. Conditionally accepted, based on the rationale provided by the concessionaire. However, concessionaire shall have the responsibility of informing Authority and IE, and submitting required permits if foreign investments /foreign currency loan is proposed at any stage during concession period.
	ii) Approval for import of equipment and machinery for construction and operation, if required;	Fulfilled	Concessionaire has represented that separate request for specific approval shall be obtained as and when machinery is actually purchased. Accepted; subject to periodic verification of the same by IE.
	iii) Exemption of Excise Duty on construction materials, if required;	Fulfilled	The concessionaire has requested for exemption of Excise duty . Conditionally Accepted, subject to verification and certification of quantities & legitimacy by IE in due course.
10	**Department of Telecommunication**		
	i) Permission / clearance for setting up of wireless system, if required;	Fulfilled	Concessionaire has represented that they don't propose to use wireless system. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.
	ii) Clearance / permission for the use of optical fibre cables of Department of Telecommunication, if required;	Fulfilled	Concessionaire has represented that they don't propose to use optical fibre cables. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.

Source: Investment Manager

Appendix 3.20 – DMHTL: Summary of approval and licences (3/3)

Sr. No.	Approvals	Permit Status	Management Comments
11	**Electricity**		
	i) Permission required from State Electricity Board (SEB) and Consent from State Pollution Control Board for installation of Diesel Generator (DG);	Conditionally Fulfilled	Permission from State Pollution Control Board and Permission from State Electricity Board (SEB) is pending. Conditionally subject to submission of such permits to KRDCL before the installation of DG.
	ii) Permission for electrical connection, if power source is available;	Fulfilled	Concessionaire has proposed that they will be using DG set. Accepted subject to periodic verification by IE on actual ground conditions during construction.
12	**Sewage Lines and Water Mains**		
	i) Permission from local Municipalities and Development Authorities	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
13	Any other permits or clearances required under Applicable Laws	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.
14	Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority as a Condition Precedent.	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.

Source: Investment Manager

Appendix 3.21 – DHPTL: Summary of approval and licences (1/3)

I have been provided with the supplementary agreement entered with the Governor of Karnataka, which stated that all listed approvals therein are in place. It is to be noted that I was provided with only few documents (like NOC from Gram Panchayat for installation of crusher plant, mining of minor minerals establishment of camp and shed) to verify this permit status. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Sr. No.	Approvals	Permit Status	Comments
1	Permission for new quarries from Department of Mines and Geology, State Pollution Control Board, land conversion from State Revenue Department and District Administration. If mining area comes under forest land, permission from State Forest Department	Conditionally fulfilled	Concessionaire has identified two quarries for the project, i.e. (i) Hassan district (private quarry); (ii) Mysore district (government quarry). For Quarry 1 - Permission from Department of Mines & Geology and land conversion permission for development of quarry is pending with the District Commissioner. For Quarry 2 - Permission from Department of Mines & Geology for development of quarry is pending. Supporting documents so far received includes; Quarry 1 — NOC form the Village Panchayat, NOC obtained from the DCFO of Hassan. Quarry 2 — NOC from the Village Panchayat, NOC obtained from DCFO. Conditionally, accepted based on submission of all applicable permits to KRDCL before carrying out quarrying operations.
2	Permission of Village Panchayat and Pollution Control Board for and installation of crushers	Conditionally fulfilled	Concessionaire is installing new crushers in (i) Hassan district (private quarry); (ii) Mysore district (government quarry). Crusher 1 & 2 : Permission from PCB is pending. Supporting documents for crusher 1 & 2 includes: NOC from Village Panchayat. Conditionally accepted based on submission of all applicable permits to KRDCL before carrying out crushing operations.
3	License for use of explosive from the office of Explosives controller	Conditionally Fulfilled	Valid license to possess explosives is pending Supporting documents so far received includes; License to transport explosives and Licensee to carry out blasting operations. Conditionally accepted based on submission of all applicable permits to KRDCL before using explosives.
4	Permission for drawing water from bore well / pond / river from Village Panchayat / Irrigation Department as applicable	Conditionally Fulfilled	Permission for drawing water from bore well from Village Panchayat and agreement with private land owner to supply the water from his own borewell is pending. Conditionally fulfilled subject to submission of such permits to KRDCL before drawing of water from any bore well/ pond for the project.
5	License for Inspector of factories or other competent authority for setting up Batching Plant	Conditionally Fulfilled	Permission from PCB, Permission from Village Panchayat, and Permission from Dept of Factory and Boiler are pending. Conditionally fulfilled subject to submission of such permits to KRDCL before the operations of Batching Plants.
6	Consent for Establishment and Operation of Asphalt Plant, WMM Plant and Concrete Batching Plant from State Pollution Control Board	Conditionally Fulfilled	Permission from PCB and Village Panchayat is pending for establishment and operations of Asphalt plant, WMM Plant and Concrete Batching Plant. Conditionally fulfilled subject to submission of Village Panchayat permission to KRDCL before the operations of Asphalt plant and WMM plant.

Source: Investment Manager

Appendix 3.21 – DHPTL: Summary of approval and licences (2/3)

Sr. No.	Approvals	Permit Status	Comments
7	**Borrow Earth**		
	i) Permission required from Village Panchayat and owner of the land in case of private land;	Conditionally Fulfilled	Permission from Village Panchayat & Private land owner is pending. Alternatively, concessionaire has applied for permission to tahsildar for sand quarry from the nearby canal area. Conditionally accepted; subject to submission of applicable permits before using the borrow area.
	ii) Permission from Local Municipalities and Development Authorities;	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
8	Permission of State Forest Department for cutting of trees, if any	Fulfilled	Accepted; The same is responsibility of Authority subject to provision of clause 11.4 of CA.
9	**Ministry of Finance / RBI**		
	i) Approval for foreign investment and foreign loans, if required;	Fulfilled	Concessionaire has represented that there is no foreign investment in this project and no foreign currency loans are proposed at this stage. In view of this no approval has been sought from RBI as none is required at this stage. We will seek approval of RBI if at all an external commercial borrowing is proposed in the future. Conditionally accepted, based on the rationale provided by the concessionaire. However, concessionaire shall have the responsibility of informing Authority and IE, and submitting required permits if foreign investments /foreign currency loan is proposed at any stage during concession period.
	ii) Approval for import of equipment and machinery for construction and operation, if required;	Fulfilled	Concessionaire has represented that separate request for specific approval shall be obtained as and when machinery is actually purchased. Accepted; subject to periodic verification of the same by IE.
	iii) Exemption of Excise Duty on construction materials, if required;	Fulfilled	The concessionaire has requested for exemption of Excise duty . Conditionally Accepted, subject to verification and certification of quantities & legitimacy by IE in due course.
10	**Department of Telecommunication**		
	i) Permission / clearance for setting up of wireless system, if required;	Fulfilled	Concessionaire has represented that they don't propose to use wireless system. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.
	ii) Clearance / permission for the use of optical fibre cables of Department of Telecommunication, if required;	Fulfilled	Concessionaire has represented that they don't propose to use optical fibre cables. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.

Source: Investment Manager

Appendix 3.21 – DHPTL: Summary of approval and licences (3/3)

Sr. No.	Approvals	Permit Status	Comments
11	**Electricity**		
	i) Permission required from State Electricity Board (SEB) and Consent from State Pollution Control Board for installation of Diesel Generator (DG);	Conditionally Fulfilled	Permission from State Electricity Board (SEB) and Consent from State Pollution Control Board for installation of Diesel Generator is pending. Conditionally subject to submission of such permits to KRDCL before the installation of DG.
	ii) Permission for electrical connection, if power source is available;	Fulfilled	Concessionaire has proposed that they will be using DG set. Accepted subject to periodic verification by IE on actual ground conditions during construction.
12	**Sewage Lines and Water Mains**		
	i) Permission from local Municipalities and Development Authorities	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
13	Any other permits or clearances required under Applicable Laws	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.
14	Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority as a Condition Precedent.	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.

Source: Investment Manager

Appendix 3.22 – DHRTL: Summary of approval and licences (1/3)

I have been provided with the supplementary agreement entered with the Governor of Karnataka, which stated that all listed approvals therein are in place. It is to be noted that I was provided with only few documents (like NOC from Tehsildar, NOC from Gram Panchayat for installation of crusher plant, permission from KSPCB for construction of temporary camp and shed) to verify this permit status. However, SPV has received PCOD/COD and has also started receiving annuity payments.

Sr. No.	Approvals	Permit Status	Comments
1	Permission for new quarries from Department of Mines and Geology, State Pollution Control Board, land conversion from State Revenue Department and District Administration. If mining area comes under forest land, permission from State Forest Department	Conditionally fulfilled	Concessionaire has identified 3 quarries for the project, i.e. (i) Hirebudihal (government quarry); (ii) Hamsabhavi (private quarry); (iii) Kusagar (private quarry). Permission from Department of Mines & Geology and land conversion permission for development of quarry is pending with the District Commissioner. NOC form the Village Panchayat have been received, permission from PCB haveri has been received for Hamsabhavi quarry. Conditionally, accepted based on submission of all applicable permits to KRDCL before carrying out quarrying operations.
2	Permission of Village Panchayat and Pollution Control Board for and installation of crushers	Conditionally fulfilled	Concessionaire is installing new crusher and a mobile crusher near Hamsabhavi. Permission from PCB is pending. Supporting documents for crusher 1 & 2 includes: NOC from Village Panchayat. Conditionally accepted based on submission of all applicable permits to KRDCL before carrying out crushing operations.
3	License for use of explosive from the office of Explosives controller	Conditionally Fulfilled	Valid license to possess explosives, transport explosives and carry out blasting operations is pending. Conditionally accepted based on submission of all applicable permits to KRDCL before using explosives.
4	Permission for drawing water from bore well / pond / river from Village Panchayat / Irrigation Department as applicable	Fulfilled	Agreement with private land owner to supply the water from his own borewell is received.
5	License for Inspector of factories or other competent authority for setting up Batching Plant	Conditionally Fulfilled	Permission from PCB and Village Panchayat is received. Permission from Dept of Factory and Boiler is pending. Conditionally fulfilled subject to submission of such permits to KRDCL before the operations of Batching Plants.
6	Consent for Establishment and Operation of Asphalt Plant, WMM Plant and Concrete Batching Plant from State Pollution Control Board	Fulfilled	Permission from PCB and Village Panchayat for establishment and operations of Asphalt plant, WMM Plant and Concrete Batching Plant have been received.

Source: Investment Manager

Appendix 3.22 – DHRTL: Summary of approval and licences (2/3)

Sr. No.	Approvals	Permit Status	Comments
7	**Borrow Earth**		
	i) Permission required from Village Panchayat and owner of the land in case of private land;	Conditionally Fulfilled	Permission from Village Panchayat & Private land owner is pending. Alternatively, concessionaire has applied for permission to tahsildar for sand quarry from the nearby canal area. Conditionally accepted; subject to submission of applicable permits before using the borrow area.
	ii) Permission from Local Municipalities and Development Authorities;	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
8	Permission of State Forest Department for cutting of trees, if any	Fulfilled	Accepted; The same is responsibility of Authority subject to provision of clause 11.4 of CA.
9	**Ministry of Finance / RBI**		
	i) Approval for foreign investment and foreign loans, if required;	Fulfilled	Concessionaire has represented that there is no foreign investment in this project and no foreign currency loans are proposed at this stage. In view of this no approval has been sought from RBI as none is required at this stage. We will seek approval of RBI if at all an external commercial borrowing is proposed in the future. Conditionally accepted, based on the rationale provided by the concessionaire. However, concessionaire shall have the responsibility of informing Authority and IE, and submitting required permits if foreign investments /foreign currency loan is proposed at any stage during concession period.
	ii) Approval for import of equipment and machinery for construction and operation, if required;	Fulfilled	Concessionaire has represented that separate request for specific approval shall be obtained as and when machinery is actually purchased. Accepted; subject to periodic verification of the same by IE.
	iii) Exemption of Excise Duty on construction materials, if required;	Fulfilled	The concessionaire has requested for exemption of Excise duty . Conditionally Accepted, subject to verification and certification of quantities & legitimacy by IE in due course.
10	**Department of Telecommunication**		
	i) Permission / clearance for setting up of wireless system, if required;	Fulfilled	Concessionaire has represented that they don't propose to use wireless system. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.
	ii) Clearance / permission for the use of optical fibre cables of Department of Telecommunication, if required;	Fulfilled	Concessionaire has represented that they don't propose to use optical fibre cables. Hence, permission & clearance is not required. Accepted based on rationale provided by concessionaire. However, concessionaire shall have the sole responsibility of informing the Authority and submitting such permits if such systems are envisaged at any stage during concession period.

Source: Investment Manager

Appendix 3.22 – DHRTL: Summary of approval and licences (3/3)

Sr. No.	Approvals	Permit Status	Comments
11	**Electricity**		
	i) Permission required from State Electricity Board (SEB) and Consent from State Pollution Control Board for installation of Diesel Generator (DG);	Conditionally Fulfilled	Permission from State Pollution Control Board for installation of Diesel Generator is received. Permission from State Electricity Board (SEB) is pending. Conditionally subject to submission of such permits to KRDCL before the installation of DG.
	ii) Permission for electrical connection, if power source is available;	Fulfilled	Concessionaire has proposed that they will be using DG set. Accepted subject to periodic verification by IE on actual ground conditions during construction.
12	**Sewage Lines and Water Mains**		
	i) Permission from local Municipalities and Development Authorities	Fulfilled	Concessionaire has obtained permission from Taluk Executive Magistrate, Received from Office of Tahsildar, Arakalgud Taluk. Accepted based on rationale provided by concessionaire, but subject to periodic verification by IE.
13	Any other permits or clearances required under Applicable Laws	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.
14	Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority as a Condition Precedent.	Fulfilled	Accepted subject to periodic verification by IE on actual ground conditions during construction.

Source: Investment Manager

Appendix 3.23 – JDTL: Summary of approval and licences (1/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Other permits / clearances**			
	Temporary permit and environmental clearance for soil excavation - Awan	9-Mar-17	-	District Environment Impact Assessment Authority
	Temporary permit and environmental clearance for soil excavation - Ladpur	9-Mar-17	-	District Environment Impact Assessment Authority
	Temporary permit and environmental clearance for soil excavation - Pagara	15-Jun-17	-	District Environment Impact Assessment Authority
2	**Permission of State government for drawing water from river/reservoir**			
	Water Permission	10-Jun-16	09-Jun-18	Office of Executive Engineer, Water Resource Division, Raghogarh, Guna
3	**Clearing of Pollution control board for Stone Crusher, DLC, RMC**			
	Consent to Establish - setting up of industrial plant/activities at village Gader	3-Jun-16	2-Jun-21	M.P. Pollution Control Board - Guna
	Consent to operate - Stone Boulder	14-Feb-17	21-Apr-18	M.P. Pollution Control Board - Guna
	Consent to operate - RMC, Hot Mix, Stone Gitti, WMM	26-Sep-16	31-Jul-17	M.P. Pollution Control Board - Guna
4	**Permission of Village Panchayat and Pollution control board for installation of crushers, shed and camp**			
	NOC from Village Panchayat	16-Apr-16	-	Gram Panchayat - Khejda Kalan
	NOC from Village Panchayat	28-Jan-17	-	Gram Panchayat - Raghogarh
5	**Labour License**			
	Labour License (400 workers)	11-Jul-16	10-Jul-17	GOI, Ministry of Labour and Employment

Source: Investment Manager

Appendix 3.23 – JDTL: Summary of approval and licences (2/2)

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
6	**Permission of the State Government for extraction of boulders from quarry**			
	Approval for temporary excavation of stone	22-Apr-16	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Awan	20-Apr-17	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Borkheda	20-Apr-17	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Khejda	20-Apr-17	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Ladpur	20-Apr-17	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Pagara	16-Jun-17	-	Office of the Collector (Minerals), Guna District
	Temporary license for Stone/Ballast Excavation - Ramdi	16-Jun-17	-	Office of the Collector (Minerals), Guna District
	NOC for soil excavation	24-May-17	-	Office of the Collector (Minerals), Guna District
	NOC for soil excavation	26-Jan-17	-	Gram Panchayat, Awan
	NOC for stone quarrying	-	-	Gram Panchayat, Panj
	Transportation Permission of stone and soil - Raghogarh	26-Jan-17	-	Gram Panchayat - Raghogarh
	Transportation Permission of stone - Panj	26-Jan-17	-	Gram Panchayat - Panj
	Transportation Permission of stone - Hazratpur	3-May-17	2 months	Office of the Collector (Minerals), Guna District
	Transportation Permission of stone - Borkheda	24-May-17	2 months	Office of the Collector (Minerals), Guna District
	Transportation Permission of stone - Awan	13-Feb-17	2 months	Office of the Collector (Minerals), Guna District
	Transportation Permission of stone - Soti	13-Feb-17	2 months	Office of the Collector (Minerals), Guna District
	Transportation Permission of stone - Borkheda	30-Mar-17	2 months	Office of the Collector (Minerals), Guna District
	Transportation Permission of stone - Sujal Garh	22-Apr-17	2 months	Office of the Collector (Minerals), Guna District
7	**License for use of explosives**			
	Blasters certificate of competency to Rajbeer Singh restricting to mines having opencast workings only.	1-May-15	-	Board of Mining Examinations, govt. of India
	License is granted to M/s Pitambra Explosive which is valid for nitrate mixture, safety fuse, detonating fuse, detonators.	1-Jan-14	31-Mar-19	Petroleum and Explosives Safety Organisation, Govt. of India
	License is granted to M/s Pitambra Explosive which is valid for nitrate mixture, safety fuse, detonating fuse, detonators.	15-Jan-14	31-Mar-18	Petroleum and Explosives Safety Organisation, Govt. of India
	License is granted to M/s Pitambra Explosive which is valid for nitrate mixture, safety fuse, detonating fuse, detonators.	7-Apr-16	31-Mar-21	Petroleum and Explosives Safety Organisation, Govt. of India

Source: Investment Manager

Appendix 3.24 – SUIPL: Summary of approval and licences

Sr. No.	Approvals	Date of Issue	Validity	Issuing Authority
1	**Permission of state government for cutting of trees**			
	Permission for cutting tress for obstruction in the widening of the route	3-Jan-08	-	Additional Collector, Mansaur

Source: Investment Manager

Appendix 4A – Summary of Ongoing Litigations (1/2)

Sr. No	Matter	Against	Pending Before	Details of the case	Amount Involved (INR)
1	Kaminiben Tusharchandra Patel & Others	State of Gujarat, District Collector Saheb and Others (M/s DBL Nadiad-Modasa Toll ways Ltd.)	Principal Senior Civil Court, Gujrat	**Background of the case:** The plaintiff has filed a complaint in the Special Civil Court demanding compensation for the death of his husband during a road accident which was caused during the flood in a road accident citing the reason for the death to be poor condition of road on the highway. Plaintiff has also alleged negligence and deficiency on part of the District Administration and Authority in Engineer (NHAI) in construction of the concerned road thereby causing death of her husband. Subsequently the subsidiary was also impleaded as a party by application under O1 R10(2).The allegations are denied by the SPV as there is no cause of action. **Current Status:** The matter is currently pending for plantiff evidence.	83,09,000
2	Vibhor Kumar Sahu	Union of India and Others (Jalpadevi Toll ways Limited)	High Court, Gwalior	**Background of the case:** The PIL has been filed by the Petitioner for the purpose of pointing out the irregularity with respect to compulsory plantation on National Highways and on the ground that "No Groundwork/ plantation work has been executed by the concerned concessionaires on National Highway No. 44 And 46 (Old NH-3) between Dhoulpur/ Morena to Guna" by adhering to Guidelines for National Green Highway Policy, 2015 especially with respect to the median plantation but nothing beyond the said section of NH-46 has been questioned by the Petitioner. The petitioner has clearly pointed out that due to lack of plantation of trees and shrubs, there have been increased level of pollution in the area leading to deterioration of the environmental conditions.In the petition it was specially pointed out by the Petitioner that such Non-plantation is resulting into increase in pollution, accidents at the highway etc, which is a major cause of concern. The Jalpa Devi Tollways Ltd. (Respondent No. 9) is the concessionaire of the project National Highway No. 3 from Guna- Biaora Section and there lies no question against Respondent No. 9's work site and therefore no cause of action lies against Respondent No. 9. There is no interim order against the SPV. **Current Status:** The matter was last listed on 28 February 2020 and has not been listed thereafter due to Covid 19 and therefore the matter is currently pending.	Non - Quantifiable

Source: Investment Manager

Appendix 4A – Summary of Ongoing Litigations (2/2)

Sr. No	Matter	Against	Pending Before	Details of the case	Amount Involved (INR)
3	DBL Hassan Periyapatna Toll ways Limited	G K C Project Limited	Civil Judge	**Background of the case:** Plaintiff DBL filed the suit against the defendant restraining them from digging the road in the relevant change of scope of road construction. Temporary injunction granted and subsequently vacated by the court on the defendant filing and undertaking that it has not dug the road and it is ready to pay the damages if it does. The Respondents have submitted in their reply that they had entered into Agreement with KUWS & D Board, Hassan Division for the construction of the head tanks, providing and laying of raw water raising mains and pure water gravity mains and feeder mains in Hassan City, construction of 140 LL mother tank with allied works as required in the Agreement. Further it was submitted that the defendant is laying water pipes far away from the main road and has left space even for drainage. **Current Status:** The matter is currently pending for evidence. The next date of hearing is 5 March 2021.	Non - Quantifiable
4	M K Sheshegowda and Others	DBL Hassan Periyapatna Toll ways Limited	High Court	**Background of the case:** The petitioners have alleged that the Respondents were awarded with the project of Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hassan - Ramanathapura - Periyapatna National Highway in the State of Karnataka on DBFOMT on annuity basis and while the project was still not complete and the project facilities were not provided, the Respondents started collection of toll tax, alleging it to be contrary to law and contractual obligation of Respondents. The Project is an Annuity based project, and therefore no Toll fee as alleged by the petitioner is levied by the SPV at the said project. Further the Provisional Completion Certificate has already been awarded on the said project and substantial work at the project is already complete. Further it has been contended by the SPV that in accordance to the Concession Agreement the SPV had no rights to levy the Toll Fee or any other fee in any form by the users of the National Highway and to the limited information of the SPV, the Authority has contracted with another company to levy toll fee in the said project. **Current Status:** The matter is currently pending for reply.	Non - Quantifiable
5	Parsuram Uparkar	DBL Kalmath Zarap Highway Private Limited	High Court	**Background of the case:** The PIL has been filed by petitioner to alleged that the poor quality of work and material used in the construction of bridge in the district Sindhudurg on the Mumbai-Goa Highway NH-17 (New NH-66) and also alleged on the concessionaire for low work progress and violation of terms and conditions of concession agreement.The SPV has submitted that provisional completion certificate has already been issued by the Authority. All allegations are unsubstantiated and have been levelled merely for the sake of levelling them. **Current Status:** Reply has been submitted by R-8 for arguments and the matter is currently pending.	Non - Quantifiable

Source: Investment Manager

Appendix 4B – Summary of Arbitration Matters (1/3)

Sr. No	Matter	Against	Pending Before	Details of the case	Amount Involved (INR Million)
1	DBL Hassan Periyapatna Toll ways Limited	Karnataka Road Development Corporation Limited	Arbitration Panel	**Background of the case:** Notice of invoking Arbitration under clause 44.1.1 of the Concession Agreement dated 16 December 2015 was sent by the SPV on 17 September 2019 for adjudication of the dispute due to numerous/delays/omissions/breaches on part of Authority such as Authority's failure in handing over of encumbrance free ROW, delay in release of performance security, withholding of and deductions from annuity payments, withholding from lump sump payment, deduction of labour welfare fund from Annuity Payment, delay in payment of bonus, damages for occurrence of unusual floods, restoration charges of damages caused by external agencies for laying new utility and others losses were inflicted on the Concessionaire. **Current Status:** The Notice of Arbitration was served upon the Authority on 9 October 2020. Arbitration Team is not constituted and the due date for constitution is 6 March 2021.	890
2	DBL Hirekerur Ranibenur Toll ways Limited	Karnataka Road Development Corporation Limited	Arbitration Panel	**Background of the case:** Notice of invoking Arbitration under clause 44.1 of the Concession Agreement dated 16 December 2015 was sent by the SPV on 18 August 2020 for adjudication of the dispute due to numerous/delays/omissions/breaches on part of Authority such as Authority's failure in handing over of encumbrance free ROW, delay in release of performance security, withholding of and deductions from annuity payments, withholding from lump sump payment, deduction of labour welfare fund from Annuity Payment, delay in payment of bonus, damages for occurrence of unusual floods, restoration charges of damages caused by external agencies for laying new utility and others losses were inflicted on the Concessionaire. **Current Status:** The Notice of Arbitration was served upon the Authority on 19 September 2020.Arbitration Team is not constituted and the due date for constitution is 6 March 2021.	519
3	DBL Mundargi Harpanhalli Toll ways Limited	Karnataka Road Development Corporation Limited	Arbitration Panel	**Background of the case:** Notice of invoking Arbitration under clause 44.1 of the Concession Agreement dated 16 December 2015 was sent by the SPV on 18 August 2020 for adjudication of the dispute due to numerous/delays/omissions/breaches on part of Authority such as Authority's failure in handing over of encumbrance free ROW, delay in release of performance security, withholding of and deductions from annuity payments, withholding from lump sump payment, deduction of labour welfare fund from Annuity Payment, delay in payment of bonus, damages for occurrence of unusual floods, restoration charges of damages caused by external agencies for laying new utility and others losses were inflicted on the Concessionaire. **Current Status:** The Notice of Arbitration was served upon the Authority on 19 September 2020. Arbitration Team is not constituted and the due date for constitution is 6 March 2021.	406

Source: Investment Manager

Appendix 4B – Summary of Arbitration Matters (2/3)

Sr. No	Matter	Against	Pending Before	Details of the case	Amount Involved (INR Million)
4	DBL Lucknow-Sultanpur Highways Limited	National Highway Authority of India	Arbitration Panel	**Background of the case:** Notice of Dispute dated 23 June 2016 was sent by the SPV under clause 38.1 of the Concession Agreement dated 24 October 2016 and request to initiate the Conciliation procedure in accordance with the procedure laid down under clause 38.2 in respect of the claims due to delay in execution of Concession Agreement and declaration of Appointed Date, delay in fulfilment of conditions precedent, failure of Authority to provide encumbrance free ROW, delay in payment of Annuity, Bonus and Milestone payments, claim under change in law due to GST,claims due to Change of Scope and deductions from MPC's. **Current Status:** The Notice of Arbitration was served upon the Authority on 23 September 2020. Arbitration Team is not constituted and the due date has already lapsed. Further legal options are being explored.	1300
5	DBL Tuljapur-Ausa Highways Limited	National Highway Authority of India	Arbitration Panel	**Background of the case:** Notice of Dispute under Clause 38.1 of the Concession Agreement dated 01 May 2017 was sent by the SPV on 18 March 2020 and request to initiate the Conciliation procedure in accordance with the procedure laid down under Clause 38.2 for claims was made due to delay in execution of Concession Agreement and declaration of Appointed Date, failure of Authority to provide encumbrance free ROW, Payment of Annuity, Bonus and Milestone payments as per revised bid Project cost, delay in release of milestone payment, delay in release of bonus payment, arbitrary de-scoping of avenue plantation work, Change of Scope, Arbitrary deductions made from Annuity payments. **Current Status:** The Notice of Arbitration is yet to be served upon the Authority and the same is under process.	930
6	Jalpa Devi Toll ways Limited	National Highway Authority of India	Mediator/Conciliator	**Background of the case:** Notice of Dispute under Clause 44.1.1 of the Concession Agreement dated 21 September 2015 was sent by the SPV on 28 November 2020 and request to initiate the procedure in accordance with the procedure laid down under Clause 44.2 for claims was made due to delay in execution of Concession Agreement, delay in providing encumbrance free ROW, Change of Scope, Change in Law and imposition of GST. **Current Status:** The Notice of Conciliation is yet to be served upon the Authority and the same is under process.	720
7	Madhya Pradesh Road Development Corporation	M/s DBL Mundi-Sanawad Tollways Ltd.	District & Sessions Court Bhopal	**Background of the case:** MPRDC has claimed that there was an incorrect declaration of the appointed date by the SPV which resulted into revised payment of bonus and accordingly, damages under Clause. 4.2,10.3.2 and Clause 10.3.4, payment of damages due to non handing over of ROW i.e. claim for idling of resources. The Award was issued on 13 November 2015. Filed an application for Execution of Award in the District Court on 2 April 2016. **Current Status:** The proceedings are pending in the court and the next hearing date is 2 March 2021.	147

Source: Investment Manager

Appendix 4B – Summary of Arbitration Matters (3/3)

Sr. No	Matter	Against	Pending Before	Details of the case	Amount Involved (INR Million)
8	DBL Sitamau-Suwasara Tollways Ltd	Madhya Pradesh Road Development Corporation	District & Sessions Court Bhopal	**Background of the case:** The Claimant submitted its claim for the loss of revenue due to shifting of Toll Plaza from KM 19+600 to KM 4+500 KM and another claim on account of cost of construction of new Toll Plaza at the location KM 4+500KM. With regard to Claim 1, the Respondent submitted that the claim is overvalued and is not maintainable because the Respondent never stopped toll collection at KM 4+500.The issues in the Arbitration were as follows: 1) Whether the Claimant is entitled to decide the location of Toll Plaza as per Concession Agreement? 2) & 3) Whether the shifting of Toll Plaza, as envisaged by the Claimant, is permissible as per the provisions of Concession Agreement ? and whether the Claimant is entitled to shift the Toll Plaza from KM 4+500 to KM 19+600? In the light of the above issues, the Award by Arbitrators was issued on 20 March 2015 wherein the Arbitrator concluded that the claims submitted by the Claimant are baseless, on wrong assumptions, not supported by any conclusive documents and against the provisions of Concession Agreement and hence, all the claims are rejected except the avoidable expenditure incurred by the Claimant to some extent for construction of two Toll Plazas instead of one. Also, the Arbitrators allowed the Claimant to collect Toll for an extended period of 180 days over and above the period to which he is already entitled to collect but no clarified that no annuity shall be payable on account of extension in the period of Toll Collection. The Claimant not satisfied with the decision of the Arbitration filed an appeal to challenge the award in District Court on 17 June.2015. **Current Status:** The matter is currently pending and the next hearing date is 17 March 2021.	48
9	Madhya Pradesh Road Development Corporation	DBL Sitamau-Suwasara Tollways Ltd	District & Sessions Court Bhopal	**Background of the case:** With regards to the above mentioned stand taken by the Arbitrators wherein the Respondent (i.e. DBL Sitamau-Suwasara Tollways Ltd.) is entitled for compensation of cost of construction of new Toll and also for collection of Toll for the extended period of 180 days was challenged by the Petitioner (i.e. Madhya Pradesh Road Development Corporation) by an application. The Petitioner said that once the Learned Arbitral Tribunal accepted that the Respondent had no right to shift the Plaza then the cost of construction expanded by the Respondent became illegal and hence right to get compensation of illegal act is against the law of the land and public policy of India. Also the Petitioner said that as per the Concession Agreement, the extension of toll collection period can be provided only in case of any force majeure subsist and by which the Concessionaire is unable to collect the fee which is not the case in this plea. Hence award for extension of 180 days is against the provisions of Concession Agreement. Therefore, the Petitioner prayed that the portion of the award by which period of toll is extended by 180 days is liable to be quashed with cost throughout. **Current Status:** The matter is currently pending and the next hearing date is 17 March 2021.	Non - Quantifiable
10	Suryavanshi Infrastructure Pvt Ltd.	State of MP through its Chief Secretary and Others	Supreme Court of India	Data awaited	

Source: Investment Manager

Appendix 4C – Summary of Tax Assessments

The Investment Manager informed us that all the below open matters are pending at Assessing Officer level. None of the matters are pending at CIT (A), ITAT, High Court or Supreme Court level. The Investment Manager also informed us that as per SASHA, DBL would indemnify the SPVs against any financial losses suffered or incurred in connection with any pending or threatened claims against the SPVs for eight (8) years.

All the following Assessments have been initiated U/S 143(3) of the Income Tax Act, 1961 for the Assessment Year 2018-19:

Sr. No.	SPV Name	Current Status	Date of document
	Open Matters		
1	DBL Betul Sarni Tollways Limited	Reply u/s 142(1) submitted	13-Jan-21
2	DBL Hata-Dargawan Tollways Limited	Reply u/s 142(1) submitted	06-Feb-21
3	DBL Jaora-Sailana Tollways Limited	Reply u/s 142(1) submitted	19-Jan-21
4	DBL Mundi-Sanawad Tollways Limited	Reply u/s 142(1) submitted	19-Sep-20
5	DBL Sardarpur Badnawar Tollways Limited	Reply u/s 142(1) submitted	14-Oct-20
6	DBL Hirekerur Ranibennur Tollways Limited	Reply u/s 142(1) submitted	21-Jan-21
7	DBL Mundargi Harapanahalli Tollways Limited	Reply u/s 142(1) submitted	14-Jan-21
8	DBL Nadiad Modasa Tollways Limited	Notice u/s 142 (1) received. Reply pending (Due date: 10-Feb-21)	5-Feb-21
9	Jalpa Devi Tollways Limited	Reply u/s 142(1) submitted	27-Jan-21
10	DBL Kalmath Zarap Highways Limited	Reply u/s 142(1) submitted	23-Jan-21
11	DBL Lucknow Sultanpur Highways Limited	Furthur notice received u/s 142(1). Reply pending (Due date: 25-Feb-21)	10-Feb-21
12	DBL Tuljapur Ausa Highways Limited	Reply u/s 142(1) submitted	14-Dec-20
13	DBL Wardha Butibori Highways Private Limited	Reply u/s 142(1) submitted	19-Jan-21

Source: Investment Manager

ANNEXURE B

TECHNICAL REPORTS

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SHREM FINANCIAL PRIVATE LIMITED

Four Laning of Lucknow -Sultanpur Section of NH-56 (New NH-731) from Km.11.500(Design Chainage Km.11.500) to Km.134.700(Design Chainage Km.138.925) (Total Length-127.425 Km) in the State of Uttar Pradesh under NHDP Phase-IV on Hybrid Annuity Mode

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Laning of Lucknow -Sultanpur Section of NH-56 (New NH-731) from Km.11.500(Design Chainage Km.11.500) to Km.134.700(Design Chainage Km.138.925) (Total Length-127.425 Km) in the State of Uttar Pradesh under NHDP Phase-IV on Hybrid Annuity Mode

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Lucknow-Sultanpur	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL LUCKNOW-SULTHANPUR HIGHWAYS LTD** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL LUCKNOW-SULTHANPUR HIGHWAYS LTD., (herein after referred to as the "**Concessionaire"**), had augmented the existing two-lane road Section of NH 361 from Lucknow to Sulthanpur in the state of Uttar Pradesh, in accordance with the provisions of the Concession Agreement (**CA**) executed with **National Highways Authority of India** (herein after referred to as the "**Authority**") on 24.10.2016.

Project road starts at Km. 11+500 located near Lucknow and ends at Km. 134+700 near Sulthanpur on NH-56. The design length of the Project is 127.425 Km. The Project Highway passes through the urban stretches of Khuradi Bazar, Gangaganj, Haidergarh, Jagadeeshpur and Islamganj located along the Project Corridor. Project location map is provided at **Figure 1.1.**

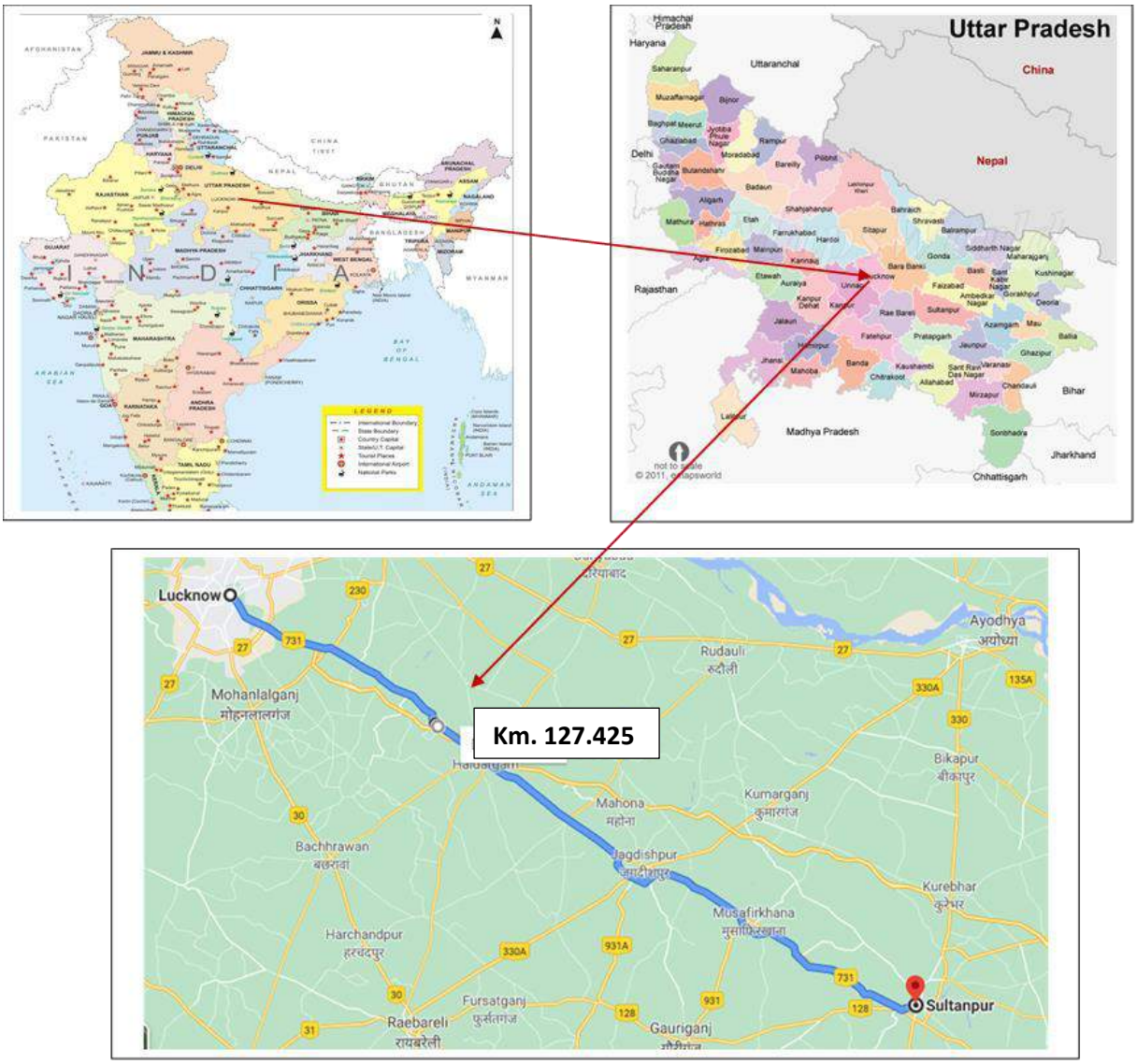

Figure 1.1: Project Locations Map

SHREM INFRAVENTURE PRIVATE LIMITED (SIPL) acquired DBL LUCKNOW-SULTANPUR HIGHWAYS LTD vide agreement dated 26/03/2018.

SHREM FINANCIAL PVT. LTD (SFPL). appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Four Lanning of Lucknow-Sultanpur section of NH-56(New NH-731) from Km. 11+500 (Design Chainage Km. 11+500) to Km. 134+700 (Design Chainage Km. 138+925) (Total Length-127.425 Kms.) in the State of Uttar Pradesh under NHDP, Phase –IV on Hybrid Annuity Mode.
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	DBL Lucknow-Sulthanpur Highways Ltd.,
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	09.08.2016
7	Date of Agreement	24.10.2016
8	Design Length as per Schedule B of CA	127.425 Kms.
9	Project Lane Configuration	Four Lane
10	EPC Cost	1780 Cr.
11	Bid Project Cost	2016
12	Nature of contract	Hybrid Annuity Mode
13	Toll collected by	Authority
14	Operation Period	15 years from the Commercial Operation Date (COD)
15	Appointed date	08.05.2017
16	Concession End Date	29.04.2034
17	Construction Period	910 days from the Appointed Date
18	Schedule Completion Date	04.11.2019
19	Date of issuance of Provisional Certificate (COD)	30.04.2019
20	Bonus on early completion	Applicable as per Cl.23.5 of the CA
21	Date of issuance of Completion Certificate	03.07.2019
22	Annuity Amount	As per Clause 23.6 of the CA
23	Total Number of Annuities payable after COD	30 Nos.
24	First Annuity Payment Date	30.10.2019
25	Total Number of Annuity Payments received as on date.	3 No.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per Schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table 2.1.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of the Project Highway	127.425 Kms.	---	127.425 Kms.
2	Total Length of Main Carriageway with Rigid Pavement	121.105 Kms.	6.32 Kms.	127.425 Kms.
3	Total Length of Main Carriageway with Flexible Pavement	6.320 Kms.	-6.320 Kms.	---
4	Total length of Service Roads	---	---	---
5	Total length of Slip Roads	14.824 Kms.	---	14.824 Kms.
6	Toll Plazas	2 Nos.	---	2 Nos.
7	Bus Bays with Bus Shelters	43 Nos.	---	43 Nos.
8	Truck Lay Bays	2 Nos.	---	2 Nos.
9	Major Junctions	18 Nos.	---	20 Nos.*
10	Minor Junctions	109 Nos.	---	110 Nos.*
11	ROBs	1 No.	---	1 No.
12	Vehicular underpasses	4 Nos.	---	4 Nos.
13	Pedestrian underpasses	6 Nos.	---	6 Nos.
14	Major Bridges	1 No.	---	1 No.
15	Minor Bridges	13 Nos.	---	13 Nos.
16	Hume Pipe Culverts	182 Nos.	---	184 Nos.*
17	Box / Slab Culverts	77 Nos.	---	75 Nos.*

*As per site requirement, 2 Major junctions and 1 minor junction is developed.
As per site requirement, 2 additional pipe culverts are constructed and 2 Slab culverts are not constructed as per site condition.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

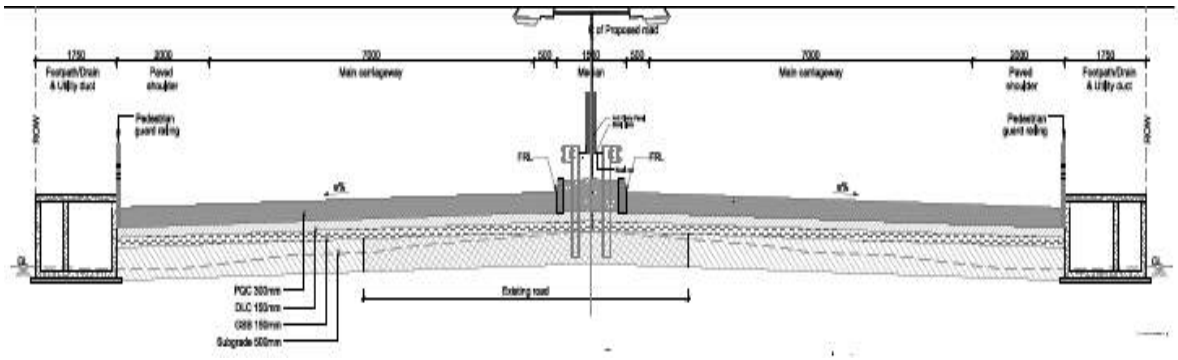

Figure 2.1: TCS-1 4-lane road without service road including foot path drain and utility duct

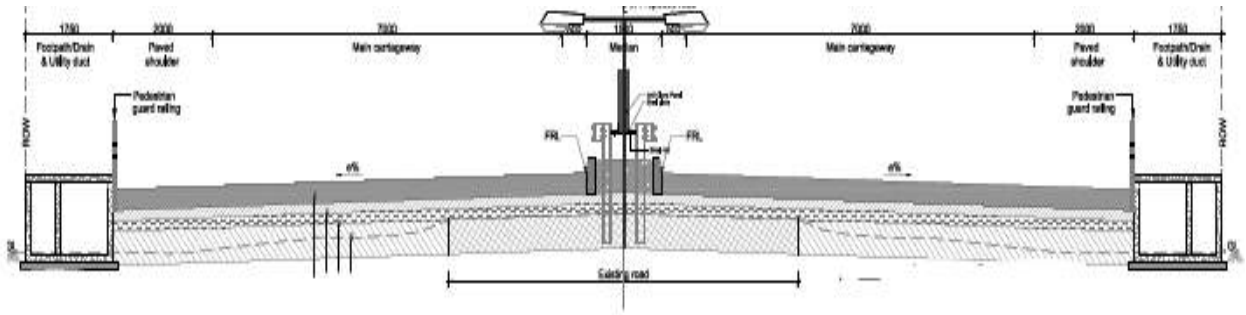

Figure 2.2: TCS-1A 4-lane road without service road including foot path drain and utility duct concentric widening

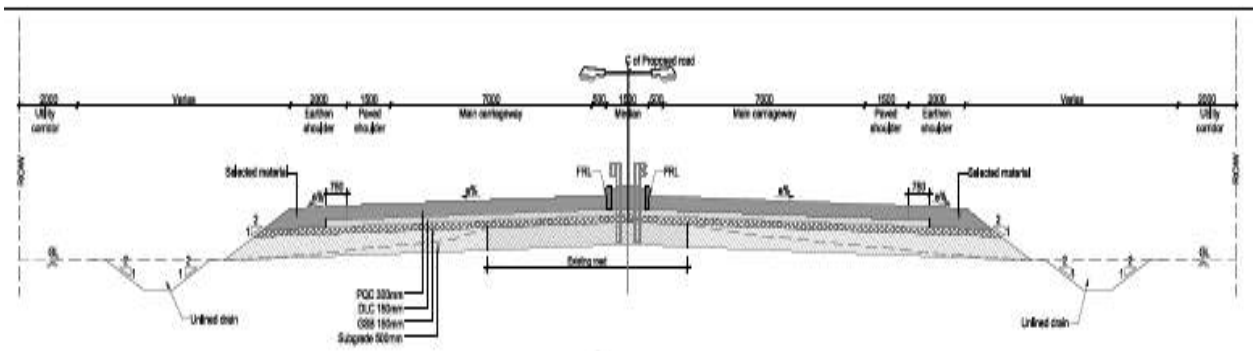

Figure 2.3: TCS-2 4-lane road with rigid pavement both side

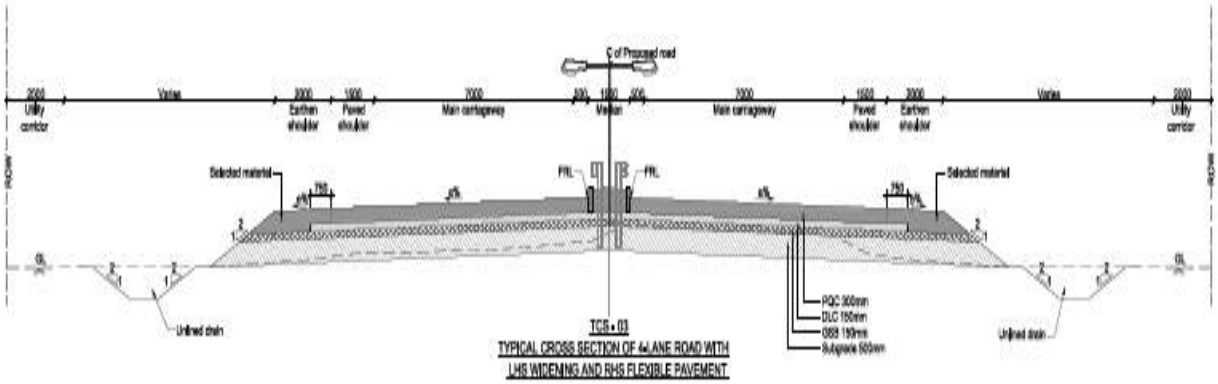

Figure 2.4: TCS-3 4-lane road with LHS widening and RHS flexible pavement

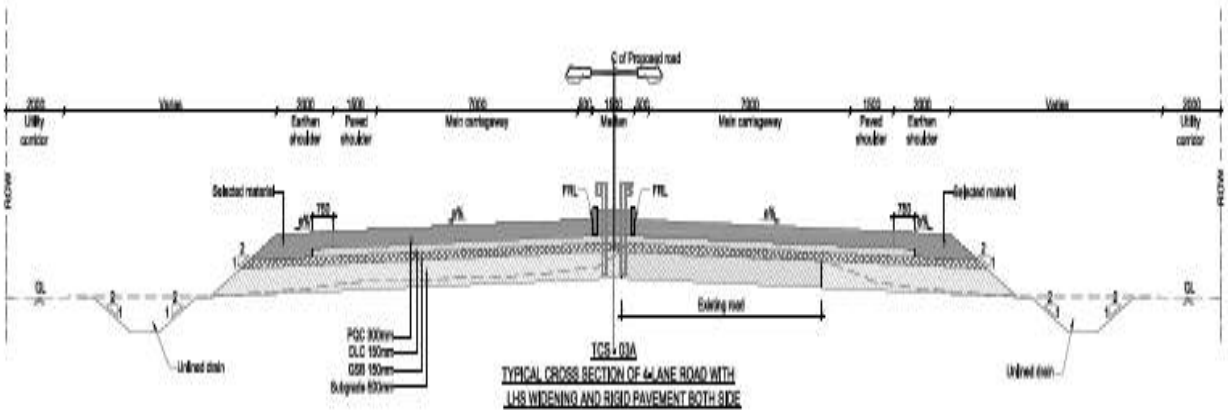

Figure 2.5: TCS-3A 4-lane road with concentric widening and rigid pavement both side

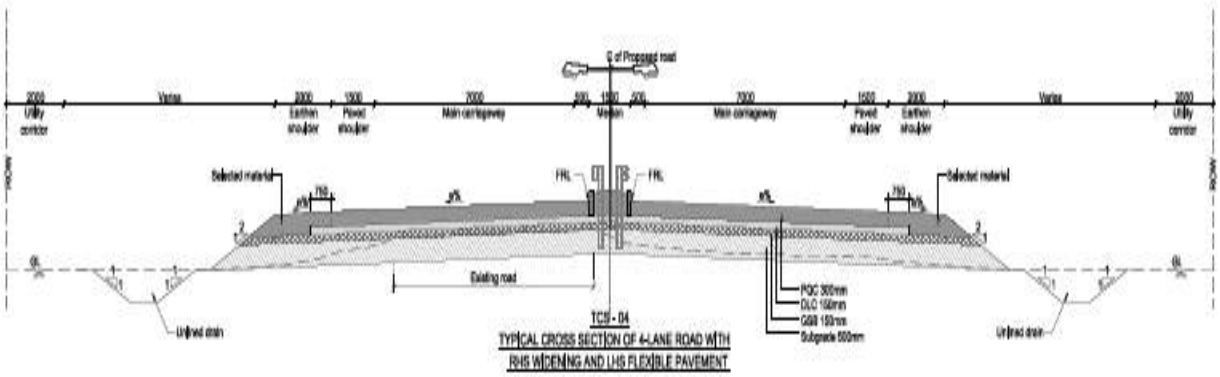

Figure 2.6: TCS-4 4-lane road with concentric widening and rigid pavement both side

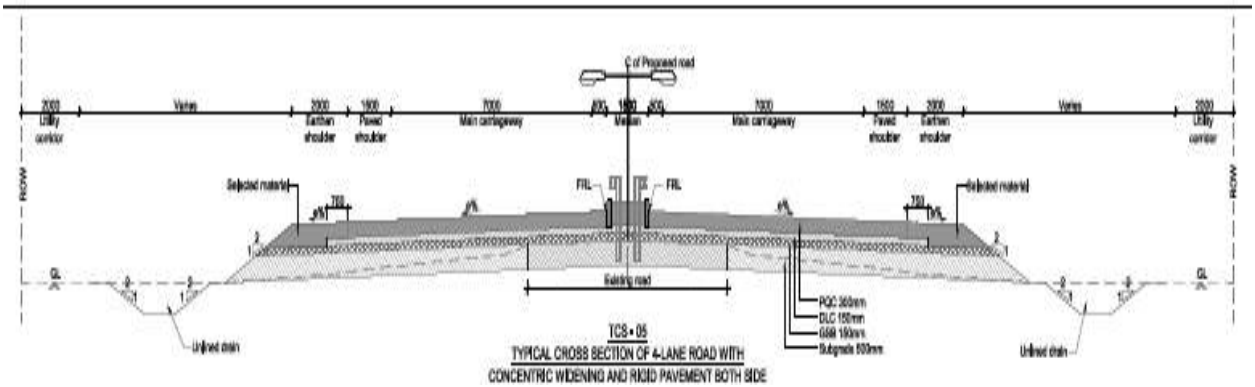

Figure 2.7: TCS-5 4-lane road for new construction with rigid pavement both side

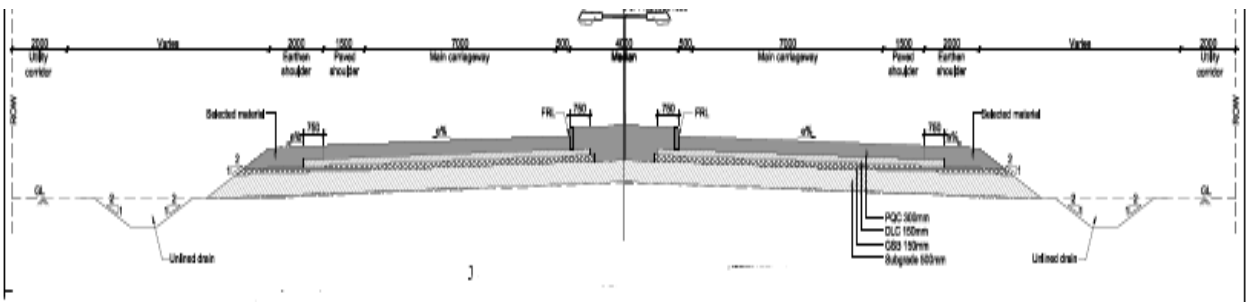

Figure 2.8: TCS-6 4-lane road for new construction with rigid pavement both side

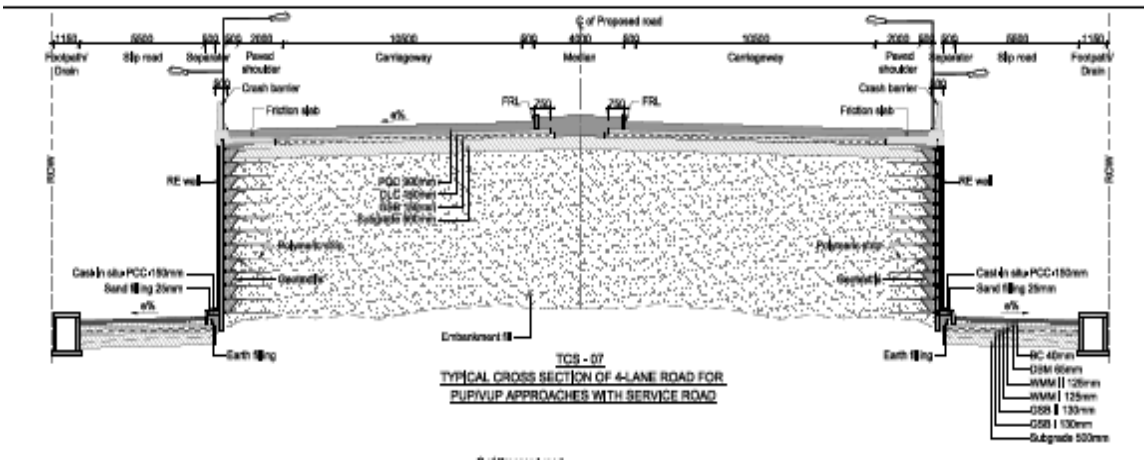

Figure 2.9: TCS-7 4-lane road for PUP/VUP approaches with service road

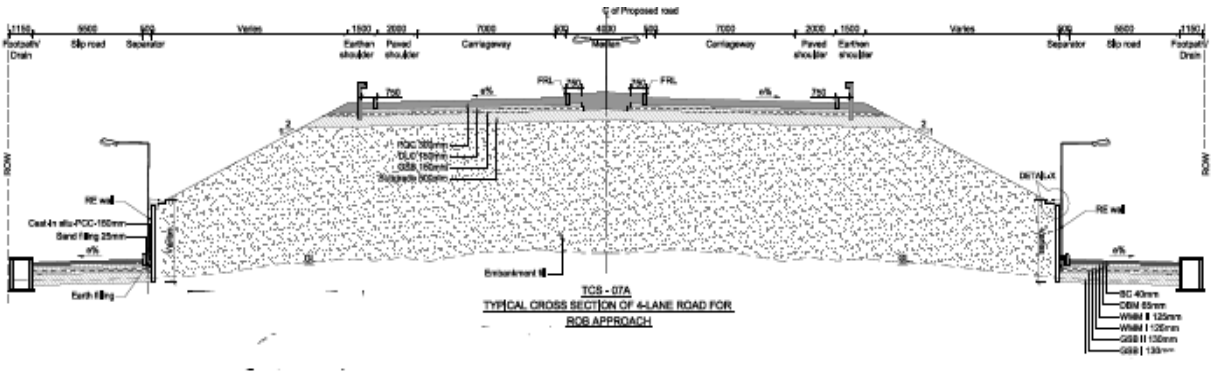

Figure 2.10: TCS-7A 4-lane road for ROB Approach

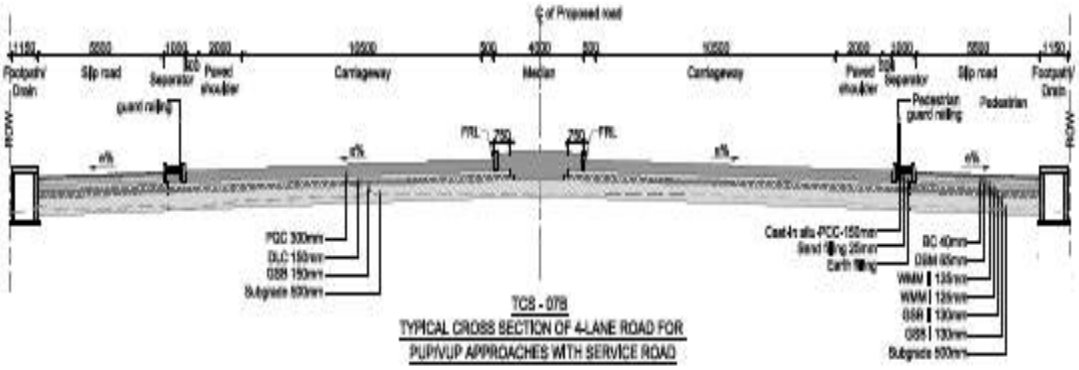

Figure 2.11: TCS-7B 4-lane road for PUP/VUP approaches with service road

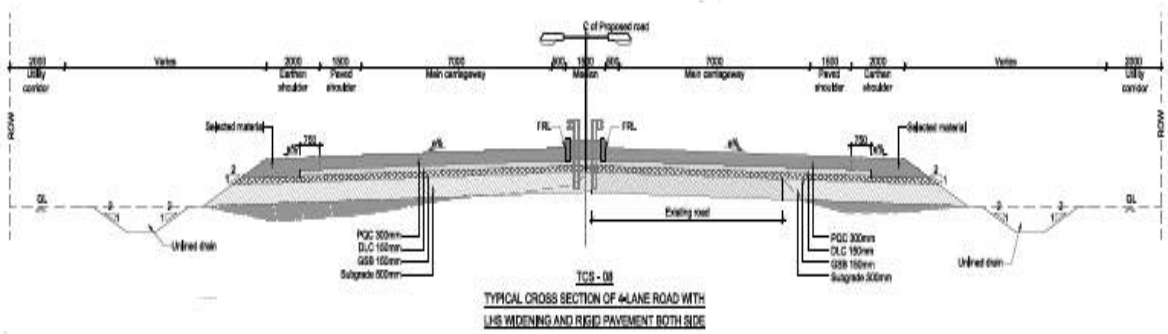

Figure 2.12: TCS-8 4-lane road with LHS widening and rigid pavement both side

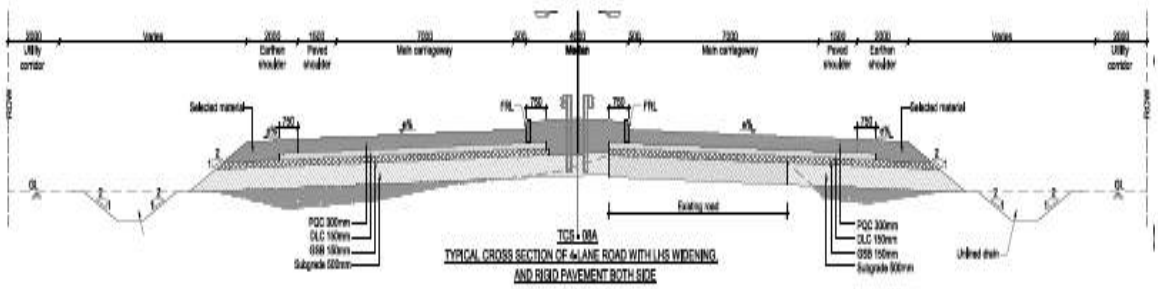

Figure 2.13: TCS-8A 4-lane road with LHS widening and rigid pavement both side

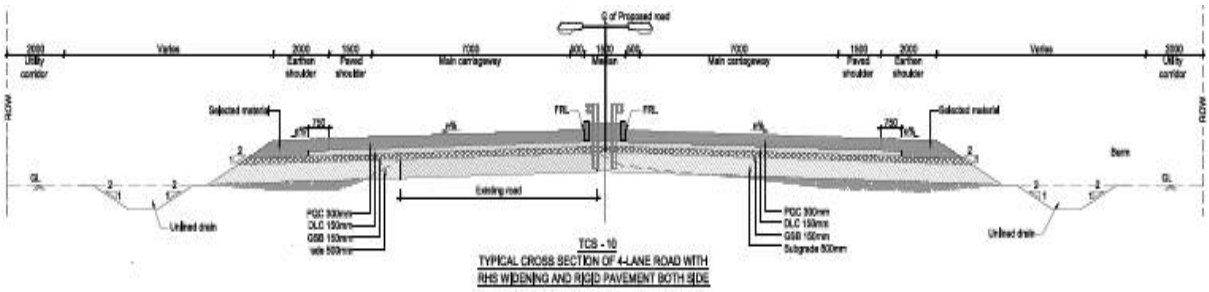

Figure 2.14: TCS-10 4-lane road with RHS widening and rigid pavement both side

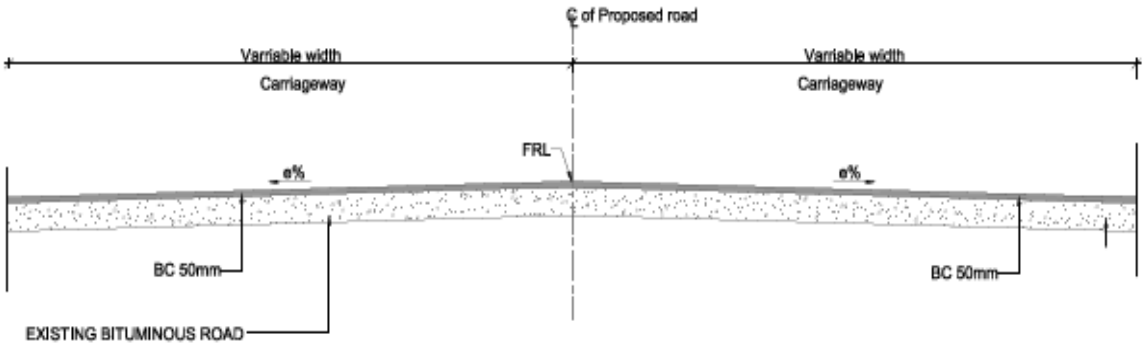

Figure 2.15: TCS-2A 4-lane road for Ahimamau portion

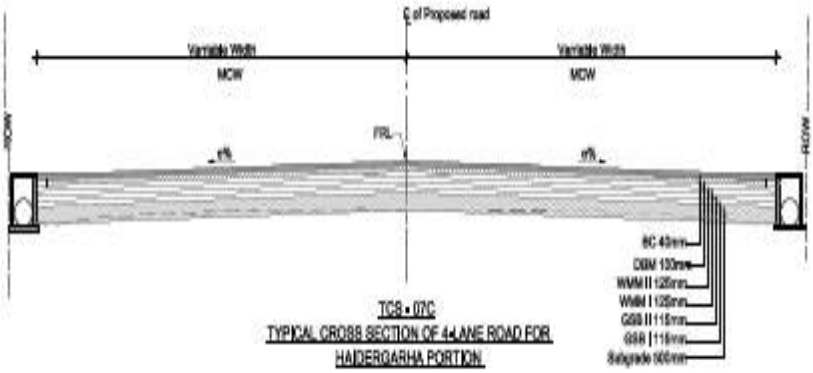

Figure 2.16: TCS-7C 4-lane road for Haidergarha portion

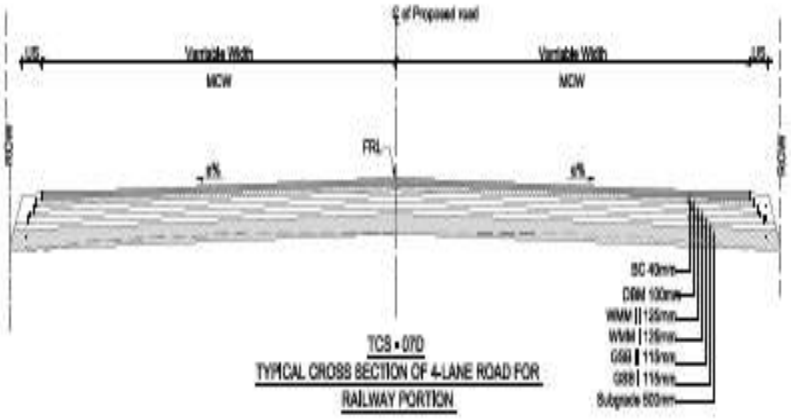

Figure 2.17: TCS-7D 4-Lane Road for Railway Portion

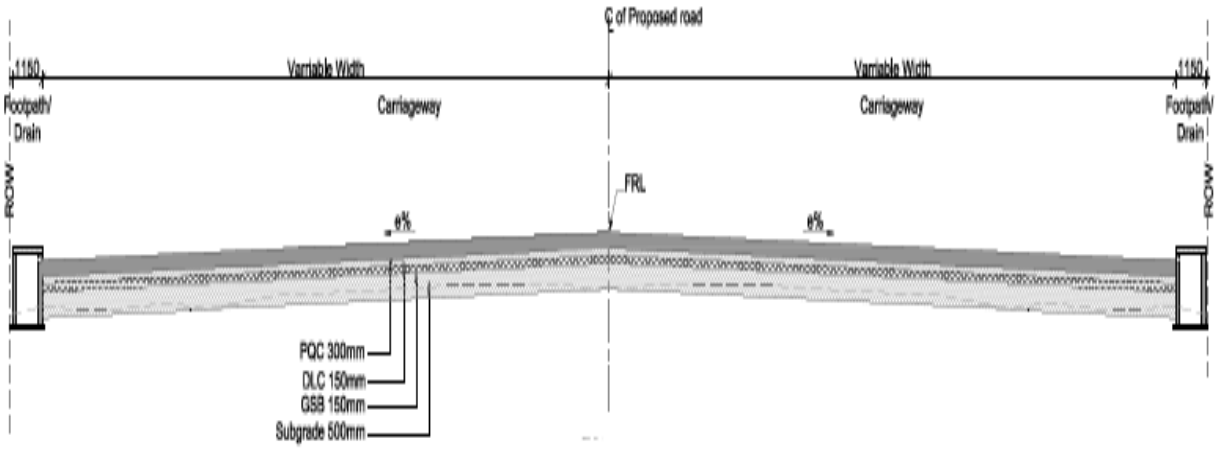

Figure 2.18: TCS-11 4-lane road for toll plaza portion

TCS Schedule is provided below.

Table 2.2: TCS Schedule

RHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
1	11+500	11+584	84	2A
2	11+584	11+900	316	1
3	11+900	12+500	600	1
4	12+500	12+720	220	3
5	12+720	13+000	280	4
6	13+000	14+420	1420	5
7	14+420	14+590	170	2
8	14+590	15+520	930	1
9	15+520	15+760	240	1
10	15+760	15+950	190	1
11	15+950	16+210	260	1
12	16+210	16+960	750	5
13	16+960	17+650	690	6
14	17+650	17+820	170	1
15	17+820	18+050	230	1
16	18+050	18+650	600	1
17	18+650	19+900	1250	5
18	19+900	20+150	250	3
19	20+150	20+550	400	5
20	20+550	20+750	200	3
21	20+750	21+200	450	3
22	21+200	21+450	250	3
23	21+450	24+560	3110	1
24	24+560	24+860	300	2
25	24+860	25+200	340	5
26	25+200	26+350	1150	2
27	26+350	27+030	680	3
28	27+030	27+410	380	4
29	27+410	28+450	1040	1
30	28+450	28+600	150	4
31	28+600	29+150	550	5
32	29+150	29+470	320	1
33	29+470	30+200	730	5
34	30+200	30+500	300	2
35	30+500	30+750	250	5
36	30+750	30+900	150	8
37	30+900	31+450	550	5
38	31+450	31+650	200	8A

LHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
1	11+500	11+584	84	2A
2	11+584	11+900	316	1
3	11+900	12+500	600	1
4	12+500	12+720	220	3
5	12+720	13+000	280	4
6	13+000	14+420	1420	5
7	14+420	14+590	170	2
8	14+590	15+520	930	1
9	15+520	15+760	240	1
10	15+760	15+950	190	1
11	15+950	16+210	260	1
12	16+210	16+960	750	5
13	16+960	17+650	690	6
14	17+650	17+820	170	1
15	17+820	18+050	230	1
16	18+050	18+650	600	1
17	18+650	19+900	1250	5
18	19+900	20+150	250	3
19	20+150	20+550	400	5
20	20+550	20+750	200	3
21	20+750	21+200	450	3
22	21+200	21+450	250	3
23	21+450	24+560	3110	1
24	24+560	24+860	300	2
25	24+860	25+200	340	5
26	25+200	26+350	1150	2
27	26+350	27+030	680	3
28	27+030	27+410	380	4
29	27+410	28+450	1040	1
30	28+450	28+600	150	4
31	28+600	29+150	550	5
32	29+150	29+470	320	1
33	29+470	30+200	730	5
34	30+200	30+500	300	2
35	30+500	30+750	250	5
36	30+750	30+900	150	8
37	30+900	31+450	550	5
38	31+450	31+650	200	8A

RHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
39	31+650	31+850	200	6
40	31+850	32+200	350	2
41	32+200	32+480	280	10
42	32+480	32+680	200	2
43	32+680	33+250	570	1
44	33+250	33+430	180	1
45	33+430	33+730	300	1A
46	33+730	34+040	310	8
47	34+040	34+270	230	5
48	34+270	34+450	180	8
49	34+450	35+100	650	5
50	35+100	36+300	1200	6
51	36+300	36+900	600	5
52	36+900	37+150	250	8
53	37+150	37+550	400	5
54	37+550	37+850	300	8
55	37+850	38+000	150	2
56	38+000	38+250	250	5
57	38+250	38+550	300	2
58	38+550	39+800	1250	1
59	39+800	41+350	1550	5
60	41+350	43+210	1860	6
61	43+210	43+700	490	7A
62	43+700	43+800	100	7A
63	43+800	44+270	470	7A
64	44+270	45+620	1350	6
65	45+620	46+275	655	3A
66	46+275	46+500	225	5
67	46+500	46+900	400	1
68	46+900	47+230	330	2
69	47+230	47+700	470	5
70	47+700	47+880	180	8
71	47+880	48+050	170	10
72	48+050	48+270	220	5
73	48+270	49+390	1120	1
74	49+390	49+650	260	2
75	49+650	50+275	625	5
76	50+275	50+800	525	5
77	50+800	51+380	580	11
78	51+380	52+280	900	5

LHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
39	31+650	31+850	200	6
40	31+850	32+200	350	2
41	32+200	32+480	280	10
42	32+480	32+680	200	2
43	32+680	33+250	570	1
44	33+250	33+430	180	1
45	33+430	33+490	60	1A
46	33+490	33+540	50	1A
47	33+540	33+730	190	1A
48	33+730	34+040	310	8
49	34+040	34+270	230	5
50	34+270	34+450	180	8
51	34+450	35+100	650	5
52	35+100	36+300	1200	6
53	36+300	36+900	600	5
54	36+900	37+150	250	8
55	37+150	37+550	400	5
56	37+550	37+850	300	8
57	37+850	38+000	150	2
58	38+000	38+250	250	5
59	38+250	38+550	300	2
60	38+550	39+800	1250	1
61	39+800	41+350	1550	5
62	41+350	43+210	1860	6
63	43+210	43+700	490	7A
64	43+700	43+800	100	7A
65	43+800	44+270	470	7A
66	44+270	45+620	1350	6
67	45+620	46+275	655	3A
68	46+275	46+500	225	5
69	46+500	46+900	400	1
70	46+900	47+230	330	2
71	47+230	47+700	470	5
72	47+700	47+880	180	8
73	47+880	48+050	170	10
74	48+050	48+270	220	5
75	48+270	49+400	1130	1
76	49+400	49+650	250	2
77	49+650	50+275	625	5
78	50+275	50+800	525	5

RHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
79	52+280	52+600	320	5
80	52+600	52+900	300	2
81	52+900	53+640	740	5
82	53+640	53+850	210	1
83	53+850	54+300	450	1
84	54+300	54+834	534	1
85	54+834	54+881	47	7C
86	54+881	55+400	519	1
87	55+400	55+580	180	1
88	55+580	56+200	620	1
89	56+200	56+340	140	1A
90	56+340	56+360	20	1A
91	56+360	56+550	190	1A
92	56+550	56+900	350	10
93	56+900	57+150	250	2
94	57+150	57+475	325	5
95	57+475	59+450	1975	5
96	59+450	59+720	270	1A
97	59+720	60+550	830	5
98	60+550	60+700	150	10
99	60+700	60+890	190	8
100	60+890	61+300	410	2
101	61+300	61+420	120	2
102	61+420	61+690	270	5
103	61+690	61+910	220	8
104	61+910	62+630	720	5
105	62+630	63+200	570	10
106	63+200	63+500	300	1
107	63+500	63+530	30	2
108	63+530	63+750	220	5
109	63+750	63+900	150	10
110	63+900	64+950	1050	5
111	64+950	65+270	320	2
112	65+270	65+500	230	8
113	65+500	65+850	350	5
114	65+850	66+250	400	2
115	66+250	66+920	670	5
116	66+920	67+850	930	10
117	67+850	68+650	800	8
118	68+650	68+850	200	5

LHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
79	50+800	51+380	580	11
80	51+380	52+280	900	5
81	52+280	52+600	320	5
82	52+600	52+900	300	2
83	52+900	53+640	740	5
84	53+640	53+850	210	1
85	53+850	54+300	450	1
86	54+300	54+835	535	1
87	54+835	54+879	44	7C
88	54+879	55+400	521	1
89	55+400	55+580	180	1
90	55+580	56+200	620	1
91	56+200	56+340	140	1A
92	56+340	56+360	20	1A
93	56+360	56+550	190	1A
94	56+550	56+900	350	10
95	56+900	57+150	250	2
96	57+150	57+475	325	5
97	57+475	59+450	1975	5
98	59+450	59+720	270	1A
99	59+720	60+550	830	5
100	60+550	60+700	150	10
101	60+700	60+890	190	8
102	60+890	61+300	410	2
103	61+300	61+420	120	2
104	61+420	61+690	270	5
105	61+690	61+910	220	8
106	61+910	62+630	720	5
107	62+630	63+200	570	10
108	63+200	63+500	300	1
109	63+500	63+530	30	2
110	63+530	63+750	220	5
111	63+750	63+900	150	10
112	63+900	64+950	1050	5
113	64+950	65+270	320	2
114	65+270	65+500	230	8
115	65+500	65+850	350	5
116	65+850	66+250	400	2
117	66+250	66+920	670	5
118	66+920	67+850	930	10

RHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
119	68+850	69+250	400	8
120	69+250	70+520	1270	5
121	70+520	72+510	1990	1A
122	72+510	73+150	640	5
123	73+150	75+600	2450	2
124	75+600	77+350	1750	1A
125	77+350	78+000	650	1
126	78+000	79+060	1060	1
127	79+060	79+100	40	7D
128	79+100	80+300	1200	1
129	80+300	80+750	450	1A
130	80+750	81+400	650	1
131	81+400	85+750	4350	6
132	85+750	86+550	800	7
133	86+550	93+150	6600	6
134	93+150	93+740	590	7
135	93+740	96+830	3090	6
136	96+830	97+400	570	7
137	97+400	99+460	2060	6
138	99+460	100+030	570	7
139	100+030	100+125	95	6
140	100+125	101+150	1025	10
141	101+150	101+940	790	1
142	101+940	102+750	810	1A
143	102+750	104+360	1610	2
144	104+360	104+800	440	1A
145	104+800	106+750	1950	5
146	106+750	107+850	1100	6
147	107+850	108+420	570	7
148	108+420	111+550	3130	6
149	111+550	112+250	700	7
150	112+250	113+800	1550	6
151	113+800	114+020	220	2
152	114+020	115+957	1937	1
153	115+957	116+720	763	1
154	116+720	116+807	87	2
155	116+807	118+107	1300	5
156	118+107	118+895	788	6
157	118+895	119+570	675	7
158	119+570	119+840	270	7B

LHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
119	67+850	68+650	800	8
120	68+650	68+850	200	5
121	68+850	69+250	400	8
122	69+250	70+520	1270	5
123	70+520	72+510	1990	1A
124	72+510	73+150	640	5
125	73+150	75+600	2450	2
126	75+600	77+350	1750	1A
127	77+350	78+000	650	1
128	78+000	79+060	1060	1
129	79+060	79+100	40	7D
130	79+100	80+300	1200	1
131	80+300	81+400	1100	1
132	81+400	85+750	4350	6
133	85+750	86+540	790	7
134	86+540	93+170	6630	6
135	93+170	93+720	550	7
136	93+720	96+830	3110	6
137	96+830	97+390	560	7
138	97+390	99+460	2070	6
139	99+460	99+870	410	7
140	99+870	100+030	160	7
141	100+030	100+125	95	6
142	100+125	101+150	1025	10
143	101+150	101+940	790	1
144	101+940	102+750	810	1A
145	102+750	104+360	1610	2
146	104+360	104+800	440	1A
147	104+800	106+750	1950	5
148	106+750	107+850	1100	6
149	107+850	108+420	570	7
150	108+420	111+550	3130	6
151	111+550	112+250	700	7
152	112+250	113+800	1550	6
153	113+800	114+020	220	2
154	114+020	115+957	1937	1
155	115+957	116+720	763	1
156	116+720	116+807	87	2
157	116+807	118+107	1300	5
158	118+107	118+890	783	6

RHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
159	119+840	120+400	560	7
160	120+400	121+460	1060	6
161	121+460	122+060	600	7
162	122+060	123+383	1323	6
163	123+383	123+633	250	8
164	123+633	125+330	1697	10
165	125+330	126+033	703	5
166	126+033	126+283	250	8
167	126+283	126+783	500	10
168	126+783	127+100	317	5
169	127+100	127+680	580	11
170	127+680	128+133	453	5
171	128+133	128+445	312	10
172	128+445	129+200	755	5
173	129+200	129+500	300	2
174	129+500	131+950	2450	1
175	131+950	132+050	100	10
176	132+050	132+500	450	6
177	132+500	133+060	560	7
178	133+060	133+800	740	6
179	133+800	134+376	576	1
180	134+376	134+810	434	1
181	134+810	135+600	790	1
182	135+600	135+720	120	1
183	135+720	137+020	1300	5
184	137+020	137+550	530	1
185	137+550	138+880	1330	1
186	138+880	138+925	45	1

LHS				
S. No.	From (Km.)	To (Km.)	Length (m)	TCS
159	118+890	119+570	680	7
160	119+570	119+840	270	7B
161	119+840	120+400	560	7
162	120+400	121+460	1060	6
163	121+460	122+050	590	7
164	122+050	123+383	1333	6
165	123+383	123+633	250	8
166	123+633	125+330	1697	10
167	125+330	126+033	703	5
168	126+033	126+283	250	8
169	126+283	126+783	500	10
170	126+783	127+100	317	5
171	127+100	127+680	580	11
172	127+680	128+133	453	5
173	128+133	128+445	312	10
174	128+445	129+200	755	5
175	129+200	129+500	300	2
176	129+500	131+950	2450	1
177	131+950	132+050	100	10
178	132+050	132+500	450	6
179	132+500	133+060	560	7
180	133+060	133+800	740	6
181	133+800	134+170	370	1
182	134+170	134+400	230	1
183	134+400	134+810	410	1
184	134+810	135+600	790	1
185	135+600	135+720	120	1
186	135+720	137+020	1300	5
187	137+020	137+550	530	1
188	137+550	138+880	1330	1
189	138+880	138+925	45	1

Table 2.3: TCS wise summary

TCS TYPE	RHS (Kms.)	LHS (Kms.)	Total Length (Kms.) =(RHS+LHS)/2
TCS 1	27.664	28.127	27.896
TCS 1A	6.360	5.910	6.135
TCS 2	10.007	9.997	10.002
TCS 3	2.050	2.050	2.050
TCS 3A	0.655	0.655	0.655
TCS 4	0.810	0.810	0.810

TCS TYPE	RHS (Kms.)	LHS (Kms.)	Total Length (Kms.) =(RHS+LHS)/2
TCS 5	29.243	29.243	29.243
TCS 6	31.636	31.701	31.669
TCS 7	6.195	6.130	6.163
TCS 7A	1.060	1.060	1.060
TCS 7B	0.270	0.270	0.270
TCS 8	3.710	3.710	3.710
TCS 8A	0.200	0.200	0.200
TCS 10	6.234	6.234	6.234
TCS 2A	0.084	0.084	0.084
TCS 7C	0.047	0.044	0.046
TCS 7D	0.040	0.040	0.040
TCS 11	1.160	1.160	1.160
TOTAL	**127.425**	**127.425**	**127.425**

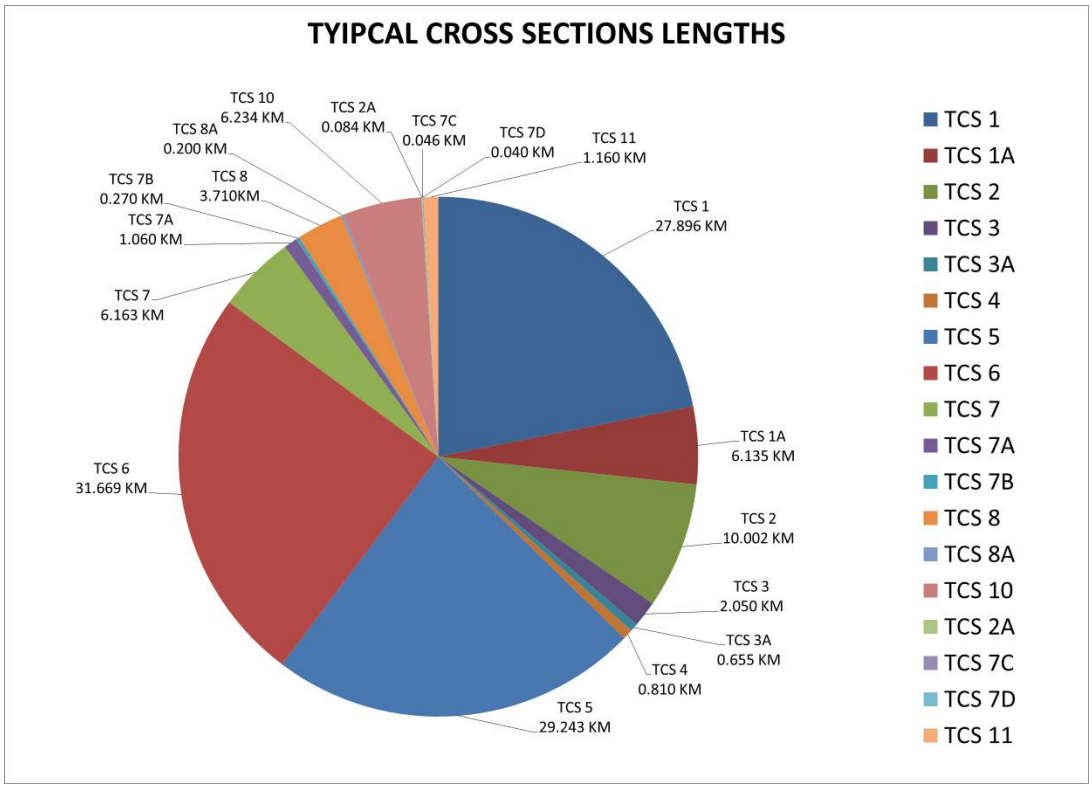

Figure 2.19: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are constructed in open and rural areas.

2.4 Service Roads

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the Concession Agreement. The details are provided below.

Table 2.4: List of Slip Road locations

S. No.	From (Km.)	To (Km.)	Side	Length (Kms.)
1	43+0400	44+3400	Both Sides	2.600
2	85+7000	86+5000	Both Sides	1.600
3	93+6800	94+1600	Both Sides	0.960
4	96+8200	97+4200	Both Sides	1.200
5	99+5000	99+9670	Both Sides	0.934
6	107+8800	108+4800	Both Sides	1.200
7	111+5600	112+2600	Both Sides	1.400
8	118+8200	119+6150	Both Sides	1.590
9	119+8750	120+4200	Both Sides	1.090
10	121+4800	122+1000	Both Sides	1.240
11	132+6000	133+1050	Both Sides	1.010
Total				**14.824**

2.5 Bypass/Realignment

As per the provisions of Schedule B of the Concession Agreement Realignment is provided at the following locations.

Table 2.5: Realignment/Bypass stretches

S. No.	From (Km.)	To (Km.)	Length (Kms.)	Remarks
1	81+547	100+125	18.57	Bypass
2	106+750	113+800	7.05	Bypass
3	118+107	123+383	5.276	Bypass
4	132+050	133+800	1.750	Bypass
5	35+100	36+300	1.200	Realignment
6	41+350	45+550	4.200	Realignment
7	103+450	104+300	0.850	Realignment
Total			**38.904**	

2.6 Intersections

List of Major and Minor junctions are given below:

Table 2.6: List of Major Junctions

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
1	11+575	X	Fajjabad LHS, Kanpur RHS	

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
2	13+068	T	LHS	Develop as per site condition
3	22+072	Y	Mohanlalganj-RHS	
4	23+459	T	Barabanki -LHS	
5	41.535	Y	RHS	Develop as per site condition
6	49+617	X	Road to village Bara-LHS Road to Village - RHS	
7	54+863	X	SH 13	
8	71+540	X	SH31	
9	81+697	Y	Start of Jagdishpur Bypass	
10	86+155	SH-15	start of Jagadeeshpur Bypass	
11	100+120	Y	End of Jagdishpur Bypass	
12	106+880	Y	Start of MushafirKhana Bypass	
13	108+100	MDR	Musfarikhana bypass	
14	111+935	MDR	Musfarikhana bypass	
15	113+570	Y	End of MushafirKhana Bypass	
16	118+220	Y	Start of Aliganji Bypass	
17	119+240	MDR	Aliganj bypass	
18	123+180	Y	LHS	
19	132+155	Y	Start of Shabhaganj & Badaunkalan Bypass	
20	133+610	Y	Start of Shabhaganj &Badaunkalan Bypass	

Table 2.7: List of Minor Junctions

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
1	11+500	X	City Kanpur	
2	13+035	Y	Golf City	
3	14+141	Y	Mirzapur	
4	14+596	Y	Hasanpur	
5	15+840	T	Kajriya	
6	15+852	Y	Marthmau	
7	16+555	Y	Pahar Nagar	
8	17+340	X	AanchaliKheraBeraj	
9	20+900	Y	Village Kashimpur	
10	21+183	Y	Chandsary	
11	21+641	Y	Kuryani	
12	22+625	Y	Mahmudpur	
13	23+515	T	Village road	
14	24+745	Y	Sekhnapur	
15	25+682	Y	Kaji Kera	

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
16	26+613	T	Basriya	
17	27+472	Y	Village Muhara Kalan	
18	27+475	Y	Doharagaon	
19	28+026	Y	Krwali	
20	28+236	T	Rambhag	
21	29+313	Y	Gadhi	
22	30+214	Y	Karim Nagar	
23	31+084	Y	Rahmat Nagar	
24	33+285	Y	Mohanlalganj	
25	33+366	Y	Dist. Barabanki	
26	33+754	Y	Dist. Barabanki	
27	34+771	Y	Bhaduwa	
28	36+219	T	Bhitipurwa	
29	36+726	Y	Chhandrolli	
30	37+912	Y	Village BaghPurwa	
31	38+254	Y	Makudpur	
32	39+120		Village road	
33	39+623	Y	Goria Ka Puria	
34	40+097	Y	Village Bhilwal	
35	40+412	Y	Village Khanpur	
36	40+809	T	Dahla	
37	41+201	Y	Khawajapur	
38	42+467	Y	Kandhi Trilokpur	
39	43+384	X	Mubarakpur	
40	44+563	Y	Kandhitrilokpur	
41	45+827	Y	GurudutKhera	
42	45+870	Y	Collage Road	
43	46+847	T	Sahriya	
44	46+850	T	Kabri	
45	47+064	T	Kabri	
46	47+435	T	Tejwapur	
47	47+969	Y	Budhanapur	
48	48+251	Y	Kolhada	
49	48+606	Y	Jalalpur	
50	49+900	T	Bara	
51	50+835	Y	Shahpur	
52	52+726	Y	Ranapur	
53	52+919	Y	Purwa	
54	53+811	T	Ranapur	
55	55+576	Y	Suveha	

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
56	56+989	Y	Bhatkhera	
57	60+988	Y	Bhikhera	
58	63+150	Y	Murai	
59	65+612	T	Hazari Ganj	
60	66+443	T	Anguri	
61	67+230	Y	Garghi	
62	67+396	Y	Chilaoli	
63	67+641	Y	Chilaoli	
64	67+804	Y	Chilaoli	
65	68+020	T	Simara	
66	69+355	Y	Fields	
67	72+469	T	Achalgarh	
68	73+190	T	Bijoira	
69	73+486	Y	Bijoira	
70	73+796	T	Duhlan Ka Purwa	
71	74+719	T	Pure Nati Dubey	
72	75+354	T	Lal Purwa	
73	75+757	T	Lal Purwa	
74	76+943	Y	RHS	
75	78+345	X	BHS	
76	79+178	T	RHS	
77	80+608	X	Suduruwa	
78	80+827	T	Suduruwa	
79	86+745	X	JAYAJ	
80	89+421	X	JAGDISHPUR	
81	92+563	X	MISROLI	
82	93+475	X	Village Road	
83	97+101	X	Village Road	Developed as per site condition
84	99+723	X	Village Road	
85	100+697	T	KANKUPUR	
86	103+422	T	Thouri	
87	104+445	T	Chak Bohar	
88	104+969	Y	Metha	
89	106+103	T	Pure Pahalwanpur	
90	113+570	T	Jamwari	
91	113+929	T	Mana Madanpur	
92	114+368	X	Mana Madanpur	
93	115+558	T	Karpiya	
94	116+734	T	Upadhaipur	
95	117+682	T	Kharsa	

S. No.	Chainage (Km.)	Type of Junction	Details	Remarks
96	118+100	T	Pure Ghuppa Pande	
97	120+129	X	Village Road	
98	121+714	X	Village Road	Developed as per site condition
99	124+500	Y	Rawania Purwa	
100	125+382	T	Bahlolpur	
101	126+500	T	Chandpur	
102	126+781	X	Chandpur	
103	127+935	T	Narhi	
104	128+560	T	Kuwar	
105	129+624	Y	Dhamaur	
106	129+832	Y	Miranpur	
107	132+778	X	Village Road	
108	136+210	Y	Hasanpur	
109	137+847	Y	Aligarh	
110	138+119	Y	Hajiyaripur Shah	

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the Concession Agreement 6 Nos. of Pedestrian Underpass, and 4 Nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB)

One ROB is provided in the project road at Km. 43+740 as per provisions of Schedule B of CA.

2.9 Carriageway Details

Summary of Carriageway Details is given below:

Table 2.8: Summary of Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)
1	Slip Roads	14.824	---
2	4 Lane Paved shoulder	---	127.425
3	Total Length of the Project	14.824	127.425
TYPE OF ALIGNMENT			
4	Widening	---	87.012
5	Realignment/New	---	33.001
6	Flyover/VUP/PUP approaches	---	7.412
7	Cutting Section	---	
8	Total Length of the Project	--	127.425

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.9: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	ROB	Underpasses
1	Retained						
2	Widening		5	72	40		
3	Reconstruction			66	12		
4	New	1	8	44	25	1	VUP – 4 Nos. PUP – 6 Nos.
5	Improvement						
	Total	**1**	**13**	**182**	**77**	**1**	**10**

2.11 Toll Plazas

- Two toll Plazas are provided on the project road at Km. 50+900 and Km.123+490, which comprises of 16 lanes.
- The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m.
- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 15 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 21 locations. Details are provided below.

Table 2.10: List of Bus bays/Bus shelters

LHS			RHS		
S. No.	**Name of Habitations**	**Location**	**S. No.**	**Name of Habitations**	**Location**
1	Bhadva (Gajariafarm)	13+400	23	Bakkas	16+830
2	MadarmauKhurad	14+380	24	KasimpurBeruha	19+090
3	Chand Saray	21+100	25	Amethi	27+150
4	Amethi	27+100	26	Salempur	32+450
5	Rahmatnagar	30+630	27	Khanpur	40+590
6	Makanpur	37+860	28	Madnapur	47+870

LHS		
S. No.	Name of Habitations	Location
7	Kakri&Madnapur	47+740
8	Ranapur&Lilhoura	53+470
9	Inhona	70+450
10	Kathora (Built Up)	77+720
11	Kamroli (Built Up)	81+500
12	Mangroa	82+875
13	Jalalpur Tiwari	85+650
14	Mangoli	86+760
15	Mishroli	89+490
16	Kankupur	96+600
17	ChakBaher	102+900
18	Kasthuni Paschim	110+480
19	Khandsa	113+190
20	Khokhipur (at SR)	119+700
21	Rankedih	125+285
22	Ahamamau	13+260

RHS		
S. No.	Name of Habitations	Location
29	Bhatkhera&Kharsatiya	57+270
30	Inhona	72+150
31	Kathora (Built Up)	77+720
32	Uthelwa	81+600
33	Mangrora	82+915
34	Jalalpur Tiwari	85+650
35	Sindhiyava	86+920
36	Mishroli	89+550
37	Kankupur	97+500
38	ChakBaher	103+000
39	Majhgava	110+480
40	Khandsa	113+190
41	RavniyaPashchim (at SR)	120+440
42	MudduiNewada	126+650
43	Dandu Pur	133+510

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

Starting Point of Project

Bus Stop at Km. 37+860

Truck Lay Bye at Km. 37+200

Truck lay at Km. 37+200

At Km 41+400

Truck Lay Bye at Km. 75+300

Km. 127+300

Km. 133+600

Km. 138+880

Figure 2.20: Representative Photos of Road Features

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following Table 3.1. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	127.425 Kms.
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	130 Nos.
6	Toll Plazas	At Km. 50+900 and Km. 123+490
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	43 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

3.3 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition

As per the provisions of Schedule B, the Concessionaire has constructed the Main Carriageway with Rigid Pavement and Service & Slip Roads with Flexible Pavement. Pavement Design submitted by the Concessionaire was reviewed and found in accordance with the provisions of IRC:37 and IRC 58. Design parameters are provided below. CBR considered for Flexible Pavement was 13% and Effective CBR for

Rigid pavement was 7%. Based on CBR values, axle loads and Traffic the crust designed is satisfactory. The crust details are given below.

Table 3.2: For Rigid pavement –Main carriage way

S. No.	Layer	Thickness
1	PQC	300 mm
2	DLC	150 mm
3	GSB	150 mm
4	Sub Grade	500 mm

Table 3.3: Flexible Pavement-Service Roads

S. No.	Layer	Thickness
1	BC	40 mm
2	DBM	65 mm
3	WMM	250 mm
4	GSB	260 mm
5	Sub Grade	500 mm

- Based on the review on Designs submitted by the Concessionaire, the above crust is safe for project.

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19. The summary of Pavement condition is given below.

Table 3.4: Pavement Condition Summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
11+500	134+700	127.425	Good

Km. 35+300

Km. 41+000

Km. 50+800

Km. 76+000

Km. 87+700

Km. 111+400

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990

4.2 Inventory of Structures

The details of Structures along this project road are listed below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	01 Nos.
2	Minor Bridge	13 Nos.
3	Pipe culverts	184 Nos.
4	Slab/Box Culverts	75 Nos.
5	ROB	01 Nos.
6	Underpasses	10 Nos.

For Major bridge the Superstructure is of PSC I Girder with RCC circular type Piers and wall type Abutments resting on open foundation. For Minor bridges, the superstructure is RCC solid slab and the substructures are of PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 1.** The culverts observed along the project road are mainly of two types viz. Pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.3 Details of Major Bridges

The total length of the Major bridge at Km. 31+569 is 79.50 m both on LHS and RHS side. The superstructure is of PSC I girder with RCC circular type Piers and wall type Abutments resting on open foundations both for LHS and RHS. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip Seal type. RCC crash barrier has been provided on both sides of the deck.

Table 4.2: List of Major Bridge

S. No.	Chainage (Km.)	Side	Span (m)	Total Length of Bridge (m)
1	31+569	LHS	3 x 26.5	79.5
		RHS	3 x 26.5	79.5

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and cleaning of strip seal expansion joints are to be carried out.

Km. 31+569

Km. 31+569

Km. 31+569

Km. 31+569

Figure 4.1: Representative photos of Major Bridge

4.4 Road Over Bridge (ROB):

There is one ROB in the project stretch with 77.5m both on LHS and RHS side. The superstructure is of composite girder with RCC rectangular piers and wall type abutments both for LHS and RHS. For approach spans the superstructure is of RCC girder type. Expansion joints are of Strip Seal type. RCC crash barrier has been provided on both sides of the deck.

Table 4.3: Details of ROB

S. No.	Chainage (Km.)	Side	Span (m)	Total Length of Bridge (m)
1	43+750	LHS	1 x 47.5 + 2 X 15.0	77.50
		RHS	1 x 47.5 + 2 X 15.0	77.50

The condition of the superstructure and substructure is good.

ROB Km. 43+750

ROB Km. 43+750

Figure 4.2: Representative photos of ROB

4.5 Details of Minor Bridges

There are 13 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab or RCC/PSC girder supported on RCC/PCC wall type Abutment or Pier resting on open foundations. Some are RCC box type minor bridges. Expansion joints are buried type/strip seal type and bearings are of tar paper/ elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.4: Inventory of Minor Bridges

S. No.	Design Chainage Km.	Location	Span (No. X m)	Total Length of Bridge (m)	Description
1.	17+305	LHS	4 x 13.2	52.8	The superstructure is of RCC girder supported on conventional RCC wall type piers and abutments resting on open foundations. Buried/Strip seal type expansion joints.
		RHS	1 x 52.8	52.8	The superstructure is of composite steel girder supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
2.	45+586	LHS	1 x 26.3	26.3	The superstructure is of PSC girder supported on conventional RCC wall type piers and abutments resting on open foundations. Buried/Strip seal type expansion joints.
		RHS	1 x 26.3	26.3	The superstructure is voided slab supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
3.	53+620	LHS	3 x 3.40	10.2	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 3.40	10.2	It is RCC box type minor bridge with bituminous wearing coat.

S. No.	Design Chainage Km.	Location	Span (No. X m)	Total Length of Bridge (m)	Description
4.	56+347	LHS	3 x 5.6	16.8	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 5.6	16.8	It is RCC box type minor bridge with bituminous wearing coat.
5.	65+597	LHS	3 x 4.6	13.8	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 4.6	13.8	It is RCC box type minor bridge with bituminous wearing coat.
6.	70+199	LHS	3 x 3.8	11.4	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 3.8	11.4	It is RCC box type minor bridge with bituminous wearing coat.
7.	82+315	LHS	3 x 6.0	18.0	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 6.0	18.0	It is RCC box type minor bridge with bituminous wearing coat.
8.	83+356	LHS	3 x 8.5	25.5	It is RCC box type minor bridge with bituminous wearing coat.
		RHS	3 x 8.5	25.5	It is RCC box type minor bridge with bituminous wearing coat.
9.	92+945	LHS	2 x 16	32.0	The superstructure is RCC solid slab supported on conventional RCC wall type piers/abutments resting on open foundations. Buried/Strip seal type expansion joints.
		LHS	2 x 16	32.0	The superstructure is RCC solid slab supported on conventional RCC wall type piers/abutments resting on open foundations. Buried/Strip seal type expansion joints.
10.	103+772	RHS	2 x 24	48.0	The superstructure is of PSC/RCC girder supported on conventional RCC wall type piers and abutments resting on open foundations. Buried/Strip seal type expansion joints.
		LHS	2 x 24	48.0	The superstructure is of PSC/RCC girder supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
11	107+607	RHS	1 x 32	32.0	The superstructure is of PSC girder supported on conventional RCC wall type piers and abutments resting on open foundations. Buried/Strip seal type expansion joints.
		LHS	1 x 32	32.0	The superstructure is of PSC girder

S. No.	Design Chainage Km.	Location	Span (No. X m)	Total Length of Bridge (m)	Description
					supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
12	112+518	RHS	1 x 32	32.0	The superstructure is of PSC girder supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
		LHS	1 x 32	32.0	The superstructure is of PSC girder supported on conventional RCC wall type abutments resting on open foundations. Buried/Strip seal type expansion joints.
13	129+590	RHS	4 x 2.8	11.2	It is RCC box type minor bridge with bituminous wearing coat.
		LHS	4 x 2.8	11.2	It is RCC box type minor bridge with bituminous wearing coat.

Km. 56+347

Km. 107+607

Figure 4.3: Representative photos of Minor Bridges.

4.6 Details of Underpass

There are 6 PUP's and 4 VUP's in the project stretch. It is RCC box type structure with buried type/Strip seal type expansion joints.

Table 4.5: Inventory of Underpass (VUP/PUP)

S. No.	Chainage (Km.)	Type of Structure	Span (No. X m)	Total Length (m)	Description
1.	86+155	VUP	2 x 15.0	30.0	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2.	93+475	PUP	1 x 7.32	7.32	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3.	97+101	PUP	1 x 8.3	8.3	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
4.	99+723	PUP	1 x 7	7.0	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5.	108+100	VUP	1 x 12.5	12.5	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6.	111+956	VUP	1 x 12.1	12.1	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7.	119+241	VUP	1 x 14.5	14.5	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8.	120+129	PUP	1 x 7.1	7.1	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9.	121+714	PUP	1 x 7.5	7.5	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10.	132+778	PUP	1 x 7.4	7.4	It is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

PUP Km. 93+475

PUP Km. 93+475

PUP Km. 93+475

PUP Km. 93+475

PUP Km. 99+723

PUP Km. 99+723

PUP Km. 99+723

PUP Km. 99+723

Figure 4.4: Representative photos of PUP

VUP Km. 86+155

VUP Km. 86+155

VUP Km. 86+155

VUP Km. 86+155

VUP Km. 108+100

VUP Km. 108+100

VUP Km. 108+100

VUP Km. 108+100

Figure 4.5: Representative photos of VUP

4.7 Details of Culverts:

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.7.1. Slab/Box Culverts

There are 75 Nos. of Slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.6: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Type of Structure	Span (No. X m)
1	13+518	Box	1 x 3.0
2	14+056	Box	1 x 2.5
3	15+498	Box	1 x 1.0
4	16+563	Box	1 x 2.0
5	16+950	Box	1 x 3.0
6	18+248	Box	1 x 6.0
7	20+907	Box	1 x 2.0
8	21+336	Box	1 x 1.0
9	21+449	Box	1 x 1.0
10	21+813	Box	1 x 4.0
11	22+636	Box	1 x 2.1
12	23+452	Box	1 x 2.0
13	32+307	Box	1 x 2.0
14	36+693	Box	1 x 2.6
15	37+715	Box	1 x 1.0
16	38+560	Box	1 x 1.0
17	42+788	Box	1 x 3.0
18	43+191	Box	1 x 3.5
19	44+903	Box	1 x 3.98
20	47+998	Box	1 x 2.5
21	49+198	Box	1 x 4.8
22	50+735	Box	1 x 1.0
23	51+907	Box	1 x 0.9
24	52+843	Box	1 x 5.4
25	53+014	Box	1 x 2.0
26	53+306	Box	1 x 2.8
27	54+657	Box	1 x 4.0
28	55+182	Box	1 x 3.0
29	55+301	Box	1 x 1.5
30	56+208	Box	1 x 2.0
31	56+430	Box	1 x 2.0
32	60+324	Box	1 x 1.0
33	67+224	Box	1 x 2.0
34	67+575	Box	1 x 1.0
35	74+861	Box	1 x 3.1
36	75+280	Box	1 x 3.5
37	76+356	Box	1 x 1.5
38	76+394	Box	1 x 5.0
39	78+188	Box	1 x 1.5
40	78+320	Box	1 x 2.0
41	81+062	Box	1 x 2.0
42	81+545	Box	1 x 3.75
43	81+800	Box	3 x 2.5
44	81+951	Box	1 x 2.0
45	84+633	Box	1 x 4.62
46	85+522	Box	3 x 2.5
47	86+266	Box	1 x 6.0
48	86+763	Box	1 x 6.2
49	87+674	Box	1 x 6.1
50	88+250	Box	3 x 2.5
51	89+379	Box	1 x 2.5
52	91+250	Box	3 x 2.5
53	90+740	Box	1 x 2.0
54	92+200	Box	1 x 2.0
55	95+190	Box	1 x 3.0
56	95+548	Box	2x3.0
57	97+290	Box	1 x 3.0
58	98+304	Box	1 x 4.0
59	99+144	Box	1 x 3.0
60	100+319	Box	1 x 2.0
61	101+091	Box	1 x 2.0
62	101+484	Box	1 x 1.0
63	102+178	Box	1 x 1.8
64	102+692	Box	1 x 1.0
65	104+274	Box	1 x 2.0
66	105+714	Box	1 x 2.0
67	106+194	Box	1 x 2.0
68	108+873	Box	1 x 8.4
69	112+450	Box	1 x 9.45
70	117+690	Box	1 x 3.5
71	118+950	Box	1 x 3.0
72	121+200	Box	1 x 3.0
73	121+580	Box	1 x 3.0
74	124+626	Box	1 x 3.0
75	132+078	Box	1 x 2.0

4.7.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 81+800

Km. 84+633

Km.90+740

Figure 4.6: Representative photos of Box Culverts

4.7.3. General Description of the Pipe Culverts

There are 184 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.7: List of Pipe Culverts

S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)	S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)
1	11+808	HPC	1 x 1.0	93	66+540	HPC	1 x 1.2
2	12+346	HPC	3 x 0.9	94	66+812	HPC	1 x 1.2
3	13+138	HPC	9 x 1.0	95	67+044	HPC	1 x 0.9
4	13+844	HPC	2 x 1.0	96	67+33	HPC	1 x 1.2
5	14+260	HPC	1 x 1.0	97	67+483	HPC	1 x 1.2
6	14+952	HPC	1 x 0.9	98	67+726	HPC	1 x 1.2
7	17+004	HPC	1 x 1.2	99	67+970	HPC	1 x 1.2
8	17+549	HPC	1 x 1.2	100	68+059	HPC	1 x 1.2
9	17+861	HPC	1 x 1.2	101	68+564	HPC	1 x 1.2
10	18+620	HPC	1 x 1.2	102	68+872	HPC	1 x 1.0

S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)
11	19+362	HPC	1 x 1.2
12	19+501	HPC	1 x 1.2
13	20+039	HPC	1 x 1.2
14	20+074	HPC	1 x 1.2
15	20+416	HPC	1 x 1.2
16	21+078	HPC	1 x 1.2
17	21+654	HPC	1 x 0.9
18	23+011	HPC	1 x 1.2
19	24+303	HPC	1 x 1.2
20	24+740	HPC	1 x 0.9
21	24+951	HPC	1 x 1.0
22	25+001	HPC	1 x 1.2
23	25+493	HPC	1 x 1.0
24	26+375	HPC	1 x 1.0
25	26+691	HPC	1 x 1.2
26	26+912	HPC	1 x 1.2
27	27+456	HPC	2 x 1.2
28	27+745	HPC	1 x 1.2
29	28+831	HPC	1 x 1.2
30	29+135	HPC	1 x 1.2
31	29+380	HPC	1 x 1.2
32	29+611	HPC	1 x 1.2
33	29+849	HPC	1 x 1.2
34	30+241	HPC	1 x 1.2
35	30+865	HPC	1 x 1.0
36	33+123	HPC	2 x 0.9
37	33+480	HPC	1 x 1.2
38	34+261	HPC	7 x 1.0
39	34+956	HPC	3 x 0.9
40	35+517	HPC	1 x 1.2
41	36+000	HPC	1 x 1.2
42	36+214	HPC	1 x 0.9
43	36+294	HPC	1 x 1.2
44	37+991	HPC	2 x 1.0
45	38+303	HPC	1 x 1.2
46	38+918	HPC	1 x 1.0
47	39+303	HPC	1 x 1.2
48	39+865	HPC	1 x 0.9
49	40+344	HPC	1 x 1.2
50	40+755	HPC	1 x 1.2
51	40+989	HPC	1 x 1.2

S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)
103	69+032	HPC	1 x 1.2
104	69+850	HPC	1 x 1.2
105	70+289	HPC	1 x 1.2
106	70+581	HPC	1 x 0.9
107	70+651	HPC	1 x 1.2
108	71+045	HPC	1 x 1.2
109	71+313	HPC	1 x 1.2
110	72+126	HPC	1 x 1.0
111	72+190	HPC	1 x 0.9
112	72+834	HPC	1 x 1.2
113	73+545	HPC	1 x 1.2
114	73+780	HPC	1 x 1.2
115	74+218	HPC	1 x 1.2
116	74+631	HPC	1 x 1.0
117	76+320	HPC	1 x 1.2
118	76+593	HPC	1 x 1.2
119	76+868	HPC	1 x 1.2
120	76+956	HPC	1 x 1.2
121	77+000	HPC	1 x 1.2
122	77+200	HPC	1 x 1.2
123	78+000	HPC	1 x 1.2
124	79+196	HPC	1 x 1.2
125	80+580	HPC	1 x 1.2
126	83+030	HPC	2 x 1.2
127	83+582	HPC	2 x 1.2
128	89+130	HPC	2 x 1.2
129	88+520	HPC	1 x 1.2
130	93+260	HPC	1 x 1.2
131	94+500	HPC	1 x 1.2
132	83+960	HPC	1 x 1.2
133	96+690	HPC	1 x 1.2
134	89+850	HPC	1 x 1.2
135	98+900	HPC	1 x 1.2
136	84+120	HPC	1 x 1.2
137	102+034	HPC	1 x 0.9
138	104+581	HPC	1 x 1.2
139	106+800	HPC	1 x 1.2
140	107+293	HPC	1 x 1.2
141	107+578	HPC	1 x 1.2
142	107+780	HPC	2 x 1.2
143	108+186	HPC	1 x 1.2

S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)
52	41+778	HPC	1 x 1.2
53	41+883	HPC	1 x 1.2
54	42+422	HPC	1 x 1.2
55	43+430	HPC	1 x 1.2
56	44+020	HPC	1 x 1.2
57	44+270	HPC	1 x 1.2
58	46+351	HPC	1 x 1.2
59	46+572	HPC	1 x 1.0
60	49+836	HPC	1 x 0.9
61	50+952	HPC	1 x 0.9
62	51+382	HPC	1 x 1.2
63	51+712	HPC	1 x 0.9
64	52+296	HPC	1 x 0.9
65	56+940	HPC	1 x 1.2
66	57+393	HPC	1 x 1.2
67	58+109	HPC	2 x 1.0
68	58+235	HPC	1 x 1.2
69	58+577	HPC	1 x 1.2
70	58+938	HPC	1 x 1.2
71	59+285	HPC	1 x 1.2
72	59+476	HPC	1 x 1.2
73	59+746	HPC	1 x 1.2
74	59+849	HPC	1 x 1.2
75	60+104	HPC	1 x 1.2
76	60+17	HPC	1 x 1.2
77	60+734	HPC	1 x 1.2
78	61+08	HPC	1 x 1.2
79	61+255	HPC	1 x 1.2
80	61+794	HPC	1 x 1.2
81	62+183	HPC	1 x 1.2
82	62+707	HPC	1 x 1.2
83	63+075	HPC	1 x 1.2
84	63+290	HPC	1 x 1.0
85	63+454	HPC	1 x 1.2
86	63+606	HPC	1 x 1.2
87	63+785	HPC	1 x 1.0
88	64+199	HPC	1 x 1.2
89	64+611	HPC	1 x 1.0
90	64+899	HPC	1 x 1.0
91	65+957	HPC	1 x 1.0
92	66+312	HPC	1 x 1.2

S. No.	Chainage (km.)	Type of Structure	No. of Row x Dia.(m.)
144	109+414	HPC	1 x 1.2
145	110+129	HPC	1 x 1.2
146	111+060	HPC	1 x 1.2
147	111+650	HPC	1 x 1.2
148	112+250	HPC	1 x 1.2
149	112+550	HPC	2 x 1.2
150	112+977	HPC	1 x 1.2
151	113+080	HPC	1 x 1.2
152	114+308	HPC	1 x 1.2
153	115+510	HPC	1 x 1.2
154	116+969	HPC	2 x 1.2
155	118+530	HPC	1 x 1.2
156	119+520	HPC	2 x 1.2
157	119+830	HPC	1 x 1.2
158	120+540	HPC	1 x 1.2
159	121+930	HPC	2 x 1.2
160	122+820	HPC	1 x 1.2
161	123+226	HPC	2 x 1.0
162	123+615	HPC	3 x 1.0
163	124+483	HPC	1 x 1.2
164	124+920	HPC	1 x 1.2
165	125+437	HPC	1 x 1.0
166	126+036	HPC	1 x 1.0
167	127+235	HPC	1 x 0.9
168	127+470	HPC	1 x 1.2
169	127+678	HPC	1 x 0.9
170	128+852	HPC	1 x 1.2
171	130+322	HPC	1 x 1.2
172	130+660	HPC	1 x 0.9
173	131+066	HPC	1 x 1.2
174	132+610	HPC	1 x 1.2
175	132+920	HPC	1 x 1.2
176	133+310	HPC	2 x 1.2
177	107+636	HPC	1 x 1.2
178	135+230	HPC	1 x 1.2
179	135+447	HPC	1 x 0.9
180	135+992	HPC	1 x 1.2
181	136+421	HPC	1 x 1.2
182	136+875	HPC	1 x 1.0
183	137+450	HPC	2 x 1.2
184	137+898	HPC	1 x 1.2

Km. 26+375

Figure 4.7: Representative photos of Pipe Culverts

4.7.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. REVIEW OF PAVEMENT DESIGN

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The Pavement Design shall be carried out in accordance with Indian Roads Congress guide lines. The pavement is designed in accordance with IRC: 58 -2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for Highways", IRC: SP:84-2014, IRC:15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5.1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	6 %
Two-way commercial traffic volume per day	3522
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	300
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	520

As per schedule D, (Annexure-I), clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl:5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC:37, "Guidelines for the Design of Flexible Pavements".

Table 5.2: Flexible Pavement for service road

S. No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	6 %
2	Design Life (Years)	15 years
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40 mm
5	Binder course (DBM)	65 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	260 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement (service roads) – Next Periodic Renewal Proposed on or before 2027 and 2034.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Road Safety Audit

During the site visit, it is observed that all safety items are provided as shown in the following Table 6.2.

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments & Bridge Approaches	Available as per site requirement	Good
4	Median kerb	Along the Project Highway	Provided as per IRC SP:84-2014	Good
5	Road studs & Solar Blinkers	Along the Project Highway	Provided as per IRC SP:84-2014	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

The Concessionaire is maintaining the safety features in good condition from time to time in accordance with the provisions of Schedule K of the Concession Agreement.

Km. 17+300

Km. 20+300

Km. 41+450

Km. 54+100

Km. 55+900

Km. 81+600

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly necessary during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There are two toll Plazas on the project road at Km. 50+900 and Km. 123+490. The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed at the front of each island to prevent out of control approaching vehicles crashing into the toll booth. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 15 Nos. toll booths are provided in toll plaza.

Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is enclosed at **ANNEXURE 9.**

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.1: List of Vehicles

S. No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	2 No
2	Ambulance	2 No.

Toll Plaza Km. 50+900

Toll Building Km. 50+900

Toll Plaza Km. 123+490

Toll Building Km. 123+490

Figure 7.1: Representative photos of Toll Plaza

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model in which Authority makes payment of 40% of the Bid Project cost during construction period based on progress milestones set forth in Concession Agreement. Payment of the balance 60% of the Bid Project Cost is made in form of bi-annual annuities with interest during the operational phase of concession.

Table 8.1: Schedule of Payment Milestones

S. No.	Payment Milestone No	Criteria for releasing the Payment
1	I	On Achievement of 20% of Physical Progress
2	II	On Achievement of 40% of Physical Progress
3	III	On Achievement of 60% of Physical Progress
4	IV	On Achievement of 75% of Physical Progress
5	V	On Achievement of 90% of Physical Progress

During the Operation Period following payment components are payable.

- Annuity Payment as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- Interest to be paid on the balance of completion cost at an interest rate equal to the applicable Bank Rate Plus 3%.
- O&M Payment as a lump sum amount as per Clause 23.7.1 of the Concession Agreement.

8.2 Schedule of Annuity Payments

Details of Annuity payments are as below.

Table 8.2: Schedule of Annuity Payments

S. No.	Following the COD	Percentage of Completion Cost remaining	Annuity Due date	Annuity Paid Date
1	Annuity No 1	2.10%	27.10.2019	07-Nov-19
2	Annuity No 2	2.17%	27.04.2020	01-May-20
3	Annuity No 3	2.24%	27.10.2020	04-Nov-20
4	Annuity No 4	2.31%		
5	Annuity No 5	2.38%		
6	Annuity No 6	2.45%		
7	Annuity No 7	2.52%		
8	Annuity No 8	2.60%		
9	Annuity No 9	2.68%		
10	Annuity No 10	2.76%		
11	Annuity No 11	2.84%		
12	Annuity No 12	2.93%		
13	Annuity No 13	3.02%		

S. No.	Following the COD	Percentage of Completion Cost remaining	Annuity Due date	Annuity Paid Date
14	Annuity No 14	3.11%		
15	Annuity No 15	3.20%		
16	Annuity No 16	3.30%		
17	Annuity No 17	3.40%		
18	Annuity No 18	3.50%		
19	Annuity No 19	3.61%		
20	Annuity No 20	3.72%		
21	Annuity No 21	3.83%		
22	Annuity No 22	3.94%		
23	Annuity No 23	4.06%		
24	Annuity No 24	4.18%		
25	Annuity No 25	4.25%		
26	Annuity No 26	4.25%		
27	Annuity No 27	4.44%		
28	Annuity No 28	4.71%		
29	Annuity No 29	4.75%		
30	Annuity No 30	4.75%		

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. carrying out preventive and periodic maintenance of the Project road;
iii. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
iv. Undertaking major maintenance such as resurfacing of pavements, repairs to structures.
v. Functioning of the lighting system;

vi. Functioning of the Patrolling System
vii. Functioning of rescue and medical aid services
viii. Ambulance as and when required
ix. Functioning of the Project Facilities
x. Administrative, Operational and Maintenance Base Camp
xi. Truck Lay byes
xii. Pickup Bus stops / Bus Bays
xiii. protection of the environment and provision of equipment and materials
xiv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xv. complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute
2nd Periodic Maintenance	2034	Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include.

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

As per Schedule K of the CA, Roughness value shall not exceed 2750 mm in a Km. Based on the review of documents, it was noticed that no NCRs were issued pertinent to riding quality

9.7 O&M Payments

In accordance with Cl.23.7.1, O&M expenses shall be borne by Concessionaire, a lumpsum financial support in the form of bi annual payments shall be due and payable by Authority.

9.8 O&M Forecast

The O&M costs were estimated based on various parameters of CA, and design reports The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 3.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Cost	Total cost per year
2019	3.549	2.792		4.85	11.19
2020	3.656	2.876		4.99	11.52
2021	3.765	2.962		5.14	11.87
2022	3.878	3.051		5.30	12.23
2023	3.994	3.142		5.46	12.59
2024	4.114	3.237		5.62	12.97
2025	4.238	3.334		5.79	13.36
2026	4.365	3.434	34.45	5.96	48.21
2027	4.496	3.537		6.14	14.17
2028	4.631	3.643		6.33	14.60
2029	4.770	3.752		6.52	15.04
2030	4.913	3.865		6.71	15.49
2031	5.060	3.981		6.91	15.95
2032	5.212	4.100	39.58	7.12	56.01
2033	5.368	4.223		7.33	16.92
2034	5.529	4.350		7.55	17.43
2035	0.452	0.356		0.62	1.43
Total	**71.990**	**56.631**	**74.03**	**98.35**	**301.00**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 4**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, conforms to the specifications, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire.

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. A copy of PCOD is enclosed at **ANNEXURE 5**.

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. A copy of CC attached at **ANNEXURE 6**.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the HAI are provided in **ANNEXURE 8**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents

- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements.
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Lanning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety

Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the % of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance:

As per clause 26.1 of the CA, the Concessionaire shall affect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks. Copy of insurances are enclosed at **ANNEXURE 7**.

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Property covered
			From	To	
Employees Compensation Insurance	HDFC ERGO General Insurance Co Ltd	4203786194200000	3.11.2020	2.11.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project
Civil Engineering Completed Risk Policy	National Insurance Co Ltd	32130044190001996	27.3.2020	26.3.2021	Road and structures, Toll Bldg., Road furniture etc.
Electronic Equipment Insurance Policy	The Oriental Insurance Co Ltd	171200/44/2021/64	12.11.2020	11.11.2021	Four Lanning of Lucknow sulthanpur Road

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

Two Toll Plazas are constructed one at Km.50+900 and another is at Km. 123+490. Both Toll Plazas are operational. Toll Plazas are operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays and truck Lay byes are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza, bus bay and truck lay bye locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2027 and 2034.

12.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Condition of Bridges

S. No.	Chainage (Km.)	Type of Structure	Sub structure	Super structure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	17+305	Minor bridge	Good	Good	Good	-	Good	Good	-
2	31+569	Major bridge	Good	Good	Good	-	Good	Good	-
3	43+740	ROB	Good	Good	Good	-	Good	Good	-
4	45+317	Minor bridge	Good	Good	Good	-	Good	Good	-
5	53+620	Minor bridge	Good	Good	Good	-	Good	Good	-
6	56+347	Minor bridge	Good	Good	Good	-	Good	Good	-
7	65+597	Minor bridge	Good	Good	Good	-	Good	Good	-
8	70+199	Minor bridge	Good	Good	Good	-	Good	Good	-
9	82+315	Minor bridge	Good	Good	Good	-	Good	Good	-
10	83+390	Minor bridge	Good	Good	Good	-	Good	Good	-
11	86+155	VUP	Good	Good	Good	-	Good	Good	-
12	92+945	Minor bridge	Good	Good	Good	-	Good	Good	-
13	93+475	PUP	Good	Good	Good	-	Good	Good	-
14	97+101	PUP	Good	Good	Good	-	Good	Good	-
15	99+723	PUP	Good	Good	Good	-	Good	Good	-
16	103+772	Minor bridge	Good	Good	Good	-	Good	Good	-
17	107+607	Minor bridge	Good	Good	Good	-	Good	Good	-
18	108+100	VUP	Good	Good	Good	-	Good	Good	-
19	111+956	VUP	Good	Good	Good	-	Good	Good	-
20	112+518	Minor bridge	Good	Good	Good	-	Good	Good	-
21	119+241	VUP	Good	Good	Good	-	Good	Good	-
22	120+129	PUP	Good	Good	Good	-	Good	Good	-
23	121+714	PUP	Good	Good	Good	-	Good	Good	-
24	129+590	Minor bridge	Good	Good	Good	-	Good	Good	-
25	132+778	PUP	Good	Good	Good	-	Good	Good	-

Annexure 2: Condition of Culverts

Condition Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	11+808	Good	Good	Good	Fair
2	12+346	Good	Good	Good	Fair
3	13+138	Good	Good	Good	Fair
4	13+844	Good	Good	Good	Fair
5	14+260	Good	Good	Good	Fair
6	14+952	Good	Good	Good	Fair
7	17+004	Good	Good	Good	Fair
8	17+549	Good	Good	Good	Fair
9	17+861	Good	Good	Good	Fair
10	18+620	Good	Good	Good	Good
11	19+362	Good	Good	Good	Good
12	19+501	Good	Good	Good	Good
13	20+039	Good	Good	Good	Good
14	20+074	Good	Good	Good	Fair
15	20+416	Good	Good	Good	Fair
16	21+078	Good	Good	Good	Good
17	21+654	Good	Good	Good	Good
18	23+011	Good	Good	Good	Good
19	24+303	Good	Good	Good	Good
20	24+740	Good	Good	Good	Good
21	24+951	Good	Good	Good	Good
22	25+001	Good	Good	Good	Good
23	25+493	Good	Good	Good	Good
24	26+375	Good	Good	Good	Good
25	26+691	Good	Good	Good	Good
26	26+912	Good	Good	Good	Good
27	27+456	Good	Good	Good	Good
28	27+745	Good	Good	Good	Good
29	28+831	Good	Good	Good	Good
30	29+135	Good	Good	Good	Fair
31	29+380	Good	Good	Good	Fair
32	29+611	Good	Good	Good	Good
33	29+849	Good	Good	Good	Fair
34	30+241	Good	Good	Good	Good
35	30+865	Good	Good	Good	Good
36	33+123	Good	Good	Good	Fair
37	33+480	Good	Good	Good	Fair
38	34+261	Good	Good	Good	Not visible

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
39	34+956	Good	Good	Good	Good
40	35+517	Good	Good	Good	Good
41	36+000	Good	Good	Good	Good
42	36+214	Good	Good	Good	Fair
43	36+294	Good	Good	Good	Fair
44	37+991	Good	Good	Good	Fair
45	38+303	Good	Good	Good	Good
46	38+918	Good	Good	Good	Good
47	39+303	NV	Fair	Good	Good
48	39+865	Good	Good	Good	Good
49	40+344	NV	Fair	Good	Good
50	40+755	Good	Good	Good	Good
51	40+989	Good	Good	Good	Good
52	41+778	Good	Good	Good	Good
53	41+883	Good	Good	Good	Good
54	42+422	Good	Good	Good	Good
55	43+430	Good	Good	Good	Good
56	44+020	Good	Good	Good	Good
57	44+270	Good	Good	Good	Good
58	46+351	Good	Good	Good	Good
59	46+572	Good	Good	Good	Good
60	49+836	Good	Good	Good	Good
61	50+952	Good	Good	Good	Good
62	51+382	Good	Good	Good	Good
63	51+712	Good	Good	Good	Good
64	52+296	Good	Good	Good	Good
65	56+940	Good	Good	Good	Good
66	57+393	Good	Good	Good	Good
67	58+109	Good	Good	Good	Good
68	58+235	Good	Good	Good	Good
69	58+577	Good	Good	Good	Good
70	58+938	Good	Good	Good	Good
71	59+285	Good	Good	Good	Good
72	59+476	Good	Good	Good	Good
73	59+746	Good	Good	Good	Good
74	59+849	Good	Good	Good	Good
75	60+104	Good	Good	Good	Good
76	60+170	Good	Good	Good	Good
77	60+734	Good	Good	Good	Good
78	61+080	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
79	61+255	Good	Good	Good	Good
80	61+794	Good	Good	Good	Good
81	62+183	Good	Good	Good	Good
82	62+707	Good	Good	Good	Good
83	63+075	Good	Good	Good	Good
84	63+290	Good	Good	Good	Good
85	63+454	Good	Good	Good	Good
86	63+606	Good	Good	Good	Good
87	63+785	Good	Good	Good	Good
88	64+199	Good	Good	Good	Good
89	64+611	Good	Good	Good	Good
90	64+899	Good	Good	Good	Good
91	65+957	Good	Good	Good	Good
92	66+312	Good	Good	Good	Good
93	66+540	Good	Good	Good	Good
94	66+812	Good	Good	Good	Good
95	67+044	Good	Good	Good	Good
96	67+330	Good	Good	Good	Good
97	67+483	Good	Good	Good	Good
98	67+726	Good	Good	Good	Good
99	67+970	Good	Good	Good	Good
100	68+059	Good	Good	Good	Good
101	68+564	Good	Good	Good	Good
102	68+872	Good	Good	Good	Good
103	69+032	Good	Good	Good	Good
104	69+850	Good	Good	Good	Good
105	70+289	Good	Good	Good	Good
106	70+581	Good	Good	Good	Good
107	70+651	Good	Good	Good	Good
108	71+045	Good	Good	Good	Good
109	71+313	Good	Good	Good	Good
110	72+126	Good	Good	Good	Good
111	72+190	Good	Good	Good	Good
112	72+834	Good	Good	Good	Good
113	73+545	Good	Good	Good	Good
114	73+780	Good	Good	Good	Good
115	74+218	Good	Good	Good	Good
116	74+631	Good	Good	Good	Good
117	76+320	Good	Good	Good	Good
118	76+593	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
119	76+868	Good	Good	Good	Good
120	76+956	Good	Good	Good	Good
121	77+000	Good	Good	Good	Good
122	77+200	Good	Good	Good	Good
123	78+000	Good	Good	Good	Good
124	79+196	Good	Good	Good	Good
125	80+580	Good	Good	Good	Good
126	83+030	Good	Good	Good	Good
127	83+582	Good	Good	Good	Good
128	83+960	Good	Good	Good	Good
129	84+120	Good	Good	Good	Good
130	88+520	Good	Good	Good	Good
131	89+130	Good	Good	Good	Good
132	89+850	Good	Good	Good	Good
133	93+260	Good	Good	Good	Good
134	94+500	Good	Good	Good	Good
135	96+690	Good	Good	Good	Good
136	98+900	Good	Good	Good	Good
137	102+034	Good	Good	Good	Good
138	104+581	Good	Good	Good	Good
139	106+800	Good	Good	Good	Good
140	107+293	Good	Good	Good	Good
141	107+578	Good	Good	Good	Good
142	107+636	Good	Good	Good	Good
143	107+780	Good	Good	Good	Good
144	108+186	Good	Good	Good	Good
145	109+414	Good	Good	Good	Good
146	110+129	Good	Good	Good	Good
147	111+060	Good	Good	Good	Good
148	111+650	Good	Good	Good	Good
149	112+250	Good	Good	Good	Good
150	112+550	Good	Good	Good	Good
151	112+977	Good	Good	Good	Good
152	113+080	Good	Good	Good	Good
153	114+308	Good	Good	Good	Good
154	115+510	Good	Good	Good	Good
155	116+969	Good	Good	Good	Good
156	118+530	Good	Good	Good	Good
157	119+520	Good	Good	Good	Good
158	119+830	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
159	120+540	Good	Good	Good	Good
160	121+930	Good	Good	Good	Good
161	122+820	Good	Good	Good	Good
162	123+226	Good	Good	Good	Good
163	123+615	Good	Good	Good	Good
164	124+483	Good	Good	Good	Good
165	124+920	Good	Good	Good	Good
166	125+437	Good	Good	Good	Good
167	126+036	Good	Good	Good	Good
168	127+235	Good	Good	Good	Good
169	127+470	Good	Good	Good	Good
170	127+678	Good	Good	Good	Good
171	128+852	Good	Good	Good	Good
172	130+322	Good	Good	Good	Good
173	130+660	Good	Good	Good	Good
174	131+066	Good	Good	Good	Good
175	132+610	Good	Good	Good	Good
176	132+920	Good	Good	Good	Good
177	133+310	Good	Good	Good	Good
178	135+230	Good	Good	Good	Good
179	135+447	Good	Good	Good	Good
180	135+992	Good	Good	Good	Good
181	136+421	Good	Good	Good	Good
182	136+875	Good	Good	Good	Good
183	137+450	Good	Good	Good	Good
184	137+898	Good	Good	Good	Good

Condition of Box/Slab Culverts

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	13+518	Good	Good	Good	Good	Good
2	14+056	Good	Good	Good	Good	Good
3	15+498	Good	Good	Good	Good	Good
4	16+563	Good	Good	Good	Good	Good
5	16+950	Good	Good	Good	Good	Good
6	18+248	Good	Good	Good	Good	Good
7	20+907	Good	Good	Good	Good	Good
8	21+336	Good	Good	Good	Good	Good
9	21+449	Good	Good	Good	Good	Good
10	21+813	Good	Good	Good	Good	Good
11	22+636	Good	Good	Good	Good	Good
12	23+452	Good	Good	Good	Good	Good
13	32+307	Good	Good	Good	Good	Good
14	36+693	Good	Good	Good	Good	Good
15	37+715	Good	Good	Good	Good	Good
16	38+560	Good	Good	Good	Good	Good
17	42+788	Good	Good	Good	Good	Good
18	43+191	Good	Good	Good	Good	Good
19	44+903	Good	Good	Good	Good	Good
20	47+998	Good	Good	Good	Good	Good
21	49+198	Good	Good	Good	Good	Good
22	50+735	Good	Good	Good	Good	Good
23	51+907	Good	Good	Good	Good	Good
24	52+843	Good	Good	Good	Good	Good
25	53+014	Good	Good	Good	Good	Good
26	53+306	Good	Good	Good	Good	Good
27	54+657	Good	Good	Good	Good	Good
28	55+182	Good	Good	Good	Good	Good
29	55+301	Good	Good	Good	Good	Good
30	56+208	Good	Good	Good	Good	Good
31	56+430	Good	Good	Good	Good	Good
32	60+324	Good	Good	Good	Good	Good
33	67+224	Good	Good	Good	Good	Good
34	67+575	Good	Good	Good	Good	Good
35	74+861	Good	Good	Good	Good	Good
36	75+280	Good	Good	Good	Good	Good
37	76+356	Good	Good	Good	Good	Good
38	76+394	Good	Good	Good	Good	Good
39	78+188	Good	Good	Good	Good	Good

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
40	78+320	Good	Good	Good	Good	Good
41	81+062	Good	Good	Good	Good	Good
42	81+545	Good	Good	Good	Good	Good
43	81+800	Good	Good	Good	Good	Good
44	81+951	Good	Good	Good	Good	Good
45	84+633	Good	Good	Good	Good	Good
46	85+522	Good	Good	Good	Good	Good
47	86+266	Good	Good	Good	Good	Good
48	86+763	Good	Good	Good	Good	Good
49	87+674	Good	Good	Good	Good	Good
50	88+250	Good	Good	Good	Good	Good
51	89+379	Good	Good	Good	Good	Good
52	90+740	Good	Good	Good	Good	Good
53	91+250	Good	Good	Good	Good	Good
54	92+200	Good	Good	Good	Good	Good
55	95+190	Good	Good	Good	Good	Good
56	95+548	Good	Good	Good	Good	Good
57	97+290	Good	Good	Good	Good	Good
58	98+304	Good	Good	Good	Good	Good
59	99+144	Good	Good	Good	Good	Good
60	100+319	Good	Good	Good	Good	Good
61	101+091	Good	Good	Good	Good	Good
62	101+484	Good	Good	Good	Good	Good
63	102+178	Good	Good	Good	Good	Good
64	102+692	Good	Good	Good	Good	Good
65	104+274	Good	Good	Good	Good	Good
66	105+714	Good	Good	Good	Good	Good
67	106+194	Good	Good	Good	Good	Good
68	108+873	Good	Good	Good	Good	Good
69	112+450	Good	Good	Good	Good	Good
70	117+690	Good	Good	Good	Good	Good
71	118+950	Good	Good	Good	Good	Good
72	121+200	Good	Good	Good	Good	Good
73	121+580	Good	Good	Good	Good	Good
74	124+626	Good	Good	Good	Good	Good
75	132+078	Good	Good	Good	Good	Good

Annexure 3: Operation & Maintenance cost

Routine Maintenance cost for 1 year

Item	Frequency	Unit	No	Frequency per year	Quantity	Rate (Rs.)	Amount (Rs.)	Remarks
General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km.	93.992	12	4	350	15,79,066	04 nos of Labour
General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km.	32.28	24	4	350	10,84,608	04 nos of Labour
Watering in Median Plants	Once in Week	Km.	126.272	52	1	1939	1,27,31,753	01 nos of Labour
Watering in Avenue plants	Once in Week	Km.	93.992	52	94	1939	94,77,025	
Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km.	93.992	12	12	21000	2,52,000	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
ROW Cleaning	Half yearly	Km.	88.3904	2	10	350	6,18,733	10 Nos of labour per KM (70% of the Project length)
Cleaning of Culverts	Half yearly	Nos.	260	2	3	650	10,14,000	3 nos of Labour along with JCB or Excavator
Road Furniture Cleaning	Quarterly	Km.	126.272	4	2	350	3,53,562	02 nos of Labour
Maintenance of Bus shelters	Monthly	Nos.	43	12	2	350	3,61,200	2 nos/ Bus shelter/month
General Cleaning in Building & Facilities	Daily	Nos.	4	12	60	350	10,08,000	02 nos of Labour for 30 days
Bridges	Half yearly	Nos.	14	2	4	350	39,200	04 nos of Labour for removal of vegetation/Structure
Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	15	1	550	124	10,23,000	2.5% of CW area

Item	Frequency	Unit	No	Frequency per year	Quantity	Rate (Rs.)	Amount (Rs.)	Remarks
								considered 22.0x1000x2.5%
						Total	**2,95,42,147**	
EQUIPMENT SUPPLY								
TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.		12	2	400000	8,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Water Tanker Cap 12 KL for Median	Monthly	Nos.	126.272	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Tractor Mounted Water Tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Mechanical Sweeper	Monthly	Nos.		12	2	250000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Grass cutter	Monthly	Nos.	126.272	12	6	12000	75,763	(12000/year)

Item	Frequency	Unit	No	Frequency per year	Quantity	Rate (Rs.)	Amount (Rs.)	Remarks
Manhoise/ Skyscraper	Monthly	Nos.		12	1	400000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Bikes	Monthly	Nos.	126.272	12	8	2500	2,52,544	15 Km/Bike/Month
Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month
Toll plaza AMC	Yearly	Nos.		12	1	100000	12,00,000	100000/month
						Total	**35,28,307**	
Patrolling vehicle	Monthly	Nos.	12		3	300000	900000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Ambulance	Monthly	Nos.	12		2	240000	480000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1 Ambulance/toll plaza)
Tow away trucks and Crane	Monthly	Nos.	12		2	400000	800000	(2000000 is the cost of vehicle, considering 20%

Item	Frequency	Unit	No	Frequency per year	Quantity	Rate (Rs.)	Amount (Rs.)	Remarks
								Rental per year) including maintenance
Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		2	5000	120000	5000 Per month for per set (Per set - Per toll plaza)
Consumables for Route Patrolling & Crane	Monthly	Nos.	12		2	5000	120000	5000 Per month for per set (Per set - Per toll plaza)
							24,20,000	
Routine Maintenance Cost							**3,54,90,455**	

Incidental cost for 1 year (1st Cycle)

Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
Road marking	Half yearly	Sqm.	1	1	371	516	1,91,436	33 % of Total Project length on B/S for 1 year
Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	66	168	11,088	2% of Flexible Pavement (changed quantities to only Service road portion)
Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	3788	225	25,56,900	10% of total Shoulder length throughout the project
Sign Board	Quarterly	Ls.	1	4	1	200000	8,00,000	5 % of Total sign boards per year (Lumpsum of 200000)
MBCB	Monthly	RMT.			3124	2400	74,97,600	3% of Total qty per year - (considered 2400 for km per month)
Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	126.27	4	32	2250	2,88,000	5 % of total stones per year (unable to understand the backup)
ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
Kerb	Yearly	Km.	126.27	1	5051	250	12,62,750	2 % of total Kerbings per year
Electrical Poles	Yearly	Nos.	4136	1	124	55000	68,20,000	3 % of total poles per year
Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	2046.00	4000	81,84,000	Considered 0.3% of the total volume in O & M period per year
Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT.	2574		77	3985	3,06,845	3% of Length replacement in every 5 years
Total amount for 1 Year							**2,79,18,619**	

Operational Expenses

S.NO.	PARTICULARS	Amount
1	Man Power	₹ 1,21,20,000
2	Fuel for Generator & Vehicles	₹ 1,93,44,000
3	Electricity	₹ 1,12,20,000
4	Stationary	₹ 1,00,000
5	Replacement of Electrical Fixtures	₹ 50,99,982
6	Refurbishment of Toll Plaza Equipment	₹ 6,00,000
	Total Amount	**₹ 4,84,83,982**

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	01-06-2019					
1st Major Maintenance - Highway	01-06-2026	27,81,93,178	7.00	3.0%	33,66,13,745	33.66
1st Major Maintenance - Structures	01-06-2026	65,27,556	7.00	3.0%	78,98,343	0.79
2nd Major Maintenance - Highways	01-06-2032	27,81,93,178	13.00	3.0%	38,66,88,517	38.67
2nd Major Maintenance - Structures	01-06-2032	65,27,556	13.00	3.0%	90,73,303	0.91
				Total	₹ 74,02,73,908	74.03

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	2,09,615.63	14.00	29,34,619
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	8,384.63	7,682.00	6,44,10,689
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	2,27,289.90	250.00	5,68,22,475
4	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm	11,79,229.00	130.00	15,32,99,770
	Total				**27,74,67,553**
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative.	Rmt		380.00	

2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	1,406.25	516.00	7,25,625
3	Road Studs	Nos		750.00	
	Total Chapter 9			-	**7,25,625**
	Grand Total				**27,81,93,178**

Annexure 4: Letter of Acceptance

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

Lucknow-Sultanpur/NH-56/Hybrid Annuity/UP(Tech-Div)/2015/ 86748 Dated: 09.08.2016

To,

Dilip Buildcon Limited,
Plot No. 5,
Inside Goving Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal 426 016 (M. P.)
Email: db@dilipbuildcon.co.in; dilipb_99@rediffmail.com

Kind attention: Shri Kundan Kumar Das, AGM Bussiness Development

Sub: 4-Laning of Lucknow-Sultanpur section of NH-56 from km 11.500 (design chainage km 11.500) to km 134.700 (design chainage km 138.925) in the State of Uttar Pradesh under NHDP Phase-IV on hybrid annuity mode-**Letter of Award (LOA)**.

Ref: Request For Proposal submitted on 13.05.2016.

Dear Sir,

This is to notify that based on your bid submitted for the project of "4-Laning of Lucknow-Sultanpur section of NH-56 from km 11.500 (design chainage km 11.500) to km 134.700 (design chainage" and offer a Bid Price consisting of Bid Project Cost of Rs 2016.0 crores (Rupees two thousand sixteen crore only) and First Year O&M Cost of Rs 5.0 crore (Rs five crore only) is hereby accepted by NHAI and declaring you as the "Selected bidder" as per the provisions of Clause 1.2.6 of RFP.

2. In accordance with the Clause 3.8.4 of the RFP, you are requested to sign the duplicate copy of the LoA and return the same as your acknowledgment within 7 (Seven) days of receipt of LoA. Thereafter, pursuant to Clause 1.3 of RFP, you are required to execute the Concession Agreement within 45 days from issue of LOA.

3. You shall promote and incorporate the Concessionaire as a limited liability company under the Companies Act 2013, as the entity which shall undertake and perform the obligations and exercise the rights of the Bidder under the LOA, including the obligation to enter into this Concession Agreement pursuant to the LOA for executing the Project. The Concessionaire shall, for the performance of its obligations hereunder during the Construction Period, provide to the Authority no later than 30 (thirty) days from the date of this agreement, an irrevocable and unconditional guarantee from a Bank for a sum equivalent to Rs 100.80 crores (Rupees one hundred crore eighty lakh) in the form set forth in Schedule-F (the "Performance Security").

Continued 2/-

Annexure 5: Provisional Certificate

TPF GETINSA EUROESTUDIOS, S.L.

In association with

Segmental Consulting & Infrastructure Advisory (P) Ltd

Provisional Certificate

1) I, Dipt Chandra, Authorized representative of M/s TPF Getinsa Euroestudios, S.L. in association with Segmental Consulting and Infrastructure Advisory (P) Ltd. acting as Independent Engineer under and in accordance with the concession agreement dated 24.10.2018 (the 'Agreement'), for development & operation of the project Four-laning of Lucknow-Sultanpur Section of NH-56 (New NH-731) from km. 11.500 to km. 134.700 design chainage km. 11.500 to km. 138.825 in the state of Uttar Pradesh NHDP phase-IV (the 'Project') on design, build, operate and transfer on Hybrid Annuity mode basis through DBL Lucknow Sultanpur Highways Limited (Name of Concessionaire), hereby certify that the tests specified in Article-14 and Schedule-I of the agreement have been undertaken for the project from km. 11.500 to km. 134.700 (design chainage km. 11.500 to km. 138.825) of the project to satisfactory compliance thereof with the provisions of the agreement except for a length of 390 M as mentioned in the punch list 'A' & 'B'.

2) Construction works forming part of the project/section of the project that are found to be incomplete and / or deficient have been specified in the punch list appended hereto, on punch list 'A' and 'B' and the concessionaire has signed and accepted that it shall complete and / or rectify all such works in the time and manner set forth in the agreement. Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to local unforeseen reason and the provisional certificate cannot be withheld on this account. I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the project from km. 11.500 to km. 134.700 (design chainage km. 11.500 to km. 138.825 except for a length of 390 M of the project pending completion thereof.

3) In view of the foregoing, I am satisfied that the project highway from 11.500 to km. 138.825 except 3-laning 390 M length at different locations, can be safely and reliably placed in commercial service of the users thereof, and in terms of the Agreement, the project highway from km. 11.500 to km. 138.825 is hereby provisionally declared fit for entry into commercial operation on this the 30th day of April 2019.

ACCEPTED, SIGNED, SEALED AND DELIVERED

For and on behalf of
CONCESSIONAIRE by:

30/04/19

Signature:
Name: Raj Nandan Singh
Designation: Authorized Signatory & Sr. Manager in Design & Technical Cell
M/s DBL Lucknow Sultanpur Highways Limited
House No.B-24, Jagdishpur Industrial Area
Bhadi, Dist. Amethi, (UP)

SIGNED, SEALED AND DELIVERED

For and on behalf of
INDEPENDENT ENGINEER by:

30/04/19

Name: Dipt Chandra
Designation: Authorized Signatory & Team Leader
M/s TPF Getinsa Euroestudios, S.L.
In association with
Segmental Consulting and Infrastructure Advisory (P) Ltd.
A-40, Aseem City, Kisanganj ROC
Near Cultural Park, Telibagh, Lucknow
226025 (UP)

Corporate Office & Billing Address: Plot No. 6, Pocket 11, Phase IV, Sector 35, Sohna Road, Gurgaon 122001
Tel: 0124-4343400 Email: info@segmental.in

TPF GETINSA EUROESTUDIOS, S.L.
in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
TL Office Address: A-80 South City, Raebareli Road,
Near Saheed Path, Telibagh Lucknow -226025 (UP)
E-Mail: Scia012.Lucknow@segmental.in
FCRN: F04460, CIN: U74140DL2009PTC188591

TPF-GE-SCIA/12/IE/NH-56/2019/ 878 Date: 30.04.2019

To,
The Authorized signatory
M/S DBL Lucknow Sultanpur Highway Ltd.
House No.B-25, Jagdishpur Industrial Area
BHEL, Dist. Amethi, (U.P),

Sub: Independent Engineer services for four laning of Lucknow Sultanpur Section of NH-56 (New NH-731) from km.11.500 (Design Chainage km.11.500) to km.134.700 (Design Chainage km.138.925) in the state of UP NHDP Phase-IV on Hybrid Annuity Mode:- **Issuance of Provisional Certificate as per clause 14.3.1 of concession agreement. reg.**

Ref:- 1) Concessionaire letter no. DBL/IE/NH-56/Lucknow-Sultanpur/2019/418 dated 15.02.2019.
2) IE Letter no. TPF-GE-SCIA/12/IE/NH-56/2019/804 dated 28.02.2019.
3) PIU letter no. NHAI/PIU/LKO/NH-56/4-lane/2019/3064 dated 01.03.2019.
4) RO UP (E) letter no.70011/2/RO/UP(E)/2019/519 dated 08.03.2019.
5) Concessionaire letter no. DBL/IE/NH-56/Lucknow-Sultanpur/2019/440 dated 23.04.2019.
6) IE Letter no. TPF-GE-SCIA/12/IE/NH-56/2019/873 dated 26.04.2019.
7) PIU letter no. NHAI/PIU/LKO/NH-56/PCOD/2019/273 dated 26.04.2019.
8) RO UP (E) letter no.15019/29/RO/UP(E)/VNS/2018/5770 dated 29.04.2019.
9) PIU letter no. 139794/NHAI/PIU/LKO/NH-56/4-lane/2018/283 dated 29.04.2019.

Dear Sir,

With reference to your letter cited above requesting for issuance of provisional certificate for the completed part of the project highway from km. 11.500 to km. 138.925 in accordance with clause 14.3.1 of the concession agreement, we are pleased to state as follows.

1) Test stipulated in clause 14.1.2 and schedule-I of the concession agreement have been completed successfully for the project highway of length 127.035 km.

2) The completed stretches of 127.035 km. of the project highway except a length of 390 metre, can be safely and reliably placed in commercial service for the road users thereof, and in terms of the concession agreement. Therefore, the length of 127.035 km. of project highway is hereby provisionally fit for entry into commercial operation on this 30th day of April, 2019.

Cont...

Corporate Office & Billing Address: Unit No. 419-421, Space IT Park, Tower B4, Sector 49, Sohna Road, Gurgaon -122002
Ph. +91 124 4211847/48/49 Fax: +91 124 4211850 Email: info@segmental.in

TPF GETINSA EUROESTUDIOS, S.L.

Segmental Consulting & Infrastructure Advisory (P) Ltd

3) Accordingly, the provisional certificate dated 30th April 2019 in the form set forth in schedule-J duly signed by Independent Engineer and your authorized representative for completion of length of 127.035 km. of project highway, in accordance with the provision of clause 14.3.1 of the concession agreement is enclosed herewith alongwith the punch list comprising of punch list "A" to be completed within 90 days from the date of issuance of "Provisional certificate" duly signed by the concessionaire and IE's authorized representative and punch list "B" showing the length of the project highway in 2-lane configuration which could not be undertaken due to land acquisition issues and reasons which are not attributable to the concessionaire are duly signed by the authorized representative of IE and concessionaire. The concessionaire will take up and finish the work as soon as the issue of hindrances / obstructions are resolved.

4) It is agreed upon by the concessionaire that in the stretches ie. from km. 11.500 to 11.580 and km. 56.840 to 56.890 on both left and right hand side where flexible pavement has been done in place of concrete pavement (PQC) due to local unforeseen reason, necessary action shall be initiated and any difference in cost between rigid pavement and flexible pavement shall be adjusted from the already approved change of scope amount of replacement of flexible to rigid pavement vide NHAI letter no. Lucknow Sultanpur NH-56/Hybrid Annuity/UP (T)/2015/123308 dated 07th Sep. 2018.

5) With the issue of provisional certificate total length of 127.035 km. is provisionally declared fit for entry into commercial operation on the 30th day of April 2019.

This is for your kind information and necessary action please.

Thanking you.

Yours faithfully,

30/04/19

(DIPT CHANDRA)
Team Leader

Encl: 1) Provisional certificate in form schedule-J
2) Punch list no. A
3) Punch list no. B

Copy to: 1. CGM (Tech.) cum RO-UP (E.) NHAI, Varanasi.
2. Project Director NHAI, PIU Lucknow for Kind Information please.
3. Chief Project Coordinator, H.O. Gurugram.

Four laning of Lucknow Sultanpur Section of NH-56 (New NH-731) from km.11.500 (Design Chainage km.11.500) to km.134.700 (Design Chainage km.138.925) in the state of UP NHDP Phase-1V on Hybrid Annuity mode

PUNCH LIST - "B"

The Following Length is under Punch List B ,Which will be completed by concessionaire whenever Authority provides the Land/clear .

SNo	Chainage		Side	Length (Km)	Remarks
	From	To			
1	33490	33540	LHS	0.05	Hindrance (Gangaganj)
2	79065	79095	LHS	0.03	Hindrance (Railway)
3	79065	79095	RHS	0.03	Hindrance (Railway)
4	134170	134420	LHS	0.25	Hindrance (Railway)
5	77720		RHS		Hindrance (Land Dispute)
Total				0.36	

For & on behalf of
DBL Lucknow Sultanpur Highways Limited

(Raj Narayan Nigam)
Authorised Signatory

Independent Engineer

Four laning of Lucknow Sultanpur Section of NH-56 (New NH-731) from km.11.500 (Design Chainage km.11.500) to km.134.700 (Design Chainage km.138.825) in the state of UP NHDP Phase-IV on Hybrid Annuity mode

PUNCH LIST - A

The Following Balance Works must be completed within 90 days from Issue of Provisional Completion Certificate as Per article 14.4.1 of Concession Agreement .

Sl. No.	Description	Unit	Quantity Blance to be done	Rate	Amount	Remarks
1	PCC	Cum	45	11787.40	530433	0.5 m wide PCC Balance from Ch. 15+850 to 15+880 in RHS
2	Service Road/ Slip Road	km	0.7	24811654.74	17368158	
3	RCC Drain cum foot path (line drain)	km	1.225	15134577.52	18539857	
4	Earthen drain	km	20	88000	1760000	
5	Rain Water Harvesting	No.	16	500000	8000000	
6	Major Junction	No.	2	1000000	2000000	Road Marking, Road furniture, is in progress
7	Minor Junction	No.	6	500000	3000000	
8	ROB	No.	0	LS	10000000	LIGHTING,DRAINAGE ARRANGEMENT AND STAIRCASE WORK TO BE COMPLETED
9	Boundary stone	No.	2597	1024	2659328	Fixing & Casting in progress
10	Guard Rail	Rm	15399	2700	41577300	In Progress
11	Antiglare screen	km	52.5	750000	24375000	
12	Lighting at builtup area,Truck layby,Bus layby ,Toll Plaza,Weigh bridge,parking and O&M Building	No.	460	40000	18400000	
13	Road side (Avenue) Plantation Both Side	km	66.33	194565.80	12905549	
14	Land scaping at Toll Plaza,Major junction,wayside amenities,Truck layby	No.	11	100000	1100000	In progress
15	ROW Fencing(Both Side)	km	37	2600000	96200000	AT TOLL PLAZAS,BYPASS,REALIGNMENT
16	Truck lay bye	No.	0	LS	500000	Misc work in progress
17	Rest Area at Truck lay Bye	No.	2	100000	200000	
18	O & M Building	No.	2	2000000	4000000	work in Progress
19	Wayside Aminties At 73+300 LHS	No.	1	LS	500000	
				Total	263085192	
				Say Rs.	26.31 Cr.	

For Lucknow Sultanpur Highways Limited
(Raj Narayan Nigam)
Authorised Signatory

Independent Engineer

Annexure 6: Completion Certificate

TPF GETINSA EUROESTUDIOS, S.L.
in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
TL Office Address: A-80 South City, Raebareli Road,
Near Saheed Path, Telibagh Lucknow -226025 (UP)
E-Mail: Scia012.Lucknow@segmental.in
FCRN: F04460, CIN: U74140DL2009PTC188591

TPF-GE-SCIA/12/IE/NH-56/2019/946 Date: 06.07.2019

To,
The Authorized signatory
M/S DBL Lucknow Sultanpur Highway Ltd.
House No.B-25, Jagdishpur Industrial Area
BHEL, Dist. Amethi, (U.P),

Sub: Independent Engineer services for four laning of Lucknow Sultanpur Section of NH-56 (New NH-731) from km.11.500 (Design Chainage km.11.500) to km.134.700 (Design Chainage km.138.925) in the state of UP NHDP Phase-IV on Hybrid Annuity Mode:- **issue of final completion certificate under Article 14.2 of concession agreement. reg.**

Ref:- 1) IE Letter no. TPF-GE-SCIA/12/IE/NH-56/2019/878 dated 30.04.2019.
2) Concessionaire letter no. DBL/IE/NH-56/Lucknow-Sultanpur/2019/315 dated 17.06.2019.
3) IE Letter no. TPF-GE-SCIA/12/IE/NH-56/2019/937 dated 25.06.2019.
4) Concessionaire letter no. DBL/IE/NH-56/Lucknow-Sultanpur/2019/455 dated 27.06.2019.
5) RO UP(E.) letter no. 15019/29/RO/UP(E.)/2019/6346 dated 02.07.2019.
6) PIU letter no. 139794/NHAI/PIU/LKO/NH-56/4-lane/2019/859 dated 02.07.2019.

Dear Sir,

In continuation of our letter no. 878 dated 30.04.2019 through which provisional completion certificate alongwith Punch list "A" and "B" was issued under clause 14.3 of the CA with a time limit of completion of Punch list items within 90 days of the date of issue of provisional certificate.

After completion of the Punch list "A" item, a request was made by you for issuance of final completion certificate vide your letter referred above in sl. no. 2. However, vide our letter no. 937 dated 26.06.2019, we have brought in your knowledge about some incomplete works which were in progress but not considered as completed. Finally after attending those works, you have again requested for issuance of final completion certificate vide your letter no. 455 dated 27.06.2019.

Cont...

Corporate Office & Billing Address: Unit No. 419-421, Space IT Park, Tower B4, Sector 49, Sohna Road, Gurgaon -122002
Ph. +91 124 4211847/48/49 Fax: +91 124 4211850 Email: info@segmental.in

TPF GETINSA EUROESTUDIOS, S.L.
in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
TL Office Address: A-80 South City, Raebareli Road,
Near Saheed Path, Telibagh Lucknow -226025 (UP)
E-Mail: Scia012.Lucknow@segmental.in
FCRN: F04460, CIN: U74140DL2009PTC188591

Your submission was examined and after a joint inspection of site by PD NHAI PIU, concessionaire representatives and undersigned, it is found that all pending works of Punch list "A" have been completed. The justification provided by you for not fixing the guard rail in the gap portion was also found to be true and accordingly the authority has been informed. As far as the item of Punch list "B" are concerned, the land/hindrance has not been cleared as on date and therefore the reason of non-completion is solely attributable to the authority.

However, the length of 360 M of work in 2-lane configuration shall be mentioned in the completion certificate and you have to take up and finish the same as and when the land issue is resolved.

In this connection, our Chief Project Coordinator from Head Office has also inspected the site from 30.06.2019 to 01.07.2019 and has found that the project is fit for entry into the commercial operation and has given his consent for issuance of completion certificate. The concurrence of RO UP(E.) conveyed to IE by PD NHAI PIU Lucknow on 03.07.2019 vide letter no. 859 dated 02.07.2019 for issuance of completion certificate. As such, we are issuing the completion certificate with effect from 3rd July'2019 in the form set forth in schedule-J of the concession agreement.

However, certain works as stated below which are pending at your level need to be submitted to us for our scrutiny and onward action.

1) The O&M manual has not been finalized due to delay on your part. Please submit the relevant detail and take approval.

2) At certain locations, flexible pavement has been done or likely to be done as per Punch list "B" in place of rigid pavement and therefore you need to submit the proposal for reduction in scope of the project under Article 16.6 of the concession agreement. The locations are as under.

i) Km. 11+500 to km. 11+580 (Both Side)- 80 M flexible pavement followed in place of rigid pavement.

ii) Km. 79+060 to 79+100 (Both side)- 40 M railway crossing involved as such section of rigid pavement cannot be followed.

iii) Km. 54+840 to 54+890 (Both side) - 50 M deduction shall be made from the COS already processed for replacement of flexible pavement with rigid pavement.

3) Inventory of the project highway is required to be submitted taking into consideration all the movable and immovable items.

Cont...

Corporate Office & Billing Address: Unit No. 419-421, Spaze IT Park, Tower B4, Sector 49, Sohna Road, Gurgaon -122002
Ph. +91 124 4211847/48/49 Fax: +91 124 4211850 Email: info@segmental.in

TPF GETINSA EUROESTUDIOS, S.L.
in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
TL Office Address: A-80 South City, Raebareli Road,
Near Saheed Path, Telibagh Lucknow -226025 (UP)
E-Mail: Scia012.Lucknow@segmental.in
FCRN: F04460, CIN: U74140DL2009PTC188591

4) The "As Built" drawing submitted by you are under checking and verification, you are required to depute your representative for the same for an early finalization of the quantities as per governing manual of specification of IRC:SP:84:2014 and contract provision vis-a-vis. The same shall be notified to you at a later date.

The requisite final completion certificate with effect from 3rd July'2019 as per clause 14.4.2 schedule-J format and incorporating the balance 360 metre of pending works as per the detail mentioned in Punch list "B" is enclosed herewith.

Thanking you,

Yours faithfully,

06/07/19

(DIPT CHANDRA)
Team Leader

Encl. 1) Completion certificate in form-J.
2) Punch list "B".

Copy to: 1. CGM (Tech.) cum RO UP (E.) NHAI, Varanasi.
2. Project Director NHAI, PIU Lucknow for Kind Information please.
3. Chief Project Coordinator, H.O. Gurugram.

Corporate Office & Billing Address: Unit No. 419-421, Space IT Park, Tower B4, Sector 49, Sohna Road, Gurgaon -122002
Ph. +91 124 4211847/48/49 Fax: +91 124 4211850 Email: info@segmental.in

TPF GETINSA EUROESTUDIOS, S.L.
in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
TL Office Address: A-80 South City, Raebareli Road,
Near Saheed Path, Telibagh Lucknow -226025 (UP
E-Mail: Scia012.Lucknow@segmental.in
FCRN: F04460, CIN: U74140DL2009PTC188591

Completion Certificate

1) I, Dipt Chandra, Authorized representative of M/s TPF Getinsa Euroestudios, S.L in association with Segmental Consulting and Infrastructure Advisory (P) Ltd. acting as Independent engineer under and in accordance with the concession agreement dated 24.10.2016 (the "Agreement"), for development & operation of the Project Four-Laning of Lucknow-Sultanpur Section of NH-56 (New NH-731) from Km 11.500 to Km 134.700/design Chainage km 11.500 to km138.925 in the state of utter Pradesh NHDP phase-IV (the "Project") on design, build, operate and Transfer on Hybrid Annuity mode basis through DBL Lucknow Sultanpur Highways Limited (Name of the Concessionaire), hereby certify that the tests specified in Article-14 and schedule-I of the agreement have been successfully undertaken for the project from km.11.500 to km 134.700 / design Chainage km 11.500 to km 138.925 of the project to determine compliance thereof with the provisions of the agreement except 2-laning 360 M length at different locations reason attributable to Authority and pending completion thereof as mention in the punch list "B". I am satisfied that the project can be safely and reliably placed in commercial service of the Users thereof.

2) It is certified that, in terms of the aforesaid Agreement, all works forming par: of the Project have been completed except 2- laning 360 M length at different Location pending completion thereof mentioned in the Punch list "B" and the Project is hereby declared fit for entry into commercial operation on this day of **3rd July 2019**.

SIGNED, SEALED AND DELIVERED

For and on behalf of
INDEPENDENT ENGINEER by

TPF GETINSA EUROESTUDIOS S.L. getinsa euroestudios

06/07/19

Signature:
Name: Dipt Chandra
Designation: Authorized Signatory & Team Leader
M/s TPF Getinsa Euroestudios, S.L in association with
Segmental Consulting & Infrastructure Advisory (P) Ltd
Address: - A-80, South City, Raebareli Road,
Near Saheed Path, Telibagh, Lucknow -226025 (UP)

Corporate Office & Billing Address: Unit No. 419-421, Spaze IT Park, Tower 3H, Sector 49, Sohna Road, Gurgaon -122002
Ph. +91 124 4211847/48/49 Fax: +91 124 4211850 Email: info@segmental.in

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
National Highways Authority of India
(सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार)
(Ministry of Road Transport & Highways, Govt. of India)
परियोजना कार्यान्वयन इकाई, लखनऊ
Project Implementation Unit, Lucknow
3/248, विशाल खण्ड, गोमती नगर, लखनऊ-226010
3/248, Vishal Khand, Gomti Nagar, Lucknow-226010

दूरभाष / Phone: 91-522-2302167
ई-मेल / E-mail : luc@nhai.org
वेबसाइट / Website: www.nhai.org

139794/NHAI/PIU/LKO/NH-56/4-lane/2019/ 859 Dated 02.07.2019

To,

The Team Leader
M/s TPF Getinsa Euroestudios, S.L.
with Segmental Consulting & Infrastructure Advisory Pvt. Ltd.
A-80, South City, Raebareli Road, Telibag
Lucknow-226025

Sub: - Four laning of Lucknow Sultanpur Section of NH-56 (New NH-731) from Km. 11.500 (Design Chainage Km.11+500) to Km.134.700 (Design Chainage Km. 138+925) in the State of UP NHDP Phase-IV on Hybrid Annuity Mode.
-Regarding issuance of Completion certificate (COD)-reg.

Ref:- 1. Your letter no. TPF-GE-SCIA/12/IE/NH-56/2019/940 dated 28.06.2019
2. RO UP(E) letter no. 15019/29/RO/UP(E)/2019/6346 dated 02.07.2019

Sir,

Please refer to your above cited letter dated 28.06.2019 vide which you have sought concurrence of Competent Authority for issuance of Completion Certificate for the above mentioned project.

In this regard, it is to inform you that the Competent Authority i.e. RO-UP(E), Varanasi has conveyed cuncurrence for issuance of Completion Certificate vide letter dated 02.07.2019 (Copy enclosed).

This is for your information and further necessary action

Yours truly

(P. Siva Sankar)
General Manager (T)/Project Director

Copy to: -
- M/s DBL Lucknow Sultanpur Highways Ltd., for information please.

TPF GETINSA EUROESTUDIOS, S.L.
Received
Date: 03/07/2019
Sr. No.:
File No.:
By: Nisha

मुख्यालय : प्लाट सं0 जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली - 110 075 दूरभाष : 91-11-25074100/200
Head Office: Plot No. G-5 & 6, Sector- 10, Dwarka, New Delhi - 110 075 Phone : 91-11-25074100/200

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन एवं राजमार्ग मंत्रालय, भारत सरकार)
National Highways Authority of India
(Ministry of Road Transport & Highways, Govt. Of India)
क्षेत्रीय कार्यालय, उ०प्र० (पूर्व) वाराणसी
Regional Office - U.P. (East), Varanasi

Phone : 91-542-2260243
: 91-542-2260372
E-Mail : rovaranasi1@gmail.com
: rovaranasi@nhai.org
Website : www.nhai.org

15019/29/RO/UP(E)/2019/ 634 G

Date 02.07.2019

To,

Project Director
National Highways Authority of India
PIU-Lucknow.

Sub: Four Laning of Lucknow-Sultanpur section of NH-56 (new NH-231) from Km. 11.500 (design chainage- km. 11+500) to Km. 134.700 (design chainage km. 133+928) in the State of Uttar Pradesh, NHDP Phase-IV on Hybrid Annuity mode. Issuance of **Completion Certificate reg.**

Sir,

This has reference to PIU-Lucknow letter no. NHAI/PIU/LKO/NH-56/2019/818, dated 28.06.2019 enclosing therewith the letter of IE vide ref. TPF-GE-SCIA/12/IE/NH-56/2019/940, dated 26.06.2019, wherein the IE has certified that all the items mentioned in the punchlist 'A' appended with PCOD have been completed and the site has been inspected by the Independent Engineer alongwith Project Director and Concessionaire representative on dated 26.06.2019. The IE has further mention that length of 360 mtr. (Plane) (Punch list 'B') remained incomplete due to non handing over of land by the Authority even on the day of inspection and has stated that the same shall be completed by the Concessionaire as and when the land is handed over by the Authority. Accordingly, the IE has recommended for issuance of completion certificate in view of Article 14.2 of CA.

The Project Director also vide his letter referred above, has certified that he inspected the site alongwith Concessionaire and IE on 26.06.2019 and confirms that all the works have been completed.

In view of certification by Independent Engineer and the Project Director, the concurrence of this office is hereby accorded for issuance of completion certificate to the Concessionaire by IE in accordance with Concession Agreement.

2/7/19
(Rajeev Agrawal)
CGM (Tech) cum Regional Officer

Copy to: IE, M/s TPF Getinsa Euroestudios, S.L in association with Segmental Consulting & Infrastructure Advisory (P) Ltd.

मुख्यालय : प्लाट सं० जी-5 एवं 6, सेक्टर- 10, द्वारका, नई दिल्ली - 110 075, दूरभाष : 91-11-25074100/200
Head Office: Plot No G-5 & 6, Sector - 10 Dwarka, New Delhi - 110075 Phone: 91-11-...

A

Four lining of Lucknow Sultanpur Section of NH-56 (New NH-731) from km.11.500 (Design Chainage km.11.500) to km.134.700 (Design Chainage km.138.935) in the state of UP NHDP Phase-IV on Hybrid Annuity mode

PUNCH LIST - "B"

The Following Length is under Punch List B ,Which will be completed by concessionaire whenever Authority provides the Land/clear .

Sn.	Chainage		Side	Length (Km)	Remarks as on 30.04.2019	Status as on 26.06.2019
	From	To				
1	33450	33540	LHS	0.05	Hindrance (Gengagan)	ROW under hindrance
2	75085	75095	LHS	0.03	Hindrance (Railway)	ROW under hindrance
3	75065	75095	RHS	0.03	Hindrance (Railway)	ROW under hindrance
4	134170	134420	LHS	0.25	Hindrance (Railway)	ROW under hindrance
5	77720		RHS	Bus Shelter	Hindrance (Land Dispute)	ROW under hindrance
Total				0.35		

Concessionaire's Representative

MOHD. SALMAN IDRISI
Quantity Surveyor

Independent Engineer

Annexure 7: Insurance

Signer: ATUL JERATH
Date: Thu, Nov 12, 2020 15:10:17 IST
Location: NOIDA
Reason: Signing Policy at OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: 171200/44/2021/64	Prev Policy No	:
Cover Note No	:	Cover Note Dt	:
Insured's Code	: 118734077	Issuing Office Code	: 171200
Insured's Name	: DBL Lucknow Sultanpur Highways Ltd. (GSTIN: 09AAFCD8380G1ZD)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: B 25 PHASE II, SECTOR 5 JAGDISPUR, AMETHI, AMETHI, Uttar Pradesh, 227405	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: SULTANPUR 227405 / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	: 0265-2252274/0265-2357445/0265-2356033/

Period of Insurance : FROM 12:04 ON 12/11/2020 TO MIDNIGHT OF 11/11/2021

Collection No & Dt : DC_I_IND 3214001145 - 12/11/2020 GST INVOICE NO :2410030840 UIN :0

Gross Premium : 26,088 GST : 4,696 Stamp Duty : 1 Total : 30,784

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 5,21,77,538

1 Location of the Risk : AS PER LIST ATTACHED
4 Laning of Lucknow Sultanpur section of NH-56 from Km 11.500 to Km 134.700 in the state of Uttarpradesh under NHDP Phase IV on hybrid annuity mode
4 Laning of Lucknow Sultanpur section of NH-56 from Km 11.500 to Km 134.700 in the state of Uttarpradesh under NHDP Phase IV on hybrid annuity mode
UTTAR PRADESH - 227405

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		5,21,77,538

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :

Place : -
Date : 12/11/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001996

जारीकर्ता कार्यालय/Issuing Office
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9957E1ZB
Contact Number: 755 2692822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्त्रोत /Business Source: 910355
बिक्री चैनल कोड/Sales Channel Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number: 1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL LUCKNOW SULTANPUR HIGHWAYS LIMITED
पता/ Address: B 25 PHASE II, SECTOR 5 JAGDISPUR, AMETHI, AMETHI, UTTAR PRADESH, 227405, City: AMETHI, District: CHATRAPATI SHAHUJI MAHARAJ NGR, State: UTTAR PRADESH, PIN: 227405.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701460047
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAFCD8380G

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 1,83,67,513.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 33,06,152.00		
केरला बाढ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	88002003270087209 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनःप्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	32130081191000766 6 Dt. 27/03/2020
कुल /Total Amount	₹ 2,16,73,665.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Two Crore Sixteen Lakh Seventy Three Thousand Six Hundred Sixty Five Only.)
Location: Lucknow-Sultanpur section of NH-56, Uttar Pradesh Lucknow, Lucknow, 226001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic	Zone IV	17,29,52,30,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	1,06,81,70,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

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Page no: 1

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

November 06, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203786194200000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils .

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203786194200000 Page 1 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V022011112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203786194200000 Employees Compensation Insurance

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)	Business	Construction and Engineering
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		Phone		E Mail		Policy Issuance Date	06/11/2020

Period of Insurance	From Date & Time	03/11/2020 00:01 AM	To Date & Time	02/11/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹.Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203786194200000 Page 2 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 8: Change of Scope

Table 9.1 :Abstract -COS

S.No	COS item	DBL submitted Value in Cr	Status of COS
1	Replacing length of 6.34 Kms (2-lane) flexible pavement with rigid	6.76	Pending @ HQ
2	Replacement of 300mm dia HPC with NP4 1200mm dia	1.02	OK by NHAI HQ
3	Replacement of600mm dia HPC with NP4 1200mm dia	2.21	OK by NHAI HQ
4	Replacement of (4+4) Lane to (8+8) Lane @ 51+160	12.34	Final checking under progress at IE
5	Replacement of (4+4) Lane to (8+8) Lane @ 127+370	12.34	Final checking under progress at IE
6	Construction of VUP(1x12) conversion to VUP(2x19.5) @ 86+500	1.92	OK by NHAI HQ

Annexure 9: Toll plaza Equipment

LANE EQUIPMENT LIST

S. No.	Equipment Name	Quantity
ASOGRA TOLL PLAZA		
1	Automatic barrier	18
2	AVC	18
3	UIU	18
4	Traffic Light	19
5	OHLS	17
6	RFID	18
7	LPIC	18
8	ICS	18
9	RITPL	18
10	MWWM	18
11	Indicator Panel	18
12	Mouse	3
13	Intercom Slab	18
14	Monitoring Camera	18
15	Smart Card	18
16	Thermal Printer	18
KM.123+490 -TOLL PLAZA		
1	TLC	8
2	Electrical Enclosure	8
3	LCP	8
4	AVC RX PANEL	18
5	AVC TX PANEL	18
6	ICS	18
7	LPIC	18
8	OHLS	18
9	UFD	18
10	TRAFFIC LIGHT	18
11	RFID	18
12	MS WIM RX VS	18
13	MS WIM TX VS	18
14	MS WIM INDICATOR	18
15	PTZ CAMERA	18

CONTROL ROOM EQUIPMENT

S. No.	Equipment Name	Quantity
ASOGRA TOLL PLAZA		
1	Server	1
2	Server Room	1
3	Internet switch	1
4	D-link cat	1
5	LCD	3
6	Key board	5
7	Cashup Machine	1
8	Mastercam	1
9	NVR	1
11	CCH Machine	1
14	SwB Machine	2
19	Mouse	1
20	Audit Machine	1
23	Mouse	4
25	Joystick	1
26	Poe Switch	1
27	UPS	5
32	Monitoring Camera	3
35	CTC POS	1
36	Smart Card POS	1
TOLL PLAZA AT KM KM.123+490		
1	Server	1
2	Server Room	1
3	Internet switch	1
4	D-link cat	1
5	LCD	3
6	Key board	4
7	Cashup Machine	1
8	Mastercam	1
9	NVR	1
11	CCH Machine	1
13	Mouse	4
14	SwB Machine	1
16	Mouse	1
17	SwB Machine	1
20	Audit Machine	1
25	Joystick	1
26	Poe Switch	1

CONTROL ROOM EQUIPMENT

S. No.	Equipment Name	Quantity
27	UPS	5
32	Monitoring Camera	3
35	CTC POS	1
36	Smart Card POS	1

Annexure 10: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Rehabilitation and up-gradation of NH-66 (Erstwhile NH-17) from Km.406.030 to Km.450.170 (Kalmath to Zarap section) to Four Lane with pave shoulder in the State of Maharashtra under NHDP-IV on Hybrid Annuity Mode

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Rehabilitation and up-gradation of NH-66 (Erstwhile NH-17) from Km.406.030 to Km.450.170 (Kalmath to Zarap section) to Four Lane with pave shoulder in the State of Maharashtra under NHDP-IV on Hybrid Annuity Mode

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Kalmath-Zarap	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL KALMATH ZARAP HIGHWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Kalmath Zarap Highways Limited (herein after referred to as "**Concessionaire**") had augmented the existing two lane road "Kalmath-Zarap section of NH-17(New NH-66) in the State of Maharashtra, in accordance with the provisions of the Concession Agreement executed with National Highways Authority of India (herein after referred to as "Authority") on 9th February, 2017 on Design, Build, Operate and Transfer (DBOT) on Hybrid Annuity Mode (HAM).

The Project Highway starts at Km. 406+030 (Near Kalmath) and ends at Km 450+170 (Near Zarap) on NH-17 (New NH-66). Project is 4 lane and is awarded under Hybrid Annuity Mode. It passes through settlements namely Sindhudurg, Kalmath, and Zarap. Project location map is provided at **Figure 1-1.**

Figure 1.1: Project Location Map

SHREM INFRAVENTURE PRIVATE LIMITED (SIPL) acquired DBL KALMATH ZARAP HIGHWAYS PRIVATE LIMITED vide agreement dated 26.03.2018.

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Rehabilitation and upgradation of NH-66 (Erstwhile NH-17) from Km. 406+030 to Km. 450+170 (Kalmath to Zarap Section) to Four lane with paved shoulder in the State of Maharashtra under NHDP-IV on Hybrid Annuity Mode.
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	DBL Kalmath Zarap Highways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	25.11.2016
7	Date of Agreement	09.02.2017
8	Design Length as per Schedule B of CA	43.905 Km
9	Project Lane Configuration	Four Lane
10	Bid Project Cost	Rs. 914 Cr
11	EPC Cost	Rs. 698 .09 Cr
12	Nature of contract	DBFOT (Hybrid Annuity)
13	Toll collected by	The Authority
14	Concession End Date	22.03.2035
15	Concession Period	15 Years from COD
16	Appointed date	01.02.2018

S. No.	Particulars	Details
17	Construction Period	730 days from the Appointed Date+285 days EOT
18	Schedule Completion Date	01.02.2020
19	Date of issuance of Provisional Certificate (COD)	23.03.2020
20	Bonus on early completion	Applicable as per Cl.23.5 of CA
21	Date of issuance of Completion Certificate	---
22	Annuity Amount	As per Cl.23.4 and Cl.23.6.3 of CA
23	Total Number of Annuities payable after COD	30 Nos.
24	First Annuity Payment Date	23.09.2020
25	Total Number of Annuity Payments received as on January 2021	1 No.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O & M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table 2-1.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of Main Carriageway with Rigid Pavement	29.197 Kms.	---	33.560 Kms.
2	Total Length of Main Carriageway with Flexible Pavement (Considering both sides)	14.708 Kms.		10.345 Kms.
3	Total length of Service Roads	23.938 Kms.	---	23.938 Kms.
4	Total length of Slip Roads	---	---	---
5	Toll Plazas	1 No.	---	1 No.
6	Bus Bays with Bus Shelters	46 Nos.	---	43Nos. Completed and 3 Nos. Construction Pending
7	Truck Lay Bays	1 Nos.	---	1 No.
8	Major Junctions	5 Nos.	---	5 Nos.
9	Minor Junctions	61 Nos.	---	61 Nos.
10	Vehicular underpasses	7 Nos.	-2 Nos.	5 Nos.
11	Light Vehicular underpasses	3Nos.	2 Nos.	5 Nos.
12	Pedestrian underpasses	---	1 No.	1 No.
13	Subways	---	1 No.	1 No.
14	Flyovers	1 No.	---	1 No.
15	Major Bridges	4 Nos.	3 Nos.	7Nos.
16	Minor Bridges	8Nos.	1 Nos.	9 Nos.
17	Hume Pipe Culverts	101 Nos.	29 Nos.	*127 Nos.
18	Slab/Box Culverts	19 Nos.	---	19 Nos.

* As per site condition Total 127 Nos. of pipe culverts constructed.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

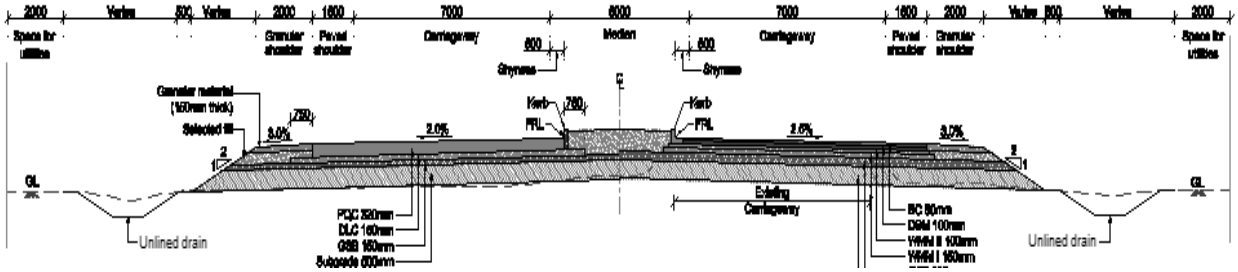

Figure 2.1: TCS 1.1- 4 Lane Rural Area (Right Side Existing Road)

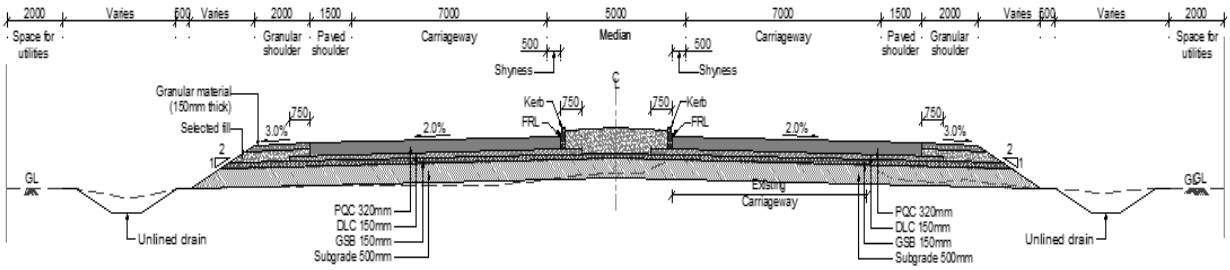

Figure 2.2: TCS 1.2- 4 Lane Rural Area (Right Side Existing Road)

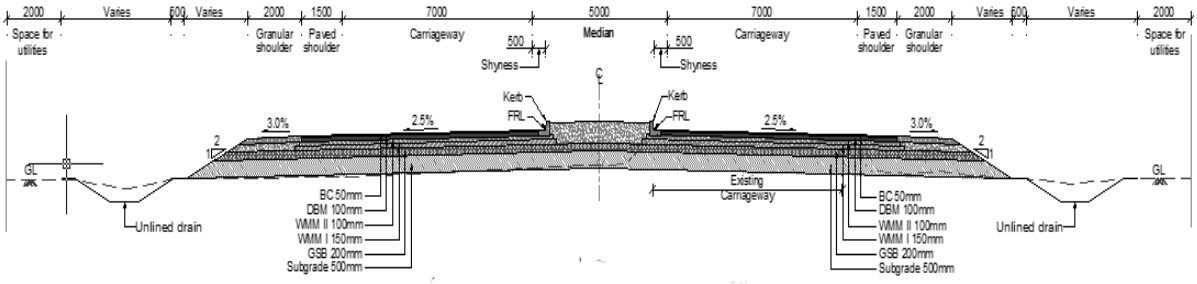

Figure 2.3: TCS 1.3- 4 Lane Rural Area (Right Side Existing Road)

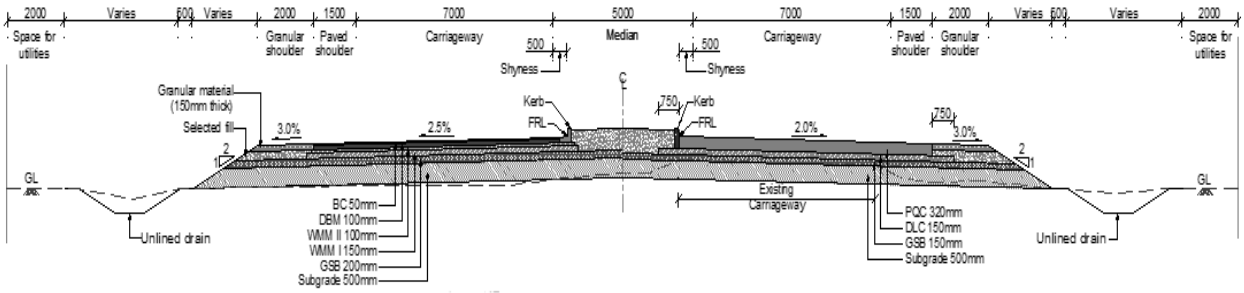

Figure 2.4: TCS 1.4- 4 Lane Rural Area (Right Side Existing Road)

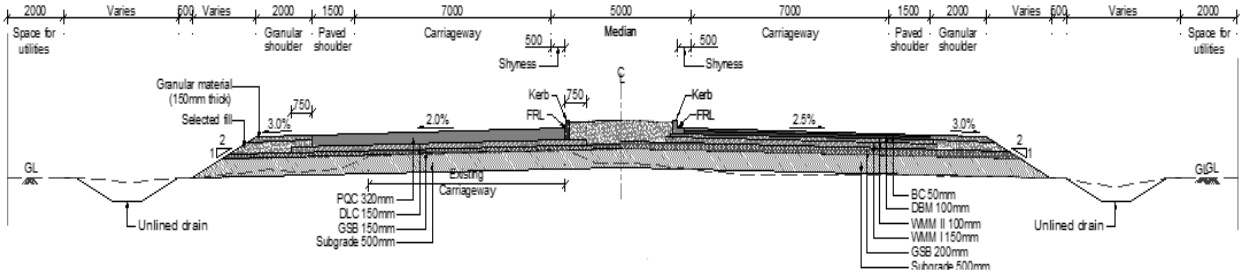

Figure 2.5: TCS 1A.1- 4 Lane Rural Area (Left Side Existing Road)

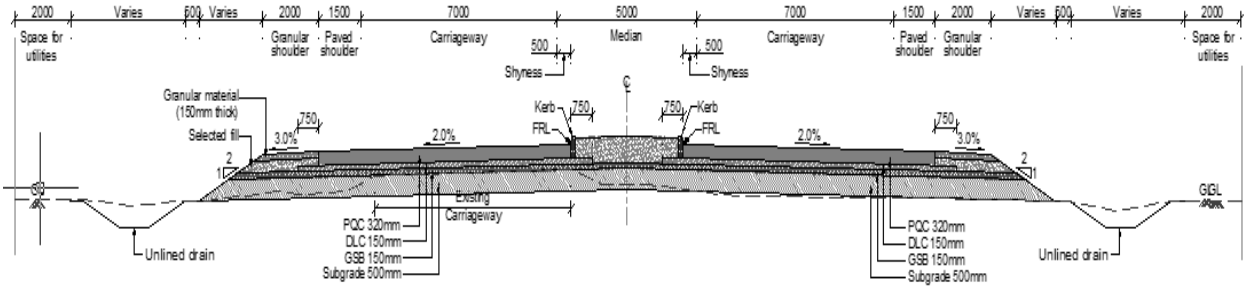

Figure 2.6: TCS 1A.2- 4 Lane Rural Area (Left Side Existing Road)

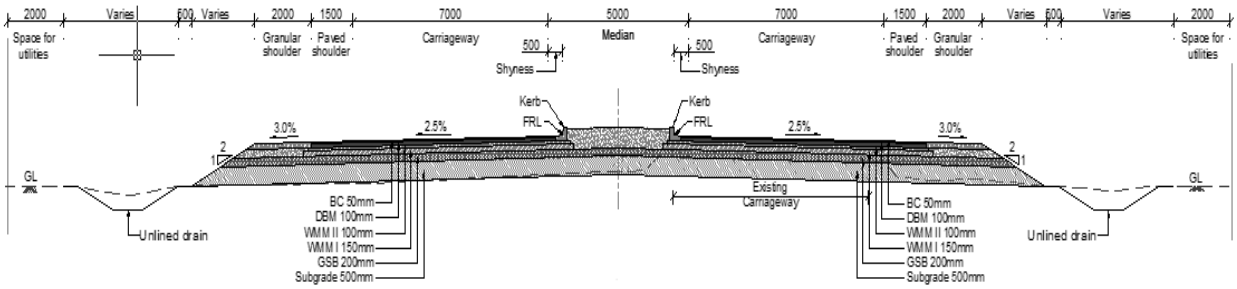

Figure 2.7: TCS 1A.3- 4 Lane Rural Area (Left Side Existing Road)

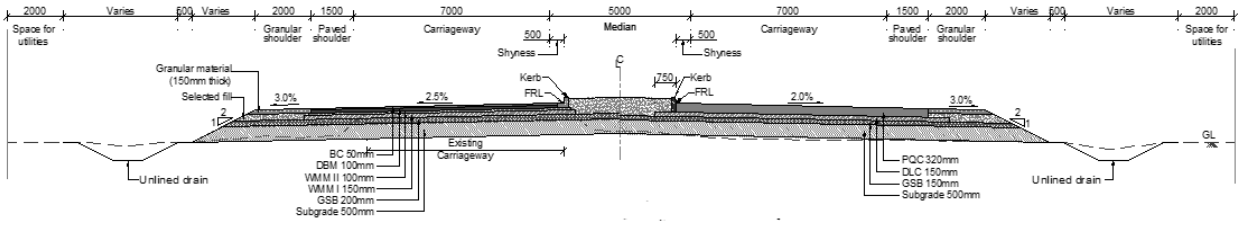

Figure 2.8: TCS 1A.4- 4 Lane Rural Area (Left Side Existing Road)

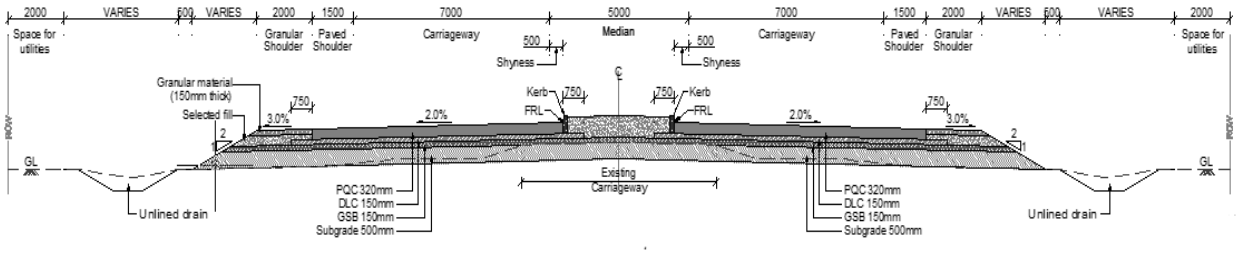

Figure 2.9: TCS 1B.1- 4 Lane Rural Area (Center Existing Road)

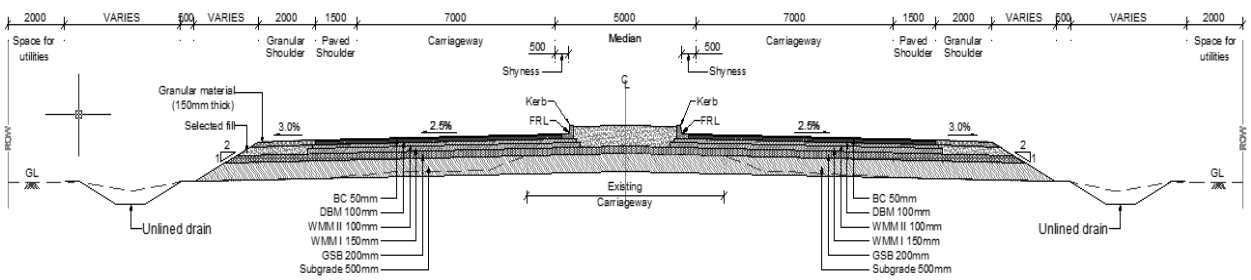

Figure 2.10: TCS 1B.2- 4 Lane Rural Area (Center Existing Road)

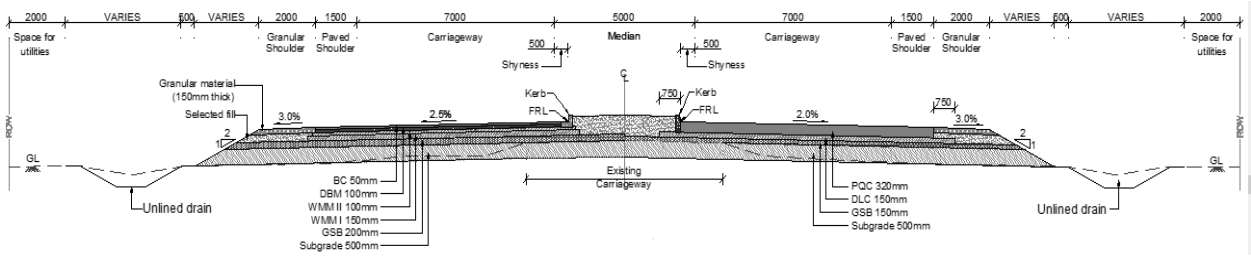

Figure 2.11- TCS 1B.3- 4 Lane Rural Area (Center Existing Road)

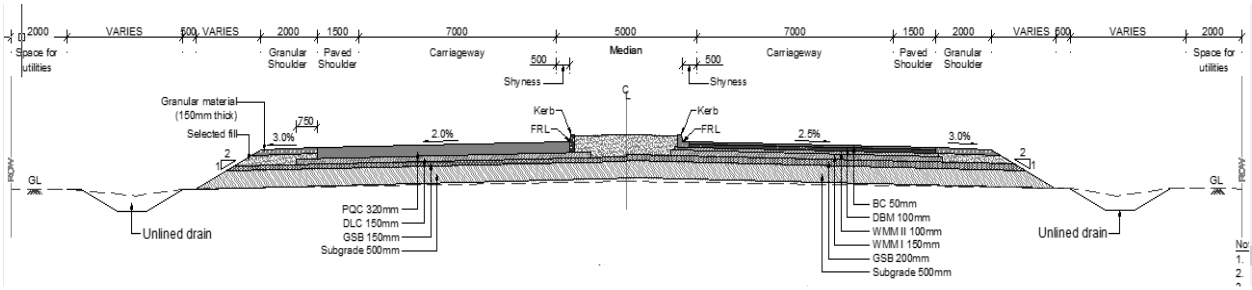

Figure 2.12: TCS 1C.1- New Alignment / Realignment For 4 - Lane In Rural Area

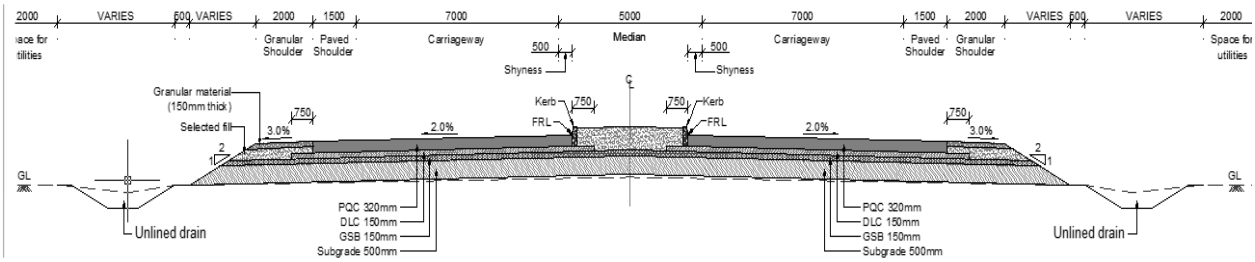

Figure 2.13: TCS 1C.2- New Alignment / Realignment For 4 - Lane In Rural Area

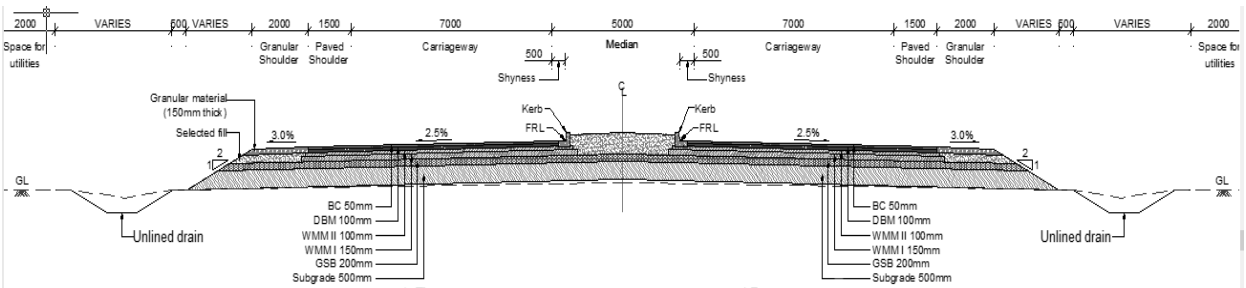

Figure 2.14: TCS 1C.3- New Alignment / Realignment For 4 - Lane In Rural Area

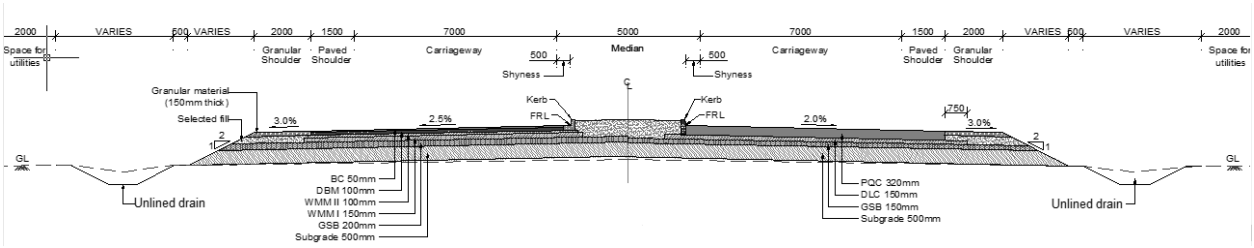

Figure 2.15: TCS 1C.4- New Alignment / Realignment

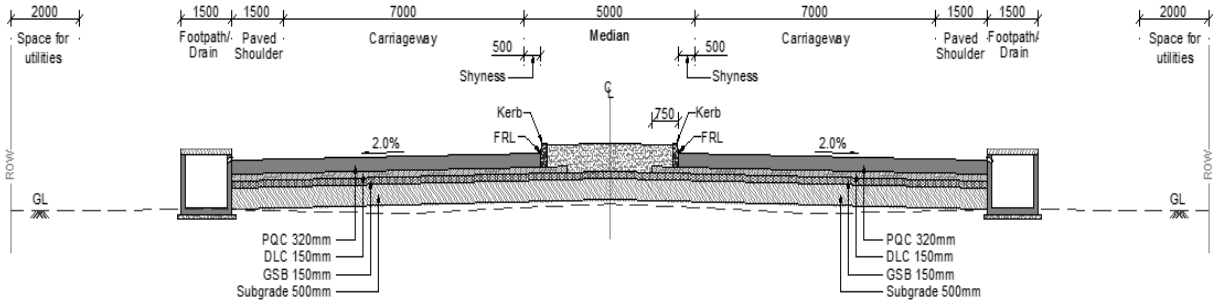

Figure 2.16: TCS 1D- TOLL PLAZA

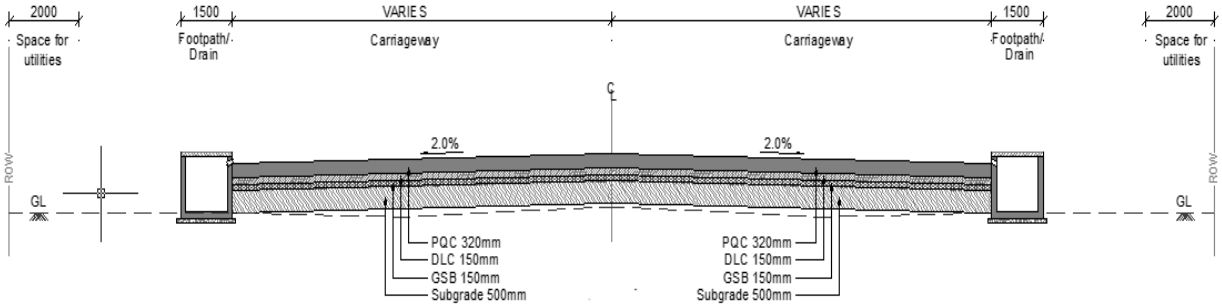

Figure 2.17: TCS 1E- TOLL PLAZA

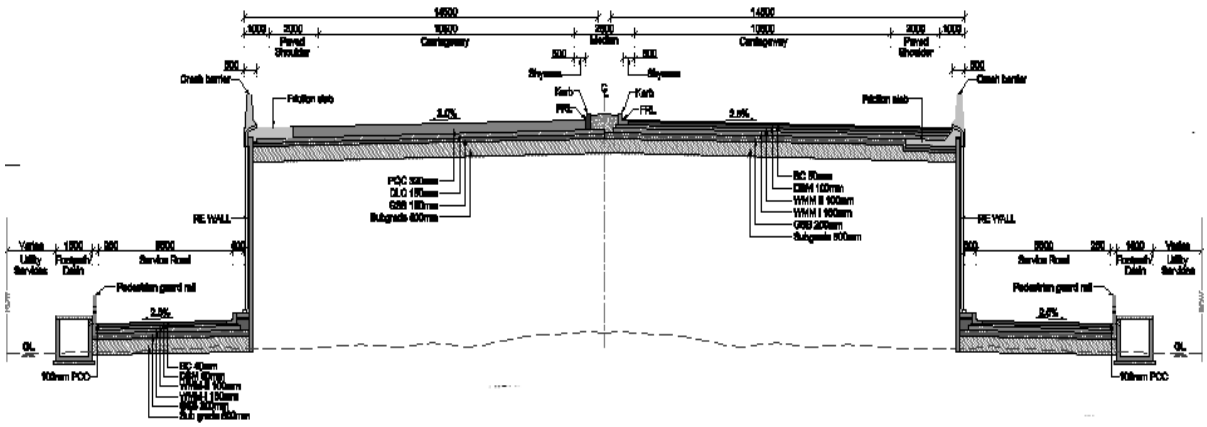

Figure 2.18: TCS 8.1- Vehicular / Light Vehicular Underpass

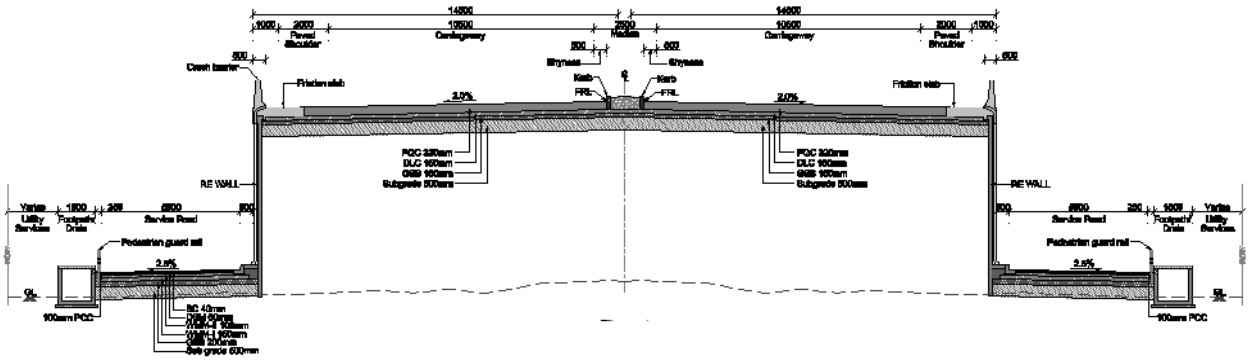

Figure 2.19: TCS 8.2- Vehicular / Light Vehicular Underpass

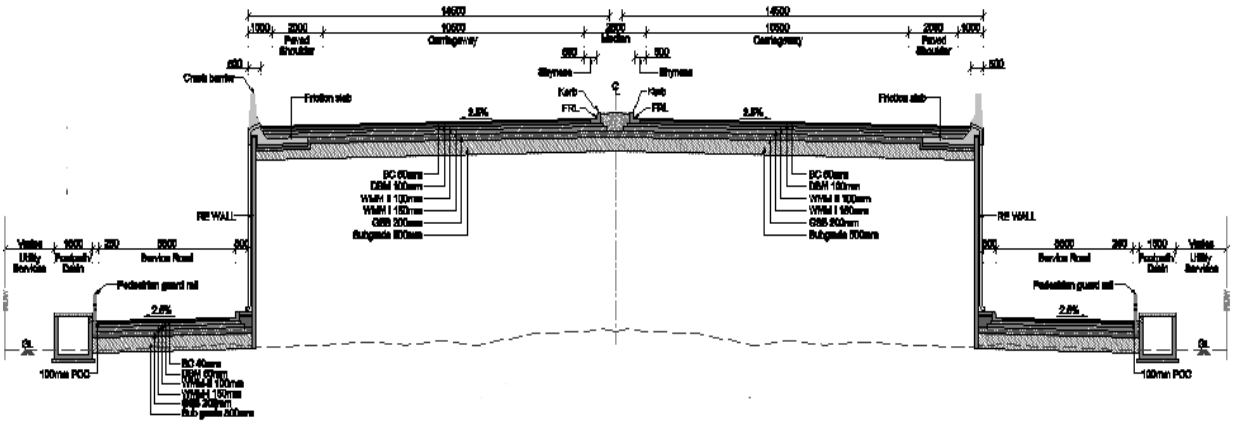

Figure 2.20: TCS 8.3- Vehicular / Light Vehicular Underpass

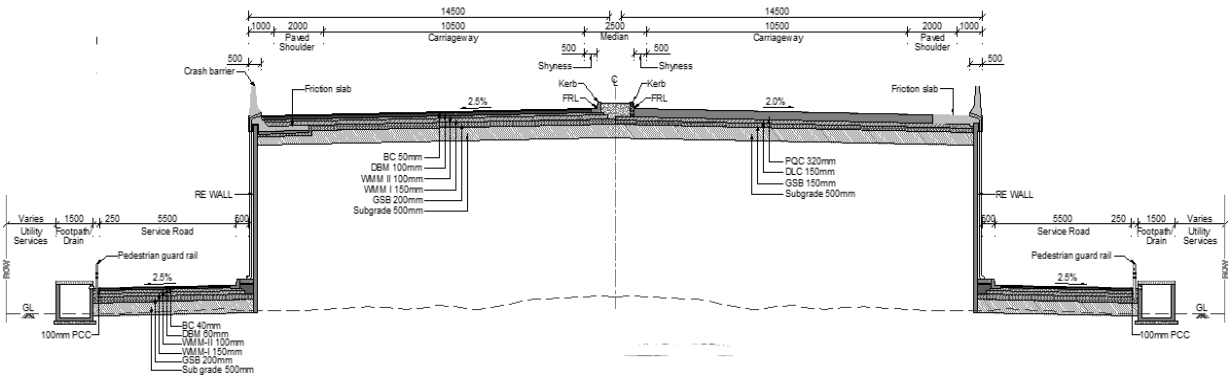

Figure 2.21: TCS 8.4- Vehicular / Light Vehicular Underpass

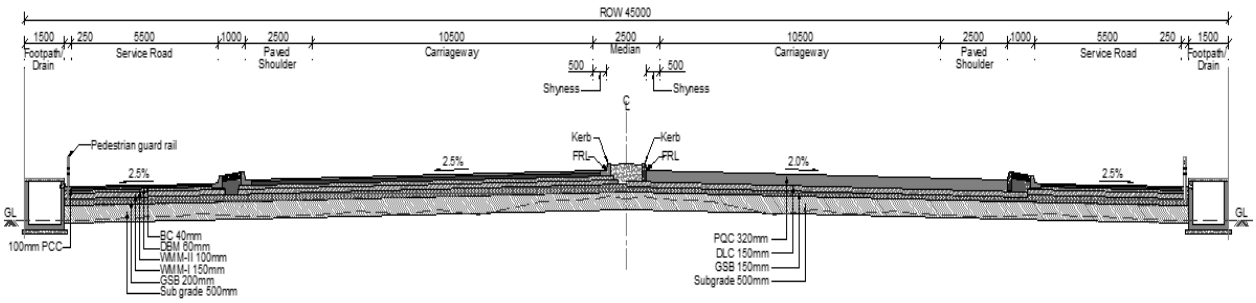

Figure 2.22: TCS 8.5- 6 Lane Widening In Rural Area

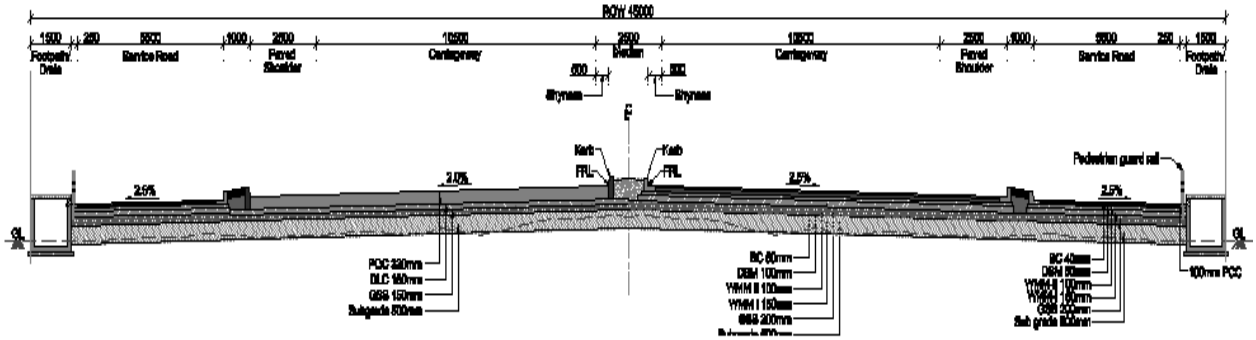

Figure 2.23: TCS 8.6- 6 Lane Widening In Rural Area

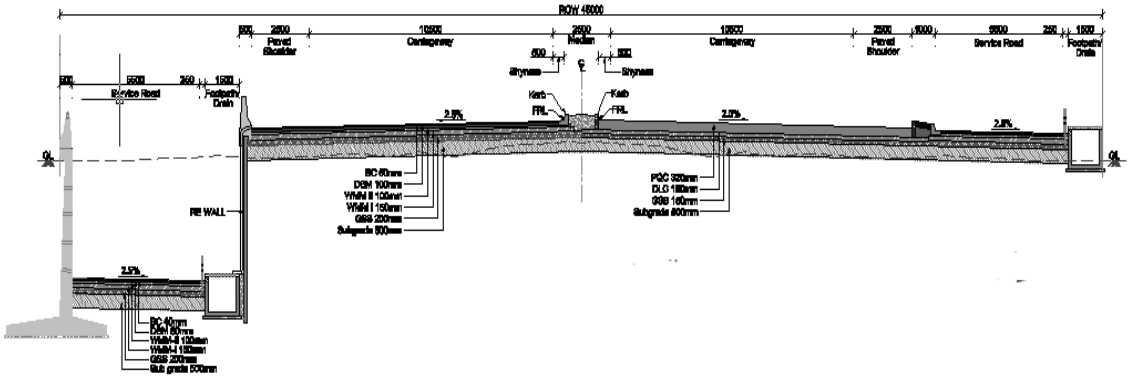

Figure 2.24: TCS 8.7- 6 Lane Widening In Rural Area

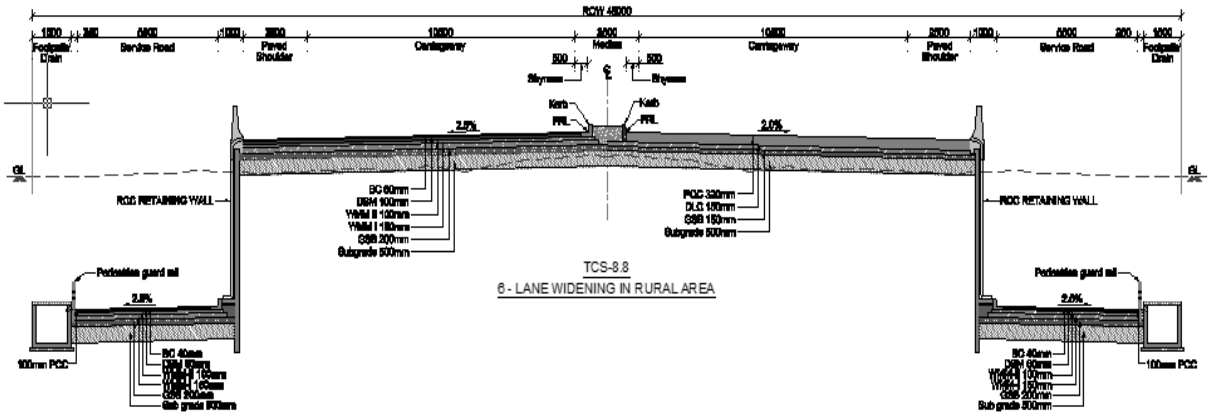

Figure 2.25: TCS 8.8- 6 Lane Widening In Rural Area

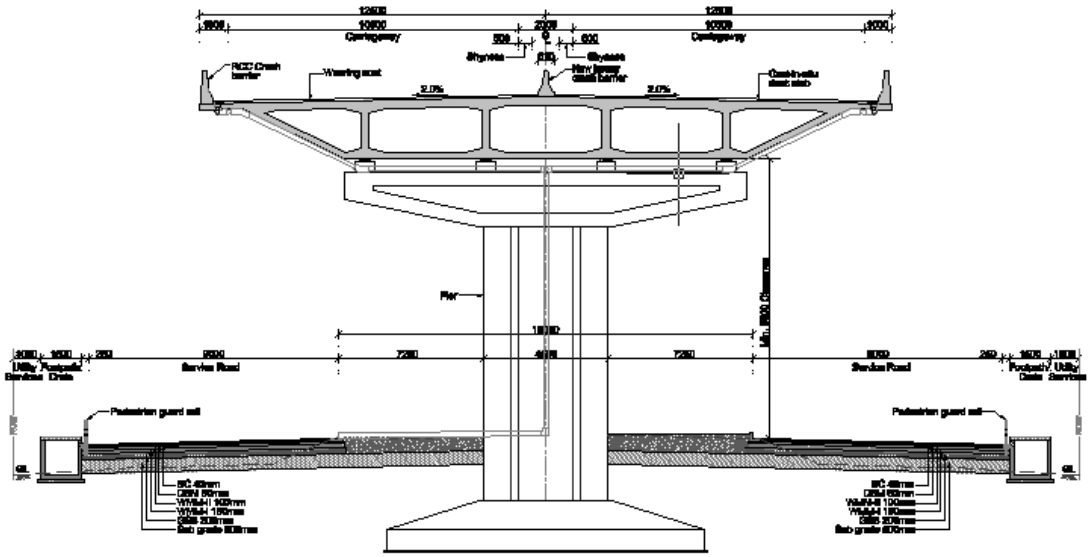

Figure 2.26: TCS 9- Elevated Structures Location

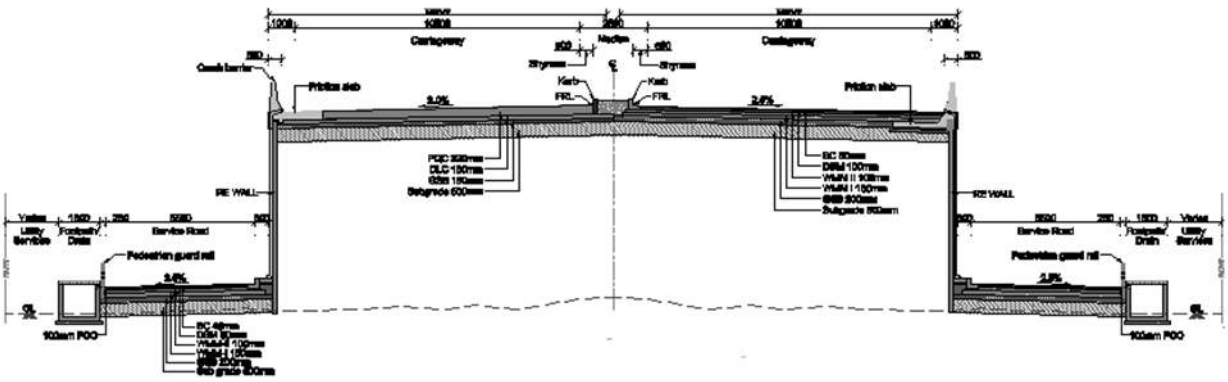

Figure 2.27: TCS 10.1- Approach Of Elevated Structures

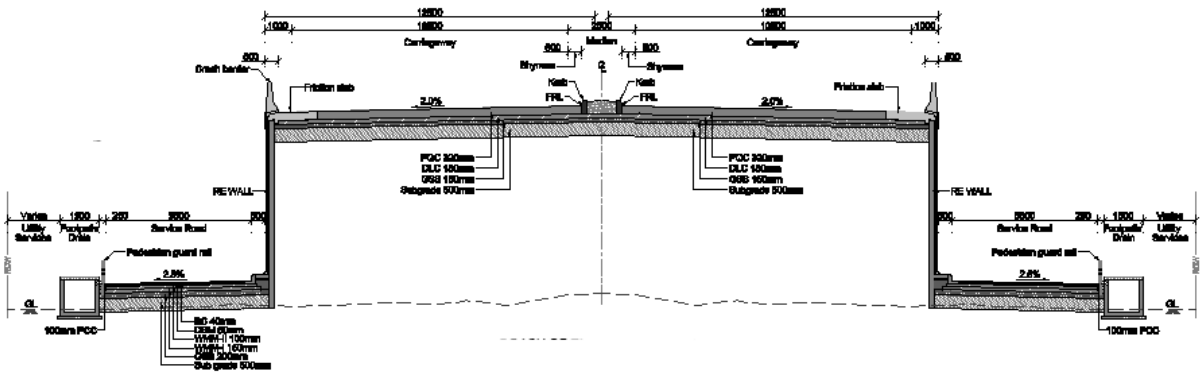

Figure 2.28: TCS 10.2- Approach Of Elevated Structures

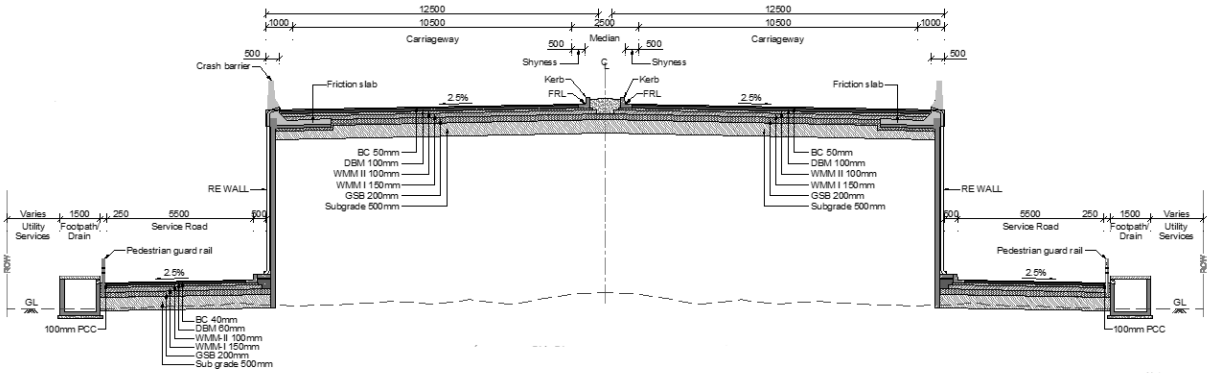

Figure 2.29: TCS 10.3- Approach Of Elevated Structures

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
1	237+655	237+728	73	MAJOR BRIDGE
2	237+728	237+800	72	TCS-10.3
3	237+800	237+830	30	TCS-10.1
4	237+830	238+320	490	TCS-10.2
5	238+320	239+580	1260	TCS-9
6	239+580	239+836	256	TCS-10.2
7	239+836	239+863	27	TCS-10.1
8	239+863	239+927	64	TCS-1A.3
9	239+927	240+053	126	MAJOR BRIDGE
10	240+053	240+070	17	TCS-1A.3
11	240+070	240+380	310	TCS-1.4
12	240+380	240+670	290	TCS-1A.4
13	240+670	240+800	130	TCS-1.4
14	240+800	240+930	130	TCS-1A.4
15	240+930	240+990	60	TCS-1A.3
16	240+990	241+060	70	TCS-1.3
17	241+060	241+380	320	TCS-1.1
18	241+380	241+445	65	TCS-1.3

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
19	241+445	241+640	195	TCS-1A.4
20	241+640	242+190	550	TCS-1.4
21	242+190	242+570	380	TCS-1A.4
22	242+570	242+735	165	TCS-1C.4
23	242+735	242+765	30	TCS-1C.3
24	242+765	242+910	145	TCS-1C.4
25	242+910	242+940	30	TCS-1C.3
26	242+940	242+961	21	MINOR BRIDGE
27	242+961	243+050	89	TCS-1A.3
28	243+050	244+180	1130	TCS-1A.4
29	244+180	244+200	20	TCS-1A.3
30	244+200	244+221	21	MINOR BRIDGE
31	244+221	244+235	14	TCS-1C.3
32	244+235	244+495	260	TCS-1C.1
33	244+495	244+505	10	TCS-1C.3
34	244+505	244+810	305	TCS-1C.4
35	244+810	244+925	115	TCS-1B.3
36	244+925	244+970	45	TCS-1.4
37	244+970	246+760	66	TCS-1.2
38	246+760	247+270	510	TCS-1C.2
39	247+270	248+315	1045	TCS-1.2
40	248+315	248+390	75	TCS-1.4
41	248+390	248+430	40	TCS-1.3
42	248+430	248+451	21	MINOR BRIDGE
43	248+451	248+475	24	TCS-1C.3
44	248+475	248+545	70	TCS-1C.4

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
45	248+545	248+800	255	TCS-1C.2
46	248+800	249+060	260	TCS-1A.2
47	249+060	250+130	1070	TCS-1.2
48	250+130	250+230	100	TCS-1D TOLL PLAZA
49	250+230	250+585	355	TCS-1E TOLL PLAZA
50	250+585	250+730	145	TCS-1D TOLL PLAZA
51	250+730	251+140	410	TCS-1C.2
52	251+140	251+400	260	TCS-1A.2
53	251+400	251+550	150	TCS-1A.4
54	251+550	251+610	60	TCS-1C.3
55	251+610	251+694	84	MAJOR BRIDGE
56	251+694	251+790	96	TCS-1C.3
57	251+790	251+855	65	TCS-1C.4
58	251+855	251+870	15	TCS-1C.1
59	251+870	252+000	130	TCS-1C.2
60	252+000	252+100	100	TCS-1B.1
61	252+100	252+430	330	TCS-1A.2
62	252+430	252+450	20	TCS-1A.3
63	252+450	252+455	5	TCS-8.3
64	252+455	253+545	1090	TCS-8.2
65	253+545	253+830	285	TCS-1.1
66	253+830	253+835	5	TCS-1.3
67	253+835	253+856	21	MINOR BRIDGE
68	253+856	253+890	34	TCS-1.3
69	253+890	254+150	260	TCS-1.1
70	254+150	254+223	73	TCS-1A.1

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
71	254+223	254+445	222	TCS-1A.2
72	254+445	254+475	30	TCS-1A.4
73	254+475	254+600	125	TCS-1A.3
74	254+600	254+682	82	TCS-1A.1
75	254+682	255+650	968	TCS-1A.2
76	255+650	256+090	440	TCS-1.2
77	256+090	256+600	510	TCS-1B.1
78	256+600	258+098	1498	TCS-8.2
79	258+098	258+125	27	TCS-8.3
80	258+125	259+120	995	TCS-8.2
81	259+120	259+320	200	TCS-8.3
82	259+320	259+358	38	TCS-1A.3
83	259+358	259+376	18	TCS-1A.4
84	259+376	260+300	924	TCS-1A.2
85	260+300	260+530	230	TCS-1B.1
86	260+530	260+695	165	TCS-1A.2
87	260+695	260+887	191.7	TCS-1A.4
88	260+887	260+957	70	MAJOR BRIDGE
89	260+957	261+676	719.3	TCS-1A.4
90	261+676	262+320	644	TCS-1A.2
91	262+320	262+338	18	TCS-1A.1
92	262+338	262+406	68	TCS-1A.3
93	262+406	262+448	42	TCS-1A.1
94	262+448	262+790	342	TCS-1A.2
95	262+790	263+330	540	TCS-1.1
96	263+330	263+400	70	TCS-1.3

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
97	263+400	263+418	18	TCS-8.3
98	263+418	263+431	13	TCS-8.1
99	263+431	264+498	1067	TCS-8.2
100	264+498	264+560	62	TCS-8.4
101	264+560	264+600	40	TCS-1B.3
102	264+600	265+030	430	TCS-1A.4
103	265+030	265+110	80	TCS-1A.3
104	265+110	265+184	74	TCS-1C.3
105	265+184	265+227	43	MAJOR BRIDGE
106	265+227	265+390	163	TCS-1C.3
107	265+390	265+420	30	TCS-1C.4
108	265+420	265+600	180	TCS-1C.2
109	265+600	265+690	90	TCS-1A.2
110	265+690	266+085	395	TCS-1A.4
111	266+085	266+170	85	TCS-1A.3
112	266+170	266+180	10	TCS-8.1
113	266+180	266+750	570	TCS-8.2
114	266+750	266+760	10	TCS-8.3
115	266+760	266+975	215	TCS-1B.2
116	266+975	267+779	803.5	TCS-1A.1
117	267+779	267+800	21.5	TCS-1A.2
118	267+800	268+055	255	TCS-1A.4
119	268+055	268+263	208	TCS-1A.3
120	268+263	268+415	152	TCS-1A.4
121	268+415	268+426	10.5	TCS-1A.3
122	268+426	268+500	74.5	TCS-1A.1

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
123	268+500	268+545	45	TCS-1A.3
124	268+545	268+906	361	TCS-1A.1
125	268+906	268+916	10	TCS-1B.2
126	268+916	269+300	384	TCS-1A.1
127	269+300	269+345	45	TCS-1B.2
128	269+345	269+543	198	TCS-1.4
129	269+543	269+558	15	TCS-1.3
130	269+558	269+633	75	MAJOR BRIDGE
131	269+633	269+650	17	TCS-1.3
132	269+650	270+065	415	TCS-1.4
133	270+065	270+198	133	TCS-1.3
134	270+198	270+318	120	MAJOR BRIDGE
135	270+318	270+360	42	TCS-8.4
136	270+360	270+420	60	TCS-8.3
137	270+420	271+270	850	TCS-8.2
138	271+270	271+450	180	TCS-8.5
139	271+450	272+050	600	TCS-8.7
140	272+050	272+330	280	TCS-8.5
141	272+330	272+580	250	TCS-8.8
142	272+580	272+665	85	TCS-8.5
143	272+665	273+335	670	TCS-8.6
144	273+335	273+435	100	TCS-1A.1
145	273+435	273+564	129	TCS-1A.3
146	273+564	273+585	21	MINOR BRIDGE
147	273+585	273+675	90	TCS-1A.3
148	273+675	274+225	550	TCS-1A.4

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
149	274+225	274+355	130	TCS-1A.2
150	274+355	274+628	273	TCS-1.2
151	274+628	274+705	77	TCS-1.1
152	274+705	275+128	422.5	TCS-1A.2
153	275+128	275+153	25	TCS-1A.4
154	275+153	275+215	62.5	TCS-1.3
155	275+215	275+225	10	MINOR BRIDGE
156	275+225	275+250	25	TCS-1.3
157	275+250	275+285	35	TCS-1.4
158	275+285	275+300	15	TCS-1.2
159	275+300	275+630	330	TCS-1A.2
160	275+630	275+700	70	TCS-8.3
161	275+700	276+283	583	TCS-8.2
162	276+283	276+320	37	TCS-8.3
163	276+320	276+430	110	TCS-1.3
164	276+430	276+440	10	TCS-1.1
165	276+440	278+150	1710	TCS-1.2
166	278+150	278+905	755	TCS-1A.2
167	278+905	279+013	107.5	TCS-1C.2
168	279+013	279+100	87.5	TCS-1C.4
169	279+100	279+115	15	TCS-8.4
170	279+115	279+663	548	TCS-8.2
171	279+663	279+675	12	TCS-8.3
172	279+675	279+854	179	TCS-1A.3
173	279+854	279+949	95	TCS-1.1
174	279+949	280+230	281	TCS-1.2

S.No.	From (Km.)	To (Km.)	Length (m)	TYPES
175	280+230	281+115	885	TCS-1B.1
176	281+115	281+415	300	TCS-1A.2
177	281+415	281+560	145	TCS-1A.3

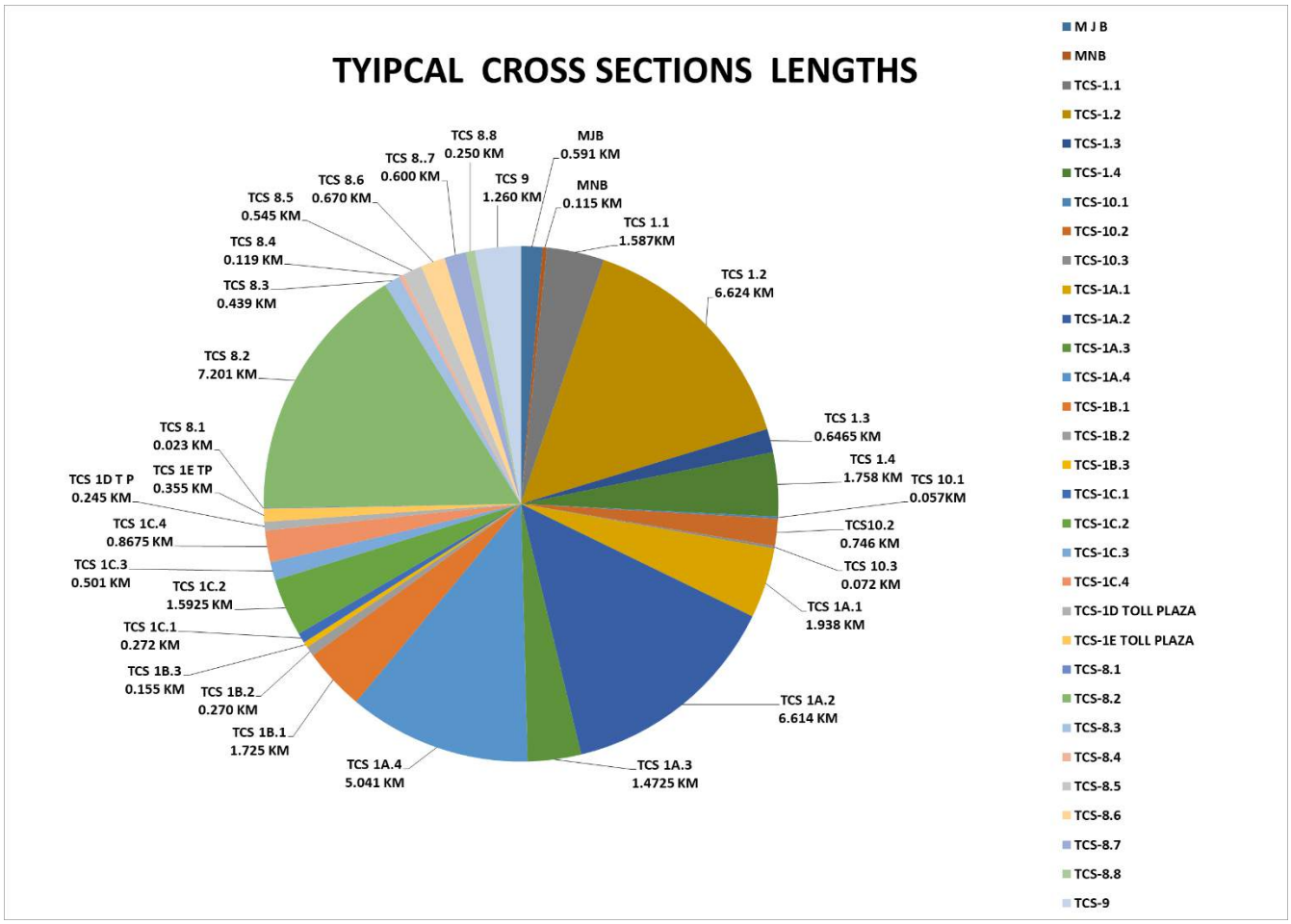

Figure 2.30: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are constructed in open and rural areas.

2.4 Service Roads

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the Concession Agreement. The details are provided below.

Table 2.3: List of Service Road locations

S. No.	Design Chainage (Km.)		Length (m)	Side	Service Road Width (m)	Linear Length of Service Road (m)
	From	To				
1	237+728	238+320	592	Both Side	5.5	1184
2	238+320	239+580	1260	Both Side	9.0	2520
3	239+580	239+850	270	Both Side	5.5	540
4	252+450	253+015	565	Both Side	5.5	1130
5	253+015	253+035	20	Both Side	5.5	40
6	253+035	253+545	510	Both Side	5.5	1020
7	256+600	257+124	524	Both Side	5.5	1048
8	257+124	257+136	12	Both Side	5.5	24
9	257+136	258+102	966	Both Side	5.5	1932
10	258+102	258+110	8	Both Side	5.5	16
11	258+110	258+639	529	Both Side	5.5	1058
12	258+639	258+651	12	Both Side	5.5	24
13	258+651	258+725	74	Both Side	5.5	148
14	258+725	258+733	8	Both Side	5.5	16
15	258+733	259+320	587	Both Side	5.5	1174
16	263+400	264+209	809	Both Side	5.5	1618
17	264+209	264+221	12	Both Side	5.5	24
18	264+221	264+560	339	Both Side	5.5	678
19	266+170	266+474	304	Both Side	5.5	608
20	266+474	266+486	12	Both Side	5.5	24
21	266+486	266+760	274	Both Side	5.5	548
22	270+318	270+598	280	Both Side	5.5	560
23	270+598	270+613	15	Both Side	5.5	30
24	270+613	271+735	1122	Both Side	5.5	2244

S. No.	Design Chainage (Km.)		Length (m)	Side	Service Road Width (m)	Linear Length of Service Road (m)
	From	To				
25	271+735	271+755	20	Both Side	5.5	40
26	271+755	272+029	274	Both Side	5.5	548
27	272+029	272+041	12	Both Side	5.5	24
28	272+041	273+335	1294	Both Side	5.5	2588
29	275+630	276+024	394	Both Side	5.5	788
30	276+024	276+036	12	Both Side	5.5	24
31	276+036	276+320	284	Both Side	5.5	568
32	278+905	279+190	285	Both Side	5.5	570
33	279+190	279+202	12	Both Side	5.5	24
34	279+202	279+480	278	Both Side	5.5	556
					Total	23938

2.5 Bypass/Realignment

As per the provisions of Schedule B of the Concession Agreement Realignment is provided at the following locations.

Table 2.4: Realignment stretches

S.No.	From (Km.)	To (Km.)	Length (m)
1	245+740	245+890	150
2	247+060	247+200	140
3	248+560	248+700	140
4	250+890	251+050	160
5	265+110	265+185	75
6	265+227	265+590	363
Total			**1028**

2.6 Intersections

Locations of Major Intersections and Minor junctions are provided in Schedule B of the Concession Agreement. Details are given below.

Table 2.5: List of Major Junctions

S.No.	Design Chainage (Km.)	Type of Junction	Side	
			LHS	RHS
1	253+030	3-Arms	-	Kasal Bus stand
2	252+800	3-Arms	-	Kasal Bus stand
3	271+747	3-Arms	-	MIDC
4	272+040	3-Arms	-	Kudal
5	281+580	3-Arms	-	Bypass Junction

Table 2.6: List of Minor Junctions

S.No.	Design Chainage (Km.)	Type of Junction	Side	
			LHS	RHS
1	238+060	3-Arms	Temple	-
2	238+460	3-Arms	Cross Road	-
3	238+540	4-Arms	City	Aarchra
4	238+900	3-Arms	Cross Road	-
5	239+170	4-Arms	Teliyadi	Bijli Nagar
6	239+400	3-Arms	Cross Road	-
7	239+560	3-Arms	Nardare	-
8	240+150	3-Arms	Cross Road	-
9	240+560	3-Arms	Temple	-
10	242+200	3-Arms	-	Saatral
11	242+485	3-Arms	Cross Road	-
12	242+900	3-Arms	Vagde	-
13	245+140	3-Arms	-	Ashroundi
14	245+190	3-Arms	Kashavan	-
15	245+550	3-Arms	Mud Road	-
16	246+500	3-Arms	-	Ashroundi

S.No.	Design Chainage (Km.)	Type of Junction	Side	
			LHS	RHS
17	248+365	3-Arms	Bordve Mdr	-
18	251+540	3-Arms	-	Poipe
19	251+760	3-Arms	-	Dhokamawad
20	252+360	3-Arms	-	Village Road
21	252+800	3-Arms	Gram Panchayat Kasal	-
22	253+030	3-Arms	Village Road	-
23	254+600	3-Arms	Village Road	-
24	255+870	3-Arms	-	Bambuli
25	256+620	3-Arms	Banjarewadi	
26	256+780	3-Arms	-	Jaitapvar colony
27	256+890	3-Arms	-	Jaitapvar colony
28	257+220	3-Arms	Bca colony	-
29	257+700	3-Arms	Salochana Nagar	-
30	258+250	3-Arms	Ghariwari	-
31	258+890	3-Arms	Oorosh	-
32	259+340	3-Arms	Oorash Phase 3	-
33	260+165	3-Arms	Oorosh Khurd	Shindhudurg Nagri
34	260+220	3-Arms	-	-
35	261+650	3-Arms	Collage	-
36	261+300	3-Arms	Humarkala	-
37	261+400	3-Arms	Humarkala	-
38	258+888	3-Arms	Humarkala	-
39	262+640	3-Arms	Humarkala	Pandur
40	264+700	3-Arms	-	-
41	267+700	3-Arms	Siddhawan	-

S.No.	Design Chainage (Km.)	Type of Junction	Side	
			LHS	RHS
42	268+525	3-Arms	Cross Road	-
43	268+675	3-Arms	Cross Road	-
44	268+900	4-Arms	Pavsi Village	-
45	269+500	3-Arms	-	Binketwari
46	270+000	3-Arms	-	Pavsi
47	270+100	3-Arms	Ghavnde	Pavsi
48	272+200	3-Arms	Kudal	-
49	272+430	3-Arms	Nakshatra Nagri	-
50	272+580	3-Arms	Kudal Sagirde	-
51	273+000	3-Arms	Piguli Gangawada	-
52	273+760	3-Arms	-	Piguli
53	274+820	3-Arms	-	Piguli
54	275+085	3-Arms	-	Vangurla Malva
55	275+640	3-Arms	-	Bhibhne
56	278+950	3-Arms	-	Bambarwada
57	279+380	3-Arms	-	School
58	279+850	3-Arms	Main Goan	Vagrola Banda
59	280+190	3-Arms	-	Yaswant K Roa Bidye Marg
60	280+370	3-Arms	-	-
61	280+790	3-Arms	-	Kumbharwadi

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the Concession Agreement 3 nos. of Light Vehicular Underpass, 1 flyover and 7 nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Carriageway Details

Summary of Carriageway Details is given below:

Table 2.7: Summary of Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)
1	4 Lane Paved shoulder		43.905
2	Service Roads	23.938	
3	Total Length	23.938	43.905
TYPE OF ALIGNMENT			
4	Widening	---	29.615
5	Realignment	---	1.028
6	Flyover approaches	---	13.262
7	Total Length of the Project	---	43.905

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.8: Summary of Structures

S.No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Underpasses /Fly over/Sudway
1	Retained				2	
2	Widening		2			
3	Reconstruction			94	15	
4	New	4	6	7	2	VUP - 5 LVUP - 5 PUP - 1 FLYOVER - 1 SUBWAY - 1
5	Improvement					
	Total	**4**	**8**	**101**	**19**	**13**

2.11 Toll Plazas

- One toll Plaza is provided on the project road at Km. 250+407, which comprises of eight lanes.
- The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m.
- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 7 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in Toll Plaza & HTMS Chapter.

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 46 locations. Details are provided below.

Table 2.9: List of Bus shelters

S. No.	Design Chainage (Km.)	Side	S. No.	Design Chainage (Km.)	Side
1	238+340	LHS	24	264+015	RHS
2	238+385	RHS	25	267+020	LHS
3	239+330	LHS	26	267+085	RHS
4	239+345	RHS	27	268+990	LHS
5	239+880	RHS	28	268+992	RHS
6	239+880	LHS	29	272+850	LHS
7	241+642	RHS	30	272+850	RHS
8	241+745	LHS	31	272+850	LHS
9	242+525	RHS	32	272+962	RHS
10	242+475	LHS	33	273+732	LHS
11	246+265	LHS	34	273+812	RHS

S. No.	Design Chainage (Km.)	Side
12	246+333	RHS
13	249+225	RHS
14	249+227	LHS
15	252+560	LHS
16	252+615	RHS
17	256+980	LHS
18	257+030	RHS
19	258+960	LHS
20	258+958	RHS
21	262+365	LHS
22	262+445	RHS
23	264+165	RHS

S. No.	Design Chainage (Km.)	Side
35	274+503	LHS
36	274+515	RHS
37	275+423	RHS
38	275+472	LHS
39	277+300	RHS
40	277+410	LHS
41	278+005	RHS
42	278+540	LHS
43	280+880	RHS
44	280+915	LHS
45	280+990	LHS
46	281+040	RHS

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following Table 3-1. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	43.905 km
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	66 Nos.
6	Toll Plazas	At Km. 250+407
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	43 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.

Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition

As per the provisions of Schedule B, the Concessionaire has constructed the Main Carriageway with Rigid Pavement and Service & Slip Roads with Flexible Pavement. Pavement Design submitted by the Concessionaire was reviewed and found in accordance with the provisions of IRC:37 and IRC 58. Design parameters are provided below. CBR considered for Flexible Pavement was 13% and Effective CBR for Rigid pavement was 7%. Based on CBR values, axle loads and Traffic the crust designed is satisfactory. The crust details are given below.

Table 3.3: For Rigid pavement –Main carriage way

1	PQC	320mm
2	DLC	150mm
3	GSB	150mm
4	Sub Grade	500mm

Table 3.4: For Flexible pavement –Main carriage way

1	BC	50 mm
2	DBM	100 mm
3	WMM	250 mm
4	GSB	200 mm
5	Sub Grade	500 mm

Table 3.5: Flexible Pavement-Service Roads

1	BC	40mm
2	DBM	60mm
3	WMM	250mm
4	GSB	200mm
5	Sub Grade	500mm

Based on the review on Designs submitted by the Concessionaire, the above crust is safe for project.

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 3.6: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
237+655	281+560	43.905	Good

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guidelines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The structures along the project highway are listed below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	07 Nos.
2	Minor Bridge	09 Nos.
3	Underpasses/flyovers	13 Nos.
4	Pipe culverts	127 Nos.
5	Slab/Box Culverts	19 Nos.

The Super Structure of the Major Bridge is of RCC Girders/ RCC Solid slabs resting on RCC wall type piers and abutments with open foundation. The superstructure of Minor bridges is of RCC solid slab/RCC Girder and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the Major bridge at Km. 237+688 is 73.2m with 4 spans. The superstructure consists of RCC I Girder. Each Pier and Abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the Major bridge at Km. 239+992 is 63.0m with 4 spans. The superstructure consists of PSC I Girder. Each Pier and Abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the Major bridge at Km. 251+655 is 84.0m with 4 spans. The superstructure consists of RCC I Girder. Each pier and whereas abutment is regular RCC wall type/circular abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the Major bridge at Km. 260+921 is 70.0m with 5 spans. The superstructure consists of RCC solid slab. Each pier and whereas abutment is regular RCC wall type abutment. Open foundations have

been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC Crash barrier have been provided on both sides of the deck.

The total length of the Major bridge at Km. 265+205 is 62.0m with 2 spans. The superstructure consists of PSC I Girder. Each Pier and Abutment is regular RCC wall type abutment. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the Major bridge at Km. 269+595 is 75.0m with 3 spans. The superstructure consists of PSC I Girder. Each Pier and Abutment is regular RCC wall type abutment. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the Major bridge at Km. 270+258 is 120.0m with 4 spans. The superstructure consists of PSC I Girder. Each Pier and Abutment is regular RCC wall type abutment. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)
1	237+688	2x21.8+2x14.8	73.2
2	239+992	4 x 31.50	63
3	251+655	4x21.00	84
4	260+921	5 X 14.00	70
5	265+205	2x31.00	62
6	269+595	3 x 25.00	75
7	270+258	4 x 30.00	120

The condition of the Superstructure and Substructure is good. Certain Minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and strip seal expansion joints are to be carried out.

4.4 Details of Minor Bridges

The details of Minor bridges in the project stretch are listed below. The type of superstructure for Minor bridges is RCC solid slab/RCC Box type and the Substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are Tar paper and elastomeric bearings. RCC Railing/ crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	242+952	2 x 10.50	10.5	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
2	244+207	3 x 7.00	21.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
3	248+442	3 x 7.00	21.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
4	253+857	3 x 7.00	21.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
5	258+109	1 x 8.00	8.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
6	258+728	1 x 8.00	8.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
7	270+42	1 x 7.00	7.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
8	273+576	3 x 7.00	21.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
9	275+219	1 x 10.00	10.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.

4.5 Details of Underpass

The details of Underpasses in the project stretch are listed below. The type of superstructure for underpass/Flyover is RCC/PSC I Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tarpaper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.4: Inventory of Underpass/Flyovers

S. No.	Chainage (Km.)	Type	Span (m.)	Total Length of Bridge (m)	Description
1	238+062	LVUP	1 x 10.00	10	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	238+230	PUP	1 x 7.00	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	238+950	FLYOVER	21x28.6+	1260	It has PSC/RCC I Girder and PSC Box Girder structure. It

S. No.	Chainage (Km.)	Type	Span (m.)	Total Length of Bridge (m)	Description
			20x29+2x40		has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
4	253+090	VUP	1 x 20	20	It has RCC I Girder. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
5	257+122	VUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6	258+645	VUP	1 x 20	20	It has RCC I Girder. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
7	264+210	VUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	266+515	LVUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	270+098	LVUP	1 x 8.00	8	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	270+600	VUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	271+740	SUBWAY	1 x 7.00	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	276+018	LVUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
13	279+378	LVUP	1 x 15	15	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

4.6 Details of Culverts:

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.6.1. Slab/Box Culverts

The details of slab/Box culverts in the project stretch are listed below.

Table 4.5: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m)	Vent Size (m)
1	237+847	1 x 6.00	4.0
2	238+310	1 x 2.50	2.1
3	239+366	1 X 3.0	3.6
4	240+133	1 x 2.00	1.9
5	240+393	1 x 4.00	3.8
6	242+456	1 x 6.00	1.15
7	243+163	1 x 2.00	1.5
8	250+914	1 x 4.00	1.5
9	253+663	1 x 5.30	3.6
10	256+138	1 x 2.00	1.9
11	262+380	1 x 5.00	1.15
12	263+095	1 x 4.50	1.5
13	265+512	1 x 2.00	2.0
14	266+810	1 x 4.50	1.9
15	268+137	1 x 4.50	3.8
16	269+735	1 x 4.00	1.15
17	269+835	1 x 3.00	1.5
18	274+664	1 x 4.50	2.0
19	279+621	1 x 3.00	2.1

4.6.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works.

4.6.3. General Description of the Pipe Culverts

There are 127 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.6: List of Pipe Culverts

S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)	S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)
1	238+081	HPC	1 x 1.20	64	260+744	HPC	1 x 0.9
2	239+015	HPC	2 x 1.20	65	261+262	HPC	1 x 1.20
3	239+478	HPC	1 x 1.20	66	261+621	HPC	1 x 1.20
4	239+749	HPC	1 x 1.20	67	261+694	HPC	1 x 1.20
5	239+857	HPC	1 x 1.20	68	261+745	HPC	1 x 1.20
6	240+494	HPC	1 x 1.20	69	261+996	HPC	1 x 1.20
7	241+493	HPC	3 x 1.20	70	262+531	HPC	1 x 1.20
8	241+920	HPC	1 x 1.20	71	262+699	HPC	1 x 1.20
9	242+777	HPC	4 x 1.20	72	263+273	HPC	1 x 1.20
10	243+508	HPC	2 x 1.20	73	263+494	HPC	1 x 1.20
11	243+777	HPC	1 x 1.20	74	263+596	HPC	2 x 0.9
12	243+874	HPC	2 x 1.20	75	264+286	HPC	1 x 1.20
13	243+998	HPC	1 x 1.20	76	264+436	HPC	4 x 1.20
14	244+150	HPC	1 x 1.20	77	264+657	HPC	1 x 0.9
15	244+558	HPC	2 x 1.20	78	264+964	HPC	1 x 1.20
16	245+562	HPC	1 x 1.20	79	265+352	HPC	1 x 1.20
17	245+659	HPC	1 x 1.20	80	265+691	HPC	1 x 1.20
18	245+782	HPC	1 x 1.20	81	265+783	HPC	1 x 1.20
19	246+342	HPC	1 x 1.20	82	266+236	HPC	1 x 1.20
20	246+996	HPC	1 x 1.20	83	266+533	HPC	1 x 1.20

S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)
21	247+815	HPC	1 x 1.20
22	248+640	HPC	1 x 1.20
23	248+918	HPC	1 x 1.20
24	249+003	HPC	1 x 1.20
25	249+141	HPC	2 x 1.20
26	249+209	HPC	1 x 1.20
27	249+624	HPC	4 x 1.20
28	249+752	HPC	1 x 1.20
29	250+758	HPC	2 x 1.20
30	250+852	HPC	2 x 1.20
31	251+017	HPC	1 x 1.20
32	251+148	HPC	1 x 1.20
33	251+374	HPC	1 x 1.20
34	251+955	HPC	1 x 1.20
35	252+009	HPC	1 x 1.20
36	252+202	HPC	1 x 1.20
37	252+565	HPC	4 x 1.20
38	252+640	HPC	1 x 1.20
39	253+059	HPC	1 x 1.20
40	253+200	HPC	1 x 1.20
41	253+239	HPC	1 x 1.20
42	253+447	HPC	1 x 1.20
43	253+473	HPC	1 x 1.20
44	254+680	HPC	1 x 1.20
45	254+946	HPC	1 x 1.20

S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)
84	266+869	HPC	2 x 1.20
85	267+032	HPC	1 x 1.20
86	267+363	HPC	1 x 1.20
87	267+576	HPC	1 x 1.20
88	267+757	HPC	2 x 1.20
89	268+431	HPC	1 x 1.20
90	268+880	HPC	1 x 1.20
91	268+920	HPC	1 x 1.20
92	269+424	HPC	1 x 1.20
93	269+540	HPC	1 x 1.20
94	270+008	HPC	2 x 1.20
95	270+144	HPC	2 x 1.20
96	270+480	HPC	2 x 1.20
97	270+802	HPC	1 x 1.20
98	270+919	HPC	1 x 1.20
99	271+040	HPC	1 x 1.20
100	271+171	HPC	1 x 1.20
101	271+995	HPC	1 x 1.20
102	272+312	HPC	1 x 1.20
103	272+411	HPC	1 x 1.20
104	272+516	HPC	1 x 1.20
105	272+800	HPC	1 x 1.20
106	273+235	HPC	1 x 1.20
107	273+347	HPC	1 x 1.20
108	274+010	HPC	3 x 1.20

S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)
46	255+056	HPC	3 x 1.20
47	255+182	HPC	4 x 1.20
48	255+377	HPC	1 x 1.20
49	255+722	HPC	1 x 1.20
50	256+073	HPC	1 x 1.20
51	256+564	HPC	1 x 1.20
52	256+699	HPC	1 x 1.20
53	256+999	HPC	2 x 1.20
54	257+650	HPC	1 x 1.20
55	258+323	HPC	1 x 1.20
56	259+033	HPC	1 x 1.20
57	259+271	HPC	3 x 1.20
58	259+327	HPC	1 x 1.20
59	259+405	HPC	1 x 1.20
60	259+560	HPC	2 x 1.20
61	259+977	HPC	4 x 1.20
62	260+647	HPC	1 x 0.9
63	260+685	HPC	1 x 0.9

S. No.	Chainage (Km.)	Type of Structure	No. of Rows X Dia (m)
109	275+006	HPC	1 x 1.20
110	275+440	HPC	1 x 1.20
111	275+719	HPC	1 x 1.20
112	276+138	HPC	1 x 1.20
113	276+566	HPC	1 x 1.20
114	276+752	HPC	1 x 1.20
115	276+976	HPC	1 x 1.20
116	277+489	HPC	1 x 1.20
117	277+792	HPC	1 x 1.20
118	278+050	HPC	1 x 1.20
119	278+173	HPC	1 x 1.20
120	278+500	HPC	1 x 1.20
121	278+692	HPC	1 x 1.20
122	279+097	HPC	2 x 1.20
123	279+197	HPC	1 x 1.20
124	279+928	HPC	1 x 1.20
125	280+501	HPC	4 x 1.20
126	281+296	HPC	1 x 1.20
127	281+648	HPC	1 x 1.20

4.6.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. REVIEW OF PAVEMENT DESIGN

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The Pavement Design shall be carried out in accordance with Indian Roads Congress guidelines. The pavement is designed in accordance with IRC: 58-2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for Highways", IRC: SP 84-2014, IRC: 15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5.1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	8 %
Two-way commercial traffic volume per day	1777
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	320
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	36
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	490

As per schedule D, (Annexure-I), clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl:5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements".

Table 5.2: Flexible Pavement for service road

S. No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	8 %
2	Design Life (Years)	20 years
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	60 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next Periodic Renewal proposed on or before 2027 and 2033.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC: 103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table 6-2.

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments & Bridge Approaches	Available as per site requirement	Good
4	Median kerb	Along the Project Highway	Provided as per IRC SP:84-2014	Good
5	Road studs & Solar Blinkers	Along the Project Highway	Provided as per IRC SP:84-2014	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

The Concessionaire is maintaining the safety features in good condition from time to time in accordance with the provisions of Schedule K of the Concession Agreement.

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General:

There is one toll Plaza on the project road at Km. 250+407. The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed at the front of each island to prevent out of control approaching vehicles crashing into the toll booth. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 7 Nos. toll booths are provided in toll plaza. Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at Toll Plaza and Control Room

S. No.	Description	Qty
1	LC WITH INDUSTRIAL PC SMPS & ACCESSORIES	6
2	AVC SENSORS INCLUDING (TMS & HTMS)	10
3	LANE EXIT BARRIER WITH LOOPS & DETECTOR	8
4	OVERHEAD LANE STATUS LIGHT (OHLS)	10
5	TRAFFIC LIGHT (TMS & HTMS)	8
6	INCIDENT CAPTURE CAMERA (TMS & HTMS)	10
7	LICENSE PLATE IMAGE CAPTURE CAMERA	10
8	LUGS, CONDUITS, CONNECTORS AND SEALANT	1
9	ELECTRONICS ENCLOSURE (TMS & HTMS)	10
10	10 KVA ONLINE UPS WITH 30 MINS BACKUP	2
11	CABLING/NETWORKING FOR LANE (TMS & HTMS)	1
12	OPERATOR MONITOR (TMS & HTMS)	8
13	THERMAL RECEIPT PRINTER (TMS & HTMS)	8
14	MANUAL BOOTH CONTROLLER (TMS & HTMS)	8

S. No.	Description	Qty
15	INTERCOM SLAVE UNIT (TMS & HTMS)	8
16	BARCODE READER (TMS & HTMS)	8
17	CASHUP PC (TMS & HTMS)	8
18	AUDIT, POS, LSDU, REPORTS, WIM PC (TMS)	1
19	POS PRINTER - THERMAL (TMS & HTMS)	1
20	INTERCOM MASTER UNIT - 20 CHANNEL (TMS)	1
21	6 KVA ONLINE UPS WITH 30 MINS BACKUP	1
22	CABLING/NETWORKING FOR LANE (TMS & HTMS)	1
23	S/W LANE LEVEL FOR SEMI AUTOMATIC LANES	1
24	S/W LANE LEVEL FOR SEMI AUTOMATIC LANES	6
25	PLAZA TMS SERVER RD450	4
26	PTZ CAMERAS (30X ZOOM) (TMS & HTMS)	1
27	BOOTH MONITORING CAMERA IP BASED (TMS)	2
28	PLAZA MONITORING CAMERA (TMS & HTMS)	10
29	IR BULLET CAMERA 3 MP - TMS	5
30	NVR 32 CHANNEL (TMS & HTMS)	3
31	CONTROL KEYBOARD AND ACESSORIES (TMS)	1
32	CCTV MONITOR 42" (TMS & HTMS)	1
33	RFID ETC TRANSCEIVER WITH ACCESSORIES	1
34	RFID ETC TRANSCEIVER WITH ACCESSORIES	2
35	TRAFFIC LIGHT (TMS & HTMS)	4
36	LANE EXIT BARRIER WITH LOOPS & DETECTOR	6
37	POS ETC RFID READER (TMS & HTMS)	2
38	LIGHT CURTAIN (OPTICAL SEPARATOR)	1
39	LC WITH INDUSTRIAL PC SMPS & ACCESSORIES	6
40	RFID TAG (TMS)	4

S. No.	Description	Qty
41	MSWIM 3 MTR (TMS & HTMS)	5
42	MSWIM 3.5 MTR (TMS & HTMS)	8
43	USER FARE DISPLAY 2- LINES,12-CHARACTER	2
44	PLAZA SOFTWARE (TMS & HTMS)	10
45	PLAZA SOFTWARE (TMS & HTMS)	1

7.3 Vehicles

The vehicles required for the operation of the highway as per requirement under the contract and observed at site are presented in the below Table.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	1 No
2	Ambulance	1 No.

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model which allows the payment of 40% of the Project cost during construction period based on progress milestones set forth by Authority to Concessionaire and Payment of balance 60% to the Concessionaire Biannually with the Interest during the balance concession period.

8.2 Payment during Construction

As per the provisions of Article 23 of the Concession Agreement, 40% of the Bid Project Cost adjusted with Price Index in accordance with Clause 23.2.3 of the CA, shall be paid during the Construction Period. Amount payable during construction period shall be paid in five equal installments upon achieving the following Project Milestones.

Table 8.1: Schedule of Payment Milestones

S. No.	Payment Milestone No	Criteria for releasing the Payment
1	I	On Achievement of 20% of Physical Progress
2	II	On Achievement of 40% of Physical Progress
3	III	On Achievement of 60% of Physical Progress
4	IV	On Achievement of 75% of Physical Progress
5	V	On Achievement of 90% of Physical Progress

During the Operation Period, remaining 60% of the balance Completion Cost shall be paid in 30 Annuities each Annuity payable biannually. Each Annuity amount shall be based on the percentages of the balance Completion Cost mentioned in 23.6.3 of the Concession Agreement. During the Operation Period following payment components are payable.

- Annuity Payment as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- As per clause 23.6.4 of CA, Interest shall be due and payable on reducing balance of completion cost at an interest rate equal to the applicable Bank Rate Plus 3%
- O & M Payment as a lump sum amount as per Clause 23.7.1 of the Concession Agreement.

Details of Annuity payments are as below.

Table 8.2: Schedule of Annuity Payments

Annuity No.	% of Completion Cost remaining to be paid on COD	Annuity due Date	Annuity paid Date
1	2.10%	19/09/2020	12-Oct-20
2	2.17%	19/03/2021	--

Annuity No.	% of Completion Cost remaining to be paid on COD	Annuity due Date	Annuity paid Date
3	2.24%	19/09/2021	--
4	2.31%	19/03/2022	--
5	2.38%	19/09/2022	--
6	2.45%	19/03/2023	--
7	2.52%	19/09/2023	--
8	2.60%	19/03/2024	--
9	2.68%	19/09/2024	--
10	2.76%	19/03/2025	--
11	2.84%	19/09/2025	--
12	2.93%	19/03/2026	--
13	3.02%	19/09/2026	--
14	3.11%	19/03/2027	--
15	3.20%	19/09/2027	--
16	3.30%	19/03/2028	--
17	3.40%	19/09/2028	--
18	3.50%	19/03/2029	--
19	3.61%	19/09/2029	--
20	3.72%	19/03/2030	--
21	3.83%	19/09/2030	--
22	3.94%	19/03/2031	--
23	4.06%	19/09/2031	--
24	4.18%	19/03/2032	--
25	4.25%	19/09/2032	--
26	4.25%	19/03/2033	--
27	4.44%	19/09/2033	--

Annuity No.	% of Completion Cost remaining to be paid on COD	Annuity due Date	Annuity paid Date
28	4.71%	19/03/2034	--
29	4.75%	19/09/2034	--
30	4.75%	19/03/2035	--

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
iii. Carrying out preventive maintenance of the Project road;
iv. Taking-up routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
v. Taking-up major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
vi. Maintenance of the lighting system to be functional;

vii. Functioning of the Patrolling System
viii. Functioning of rescue and medical aid services
ix. Ambulance as and when required
x. Functioning of the Project Facilities
xi. Administrative, Operational and Maintenance Base Camp
xii. Truck Lay byes
xiii. Pickup Bus stops / Bus Bays
xiv. Protection of the environment and provision of equipment and materials therefor;
xv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xvi. Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute
2nd Periodic Maintenance	2033	Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sandstorms, hurricanes, cyclones, earthquakes or landslides that shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction
c. Construction of Diversions
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

As per Schedule K of CA, if any stretch exceeds 2750mm in a KM, the stretch shall be rectified. however, the independent Engineer has not issued any NCRS in this Regard

9.7 O & M Forecast

The O & M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 4.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	1.565	2.056		4.48	8.10
2021	1.612	2.118		4.61	8.34
2022	1.660	2.181		4.75	8.59
2023	1.710	2.247		4.89	8.85
2024	1.762	2.314		5.04	9.12
2025	1.814	2.384		5.19	9.39
2026	1.869	2.455		5.35	9.67
2027	1.925	2.529	31.64	5.51	41.60
2028	1.983	2.605		5.67	10.26
2029	2.042	2.683		5.84	10.57
2030	2.103	2.763		6.02	10.89
2031	2.166	2.846		6.20	11.21
2032	2.231	2.932		6.39	11.55
2033	2.298	3.020	41.92	6.58	53.82
2034	2.367	3.110		6.77	12.25
2035	2.378	3.124		6.81	12.31
Total	**31.488**	**41.367**	**73.56**	**90.11**	**236.52**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,

- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE 6**.

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the NHAI are provided in **Annexure 8**.

10.11 O & M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Taking-up routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Taking up major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment

- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the % of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance:

As per clause 26.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 7**. Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Property covered
			From	To	
Electronic Equipment Insurance	The Oriental Insurance Company Limited	171200/44/2021/38	08.09.2020	07.09.2021	Electronic equipment provided for Road and Bridges stretch connection
Employees Compensation Insurance	HDFC ERGO General Insurance Co Ltd	3114203370239300000	24.03.2020	23.03.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project
Standard Fire & Special Perils Policy	The Oriental Insurance Co Ltd	171200/11/2021/408	05.10.2020	04.10.2021	Toll Plaza Building, and its assets & Toll Booths, Equipment, Road furniture, Fixtures, Electrical poles etc.
Fire Industrial All Risk Policy	The Oriental Insurance Co Ltd	171200/11/2021/407	05.10.2020	04.10.2021	Operation and maintenance of Roads, Bridges etc.

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

Toll Plaza is constructed at Km. 250+407 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays and truck lay byes are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza, bus bay and truck lay bye locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 84-2014. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O & M contractor effectively, based on documents reviewed, time-to-time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance is scheduled in the year 2027.

12.7 Epilogue:

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)
237+655	238+000								G		PS	F	F	LD	F
238+000	239+000								G		PS	F	F	LD	F
239+000	240+000								G		PS	F	F	LD	F
240+000	241+000								G		ES	F	F	ULD	PF
241+000	242+000								G		ES	F	F	ULD	PF
242+000	243+000								G		ES	F	F	ULD	PF
243+000	244+000								G		ES	F	F	ULD	PF
244+000	245+000								G		ES	F	F	ULD	PF
245+000	246+000								G		ES	F	F	ULD	PF
246+000	247+000								G		ES	F	F	ULD	PF

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)
247+000	248+000								G		ES	F	F	ULD	PF
248+000	249+000								G		ES	F	F	ULD	PF
249+000	250+000								G		ES	F	F	ULD	PF
250+000	251+000								G		PS	F	F	LD	F
251+000	252+000								G		PS	F	F	LD	F
252+000	253+000								G		PS	F	F	LD	F
253+000	254+000								G		ES	F	F	ULD	PF
254+000	255+000								G		ES	F	F	ULD	PF
255+000	256+000								G		ES	F	F	ULD	PF
256+000	257+000								G		PS	F	F	LD	F
257+000	258+000								G		PS	F	F	LD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)
258+000	259+000								G		PS	F	F	LD	F
259+000	260+000								G		ES	F	F	ULD	PF
260+000	261+000								G		ES	F	F	ULD	PF
261+000	262+000								G		ES	F	F	ULD	PF
262+000	263+000								G		ES	F	F	ULD	PF
263+000	264+000								G		PS	F	F	LD	F
264+000	265+000								G		PS	F	F	LD	F
265+000	266+000								G		ES	F	F	ULD	PF
266+000	267+000								G		PS	F	F	LD	F
267+000	268+000								G		PS	F	F	LD	F
268+000	269+000								G		ES	F	F	ULD	PF

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)
269+000	270+000								G		ES	F	F	ULD	PF
270+000	271+000								G		PS	F	F	LD	F
271+000	272+000								G		PS	F	F	LD	F
272+000	273+000								G		PS	F	F	LD	PF
273+000	274+000								G		ES	F	F	ULD	PF
274+000	275+000								G		ES	F	F	ULD	PF
275+000	276+000								G		PS	F	F	LD	F
276+000	277+000								G		PS	F	F	LD	F
277+000	278+000								G		PS	F	F	LD	F
278+000	279+000								G		PS	F	F	LD	F
279+000	280+000								G		ES	F	F	ULD	PF

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)
280+000	281+000								G		ES	F	F	ULD	PF
281+000	281+560								G		ES	F	F	ULD	PF

Annexure 2: Condition of structures

S.No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	237+688	Major bridge	Good	Good	Good	Good	Good	Good	-
2	239+992	Major bridge	Good	Good	Good	Good	Good	Good	-
3	251+655	Major bridge	Good	Good	Good	Good	Good	Good	-
4	260+921	Major bridge	Good	Good	Good	Good	Good	Good	-
5	265+205	Major bridge	Good	Good	Good	Good	Good	Good	-
6	269+595	Major bridge	Good	Good	Good	Good	Good	Good	-
7	270+258	Major bridge	Good	Good	Good	Good	Good	Good	-
8	242+952	Major bridge	Good	Good	Good	Good	Good	Good	-
9	244+207	Minor bridge	Good	Good	Good	-	Good	Good	-
10	248+442	Minor bridge	Good	Good	Good	-	Good	Good	-
11	253+857	Minor bridge	Good	Good	Good	-	Good	Good	-
12	258+109	Minor bridge	Good	Good	Good	-	Good	Good	-
13	258+728	Minor bridge	Good	Good	Good	-	Good	Good	-
14	270+420	Minor bridge	Good	Good	Good	-	Good	Good	-
15	273+576	Minor bridge	Good	Good	Good	-	Good	Good	-

S.No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
16	275+219	Minor bridge	Good	Good	Good	-	Good	Good	-
17	238+062	LVUP	Good	Good	Good	-	Good	Good	-
18	238+230	PUP	Good	Good	Good	-	Good	Good	-
19	238+950	FLYOVER	Good	Good	Good	-	Good	Good	-
20	253+090	VUP	Good	Good	Good	-	Good	Good	-
21	257+122	VUP	Good	Good	Good	-	Good	Good	-
22	258+645	VUP	Good	Good	Good	-	Good	Good	-
23	264+210	VUP	Good	Good	Good	-	Good	Good	-
24	266+515	LVUP	Good	Good	Good	-	Good	Good	-
25	270+098	LVUP	Good	Good	Good	-	Good	Good	-
26	270+600	VUP	Good	Good	Good	-	Good	Good	-
27	271+740	Subway	Good	Good	Good	-	Good	Good	-
28	276+018	LVUP	Good	Good	Good	-	Good	Good	-
29	279+378	LVUP	Good	Good	Good	-	Good	Good	-

Annexure 3: Condition of Culverts

Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	238+081	Good	Good	Fair	fair
2	239+015	Good	Good	Fair	fair
3	239+478	Good	Good	Fair	fair
4	239+749	Good	Good	Fair	fair
5	239+857	Good	Good	Fair	fair
6	240+494	Good	Good	Fair	fair
7	241+493	Good	Good	Fair	fair
8	241+920	Good	Good	Fair	fair
9	242+777	Good	Good	Fair	fair
10	243+508	Good	Good	Fair	Good
11	243+777	Good	Good	Fair	Good
12	243+874	Good	Good	Fair	Good
13	243+998	Good	Good	Fair	Good
14	244+150	Good	Good	Fair	fair
15	244+558	Good	Good	Fair	fair
16	245+562	Good	Good	Fair	Good
17	245+659	Good	Good	Fair	Good
18	245+782	Good	Good	Fair	Good
19	246+342	Good	Good	Fair	Good
20	246+996	Good	Good	Fair	Good
21	247+815	Good	Good	Fair	Good
22	248+640	Good	Good	Fair	Good
23	248+918	Good	Good	Fair	Good
24	249+003	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
25	249+141	Good	Good	Fair	Good
26	249+209	Good	Good	Fair	Good
27	249+624	Good	Good	Fair	Good
28	249+752	Good	Good	Fair	Good
29	250+758	Good	Good	Fair	Good
30	250+852	Good	Good	Fair	fair
31	251+017	Good	Good	Fair	fair
32	251+148	Good	Good	Fair	Good
33	251+374	Good	Good	Fair	fair
34	251+955	Good	Good	Fair	Good
35	252+009	Good	Good	Fair	Good
36	252+202	Good	Good	Fair	fair
37	252+565	Good	Good	Fair	fair
38	252+640	Good	Good	Fair	fair
39	253+059	Good	Good	Fair	Good
40	253+200	Good	Good	Fair	Good
41	253+239	Good	Good	Fair	Good
42	253+447	Good	Good	Fair	fair
43	253+473	Good	Good	Fair	fair
44	254+680	Good	Good	Fair	fair
45	254+946	Good	Good	Fair	Good
46	255+056	Good	Good	Fair	Good
47	255+182	Good	Good	Fair	Good
48	255+377	Good	Good	Fair	Good
49	255+722	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
50	256+073	Good	Good	Fair	Good
51	256+564	Good	Good	Fair	Good
52	256+699	Good	Good	Fair	Good
53	256+999	Good	Good	Fair	Good
54	257+650	Good	Good	Fair	Good
55	258+323	Good	Good	Fair	Good
56	259+033	Good	Good	Fair	Good
57	259+271	Good	Good	Fair	Good
58	259+327	Good	Good	Fair	Good
59	259+405	Good	Good	Fair	Good
60	259+560	Good	Good	Fair	Good
61	259+977	Good	Good	Fair	Good
62	260+647	Good	Good	Fair	Good
63	260+685	Good	Good	Fair	Good
64	260+744	Good	Good	Fair	Good
65	261+262	Good	Good	Fair	Good
66	261+621	Good	Good	Fair	Good
67	261+694	Good	Good	Fair	Good
68	261+745	Good	Good	Fair	Good
69	261+996	Good	Good	Fair	Good
70	262+531	Good	Good	Fair	Good
71	262+699	Good	Good	Fair	Good
72	263+273	Good	Good	Fair	Good
73	263+494	Good	Good	Fair	Good
74	263+596	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
75	264+286	Good	Good	Fair	Good
76	264+436	Good	Good	Fair	Good
77	264+657	Good	Good	Fair	Good
78	264+964	Good	Good	Fair	Good
79	265+352	Good	Good	Fair	Good
80	265+691	Good	Good	Fair	Good
81	265+783	Good	Good	Fair	Good
82	266+236	Good	Good	Fair	Good
83	266+533	Good	Good	Fair	Good
84	266+869	Good	Good	Fair	Good
85	267+032	Good	Good	Fair	Good
86	267+363	Good	Good	Fair	Good
87	267+576	Good	Good	Fair	Good
88	267+757	Good	Good	Fair	Good
89	268+431	Good	Good	Fair	Good
90	268+880	Good	Good	Fair	Good
91	268+920	Good	Good	Fair	Good
92	269+424	Good	Good	Fair	Good
93	269+540	Good	Good	Fair	Good
94	270+008	Good	Good	Fair	Good
95	270+144	Good	Good	Fair	Good
96	270+480	Good	Good	Fair	Good
97	270+802	Good	Good	Fair	Good
98	270+919	Good	Good	Fair	Good
99	271+040	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
100	271+171	Good	Good	Fair	Good
101	271+995	Good	Good	Fair	Good
102	272+312	Good	Good	Fair	Good
103	272+411	Good	Good	Fair	Good
104	272+516	Good	Good	Fair	Good
105	272+800	Good	Good	Fair	Good
106	273+235	Good	Good	Fair	Good
107	273+347	Good	Good	Fair	Good
108	274+010	Good	Good	Fair	Good
109	275+006	Good	Good	Fair	Good
110	275+440	Good	Good	Fair	Good
111	275+719	Good	Good	Fair	Good
112	276+138	Good	Good	Fair	Good
113	276+566	Good	Good	Fair	Good
114	276+752	Good	Good	Fair	Good
115	276+976	Good	Good	Fair	Good
116	277+489	Good	Good	Fair	Good
117	277+792	Good	Good	Fair	Good
118	278+050	Good	Good	Fair	Good
119	278+173	Good	Good	Fair	Good
120	278+500	Good	Good	Fair	Good
121	278+692	Good	Good	Fair	Good
122	279+097	Good	Good	Fair	Good
123	279+197	Good	Good	Fair	Good
124	279+928	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
125	280+501	Good	Good	Fair	Good
126	281+296	Good	Good	Fair	Good
127	281+648	Good	Good	Fair	Good

Box /Slab Culverts

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	237+847	Good	Good	Fair	Good	Good
2	238+310	Good	Good	Fair	Good	Good
3	239+366	Good	Good	Fair	Good	Good
4	240+133	Good	Good	Fair	Good	Good
5	240+393	Good	Good	Fair	Good	Good
6	242+456	Good	Good	Fair	Good	Good
7	243+163	Good	Good	Fair	Good	Good
8	250+914	Good	Good	Fair	Good	Good
9	253+663	Good	Good	Fair	Good	Good
10	256+138	Good	Good	Fair	Good	Good
11	262+380	Good	Good	Fair	Good	Good
12	263+095	Good	Good	Fair	Good	Good
13	265+512	Good	Good	Fair	Good	Good
14	266+810	Good	Good	Fair	Good	Good
15	268+137	Good	Good	Fair	Good	Good
16	269+735	Good	Good	Fair	Good	Good
17	269+835	Good	Good	Fair	Good	Good
18	274+664	Good	Good	Fair	Good	Good
19	279+621	Good	Good	Fair	Good	Good

Annexure 4: Operation & Maintenance cost

Routine Maintenance cost for 1 year (1st Cycle) for Four Lane with paved shoulder of NH-66 Kalmath to Zarap section

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate (Rs)	Amount (Rs)	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km.	31.838	12	4	350	5,34,878	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km.	12.067	24	4	350	4,05,451	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km.	43.905	52	1	1939	44,26,853	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Km.	31.838	52	32	1939	32,10,162	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km.	31.838	12	12	21000	2,52,000	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km.	30.7335	2	10	350	2,15,135	10 Nos of labour per KM (70% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	236	2	3	650	9,20,400	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km.	43.905	4	2	350	1,22,934	02 nos of Labour

9	Maintenance of Bus shelters	Monthly	Nos.	0	12	2	350	-	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	1	12	60	350	2,52,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	26	2	4	350	72,800	04 nos of Labour for removal of vegetation/Structure
13	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm.	15	1	550	124	10,23,000	2.5% of CW area considered 22.0x1000x2.5%
								1,14,35,613	

EQUIPMENT SUPPLY

1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.		12			4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	43.905	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance

3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.		12		250000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	43.905	12	2	12000	26,343	(12000/year)
6	Manhoise / Skyscraper	Monthly	Nos.		12		4,00,000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos.	43.905	4	3	2500	29,270	Per Supervisor
8	Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month
9	Toll plaza AMC	Yearly	Nos.		12	1	100000	12,00,000	100000/month
								28,55,613	

1	Patrolling vehicle	Monthly	Nos.	12		2	300000	600000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance

2	Ambulance	Monthly	Nos.	12		1	240000	240000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Tow away trucks and Crane	Monthly	Nos.	12		1	400000	400000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos.	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
								13,60,000	
Operation & Maintenance cost								**1,56,51,225.70**	

Incidental cost for 1 year (1st Cycle) for Four Lane with paved shoulder of NH-66 Kalmath to Zarap section

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	6242.2635	516	32,21,008	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm.	1	1	220.8152	168	37,097	2% of Flexible Pavement (changed quantities to only Service road portion)
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1317.15	225	8,89,076	10% of total Shoulder length throughout the project
4	Sign Board	Half yearly	Nos.	1	2	95	4500	8,55,000	5 % of Total sign boards of 1900 nos for Half Year
5	MBCB	Monthly	RMT.	43.905		1000	2400	24,00,000	5% of Total qty per year - (considered 2400 per Rm)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	43.905	4	11	2250	99,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	43.905	1	1756.2	250	4,39,050	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	5618	1	169	55000	92,95,000	3 % of total poles per year

Incidental cost for 1 year (1st Cycle) for Four Lane with paved shoulder of NH-66 Kalmath to Zarap section

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	525.07	4000	21,00,276	Considered 0.5% of the total volume in O & M period,
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT.	10255		307.662	3985	12,26,033	3% of Length replacement in every 5 years (Quantity to be estimated)
Total amount for 1 Year								**2,05,61,540**	

Operation Expenses

S. No.	Particulars	Amounts
1	Man Power	₹ 99,60,000
2	Fuel for Generator & Vehicles	₹ 1,28,04,000
3	Electricity	₹ 1,51,80,000
4	Stationary	₹ 1,00,000
5	Replacement of Electrical Fixtures	₹ 61,43,395
6	Refurbishment of Toll Plaza Equipment	₹ 6,00,000
Total Amount		**₹ 4,47,87,395**

Abstract Summary of Major/Periodic Maintenance

Description	Due Date	Base Cost (Rs)	Esc period	Escalation rate per year	Cost of MMR on due date @ 3% escalation	Rs In crores
Date of Estimation	23-MAY-20					
1st major maintenance - Highway	22-MAY-27	2439,28,938	7.00	3.0%	**2951,54,015**	**29.52**
1st major maintenance - Structures	22-MAY-27	175,59,171	7.00	3.0%	**212,46,597**	**2.12**
2nd major maintenance - Highways	22-MAY-32	2882,00,203	12.00	3.0%	**3919,52,277**	**39.20**
2nd major maintenance - Structures	22-MAY-32	200,22,024	12.00	3.0%	**272,29,953**	**2.72**
				Total	**₹ 7355,82,842**	**73.56**

Major Maintenance BOQ

BoQ Item No.	DESCRIPTION	Unit	Qty	RATE	AMOUNT Rs.	Qty	RATE	AMOUNT Rs.
	Chapter 4. Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm.	4,11,559.00	14	57,61,826	4,11,559.00	14	57,61,826
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum.	16,462.36	7,682.00	12,64,63,850	28,650.52	7,682.00	22,00,93,295
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS.	40,838.35	250	1,02,09,588	40,838.35	250	1,02,09,588
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm.	87,511.50	130	1,13,76,495	87,511.50	130	1,13,76,495
5	Earthern shoulder @ service roads	Cum.	7,285.40	250	18,21,350	7,285.40	250	18,21,350

BoQ Item No.	DESCRIPTION	Unit	Qty	RATE	AMOUNT Rs.	Qty	RATE	AMOUNT Rs.
6	Micro surfacing	Sqm.	4,40,244.00	175	7,70,42,700		175	
	Total				**23,26,75,808**	-	-	**24,92,62,553**
	Chapter 9 Junctions, Traffic Signs Marking and Other Appurtenances			-		-	-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	RMT.	-	380		72,854.00	380	2,76,84,520
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm.	18,915.95	516	97,60,630	18,915.95	516	97,60,630
3	Road Studs	Nos.	1,990.00	750	14,92,500	1,990.00	750	14,92,500
	Total Chapter 9			-	**1,12,53,130**	-	-	**3,89,37,650**
	Grand Total				**24,39,28,938**	-		**28,82,00,203**

Annexure 5: Letter of Award

GOVERNMENT OF INDIA
MINISTRY OF ROAD TRANSPORT & HIGHWAYS

Transport Bhawan,
1, Parliament Street,
New Delhi–110 001

No. RW/NH-37015/26/2016/NHDP-IVA **Dated 25th November, 2016**

To

M/s Dilip Buildcon Limited,
[Kind Attn: Sh. Kundan Kumar Das, AGM Business Development],
Plot No. 5, Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road, Bhopal – 462 016, email: db@dilipbuildcon.co.in

Subject: Rehabilitation and up-gradation of NH-66 (Erstwhile NH-17) from Km 406/030 to Km 450/170 [Kalmath to Zarap section] to four-lane with paved shoulder in the state of Maharashtra under NHDP–IV on Hybrid Annuity Mode.

Reference: Tender Notice no. RW/NH-37015/26/2016/NHDP-IV dated 02.09.2016 [Tender ID 28016]

This is to notify that your bid dated 17.10.2016 for execution of the work for "**Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 406/030 to Km 450/170 [Kalmath to Zarap section] to four lane with paved shoulder in the state of Maharashtra under NHDP–IV on Hybrid Annuity Mode**" for the "**Bid Project Cost of Rs. 914,00,00,000/- (Rupees Nine Hundred Fourteen Crores only)**" and "**First Year O&M Cost of Rs. 3,00,00,000/- (Rupees Three Crores only)**" is hereby accepted by the Ministry of Road Transport & Highways declaring you as the "**Selected bidder**" as per the provisions of Clause 1.2.6 of RFP. Accordingly, this Letter of Award (the LoA) is being issued, in duplicate, to you.

2. Accordingly, you are requested to ensure the followings within stipulated time:

(i) You shall sign and return the duplicate copy of the LOA in acknowledgement thereof, within **7 (seven)** days of the receipt of the LOA as per clause 3.8.4 of RFP. A copy of the same may be endorsed to Chief Engineer (NH), PWD Maharashtra, Navi Mumbai.

(ii) You shall promote and incorporate the Concessionaire as a limited liability company under the Companies Act 2013, as the entity which shall undertake and perform the obligations and exercise the rights of the Bidder under the LOA, including the obligation to enter into this Concession Agreement pursuant to the LOA for undertaking the Project.

(iii) The Concessionaire has to join in the said request of the selected bidder/Consortium to the Authority to accept it as the entity which shall undertake and perform the obligations and exercise the rights of the selected bidder/Consortium including the obligation to enter into this Concession Agreement pursuant to the LOA. The Concessionaire has to further represent to the effect that it has been promoted by the selected bidder/Consortium for the purposes hereof and has delivered to the Authority a legal opinion with respect to the authority of the Concessionaire to enter into this Concession Agreement and the enforceability of the provisions thereof.

25/11/16

(iv) The Concessionaire shall execute the Concession Agreement with Chief Engineer (NH), PWD Maharashtra within **45 (Forty five) days** of the date of issue of LOA in pursuant to clause 1.3 of RFP; and

(v) The Concessionaire shall, for the performance of its obligations hereunder during the Construction Period, provide to the Authority no later than **30 (Thirty) days** from the date of this agreement, an irrevocable and unconditional guarantee from a Bank for a sum equivalent to 5% **(Five per cent)** of the **Bid Project Cost [Rs. 45.70 crores (Rupees Forty Five Crores and Seventy Lakhs only)]** in the form set forth in Schedule-F **(the "Performance Security")**.

3. You are required to comply with all the terms and conditions set forth in the RFP documents and subsequent addendum/corrigendum issued. In case of any delay/default on your part, you shall be liable for action as stated in the RFP Document.

(A.K. Nagpal)
Chief Engineer (NHDP-IVA)

Copy to:

1. PPS to Secretary (RT&H)
2. PPS to ADG-I, MoRT&H, New Delhi
3. CE (P-6), MoRT&H, New Delhi
4. Principal Secretary to Govt. of Maharashtra, Public Works Department, Mumbai
5. Chief Engineer (NH), PWD Maharashtra, Konkan Bhawan, Mumbai for further necessary action as per para 2 above.
6. Regional Officer, MoRT&H, Mumbai
7. Finance Wing

Annexure 6: Provisional Certificate

Schedule-J

"PROVISIONAL CERTIFICATE"

1. We, Artefact Projects Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.02.2017 **(the "Agreement"),** for development and operation of Four-Laning of the Kalmath to Zarap Section of National Highway No. 17 ((New NH-66) from Km. 406.030 to Km. 450.170 Design Ch. Km. 237.655 to Km. 281.560) Project (the **"Project Highway"**) on design , build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis through M/s. DBL Kalmath Zarap Highways Limited, hereby certify that the tests specified in Article 14 and Schedule-I of the Concession Agreement have been undertaken for the partial Project / section of **40.108 Km** (from Design Ch. Km. 239.580 to Km. 251.400, Km. 251.610 to Km. 265.245, Km. 265.545 to Km. 271.270 and Km. 272.630 to Km. 281.560) of the Project to determine compliance thereof with the provisions of the Agreement.

2. Construction Works forming part of the Project/section of the Project that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and all such works in the time and manner set forth in the Agreement. Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. We are satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project/section of **40.108 Km** (from Design Ch. Km. 239.580 to Km. 251.400, Km. 251.610 to Km. 265.245, Km. 265.545 to Km. 271.270 and Km. 272.630 to Km. 281.560) of the Project, pending completion thereof.

3. In view of the foregoing, We are satisfied that the partial Project/section of **40.108 Km** of the Project can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project/section of the Project is hereby provisionally declared fit for entry into commercial operation on this the **23rd** day of March 2020.

ACCEPTED, SIGNED, SEALED AND DELIVERED FOR AND ON BEHALF OF CONCESSIONAIRE By:	SIGNED, SEALED AND DELIVERED FOR AND ON BEHALF OF INDEPENDENT ENGINEER By:
DBL KALMATH ZARAP HIGHWAYS LIMITED	ARTEFACT PROJECTS LIMITED NAGPUR
K. K. Gautam **Authorized Signatory** **M/s DBL Kalmath Zarap Highways Limited**	**Siddharth Shah** **Authorized Signatory** **M/s Artefact Projects Limited**

b. The Safety Audit was carried out on **25.01.2020 to 26.01.2020** by the Safety Auditors **(M/s Indian Infratech)** appointed by the PWD to check the compliances prior to the issue of Provisional Completion Certificate. Subsequently, the Opening Stage Safety Audit Report was submitted to the PWD-NH Division, Ratnagiri by the safety consultant vide their letter no. IIT/RSC/HAM/pkg-5/20 dated 27.01.2020. The Concessionaire vide their letter no. DBL KZHL/MORT&H/Kalmath-Zarap/2019-20/580 dated 28.01.2020 informed that necessary improvements/corrections have been made at site.

c. All tests specified in **Schedule-I** of the Concession Agreement have been successfully completed in accordance with **Clause 14.1.1** of the Concession Agreement & submitted by the concessionaire vide their letter no. DBL KZHL/MORT&H/Kalmath-Zarap/2019-20/587 dated 27.02.2020. Substantial work by the Concessnaire qualifying for PCOD has been completed within the Scheduled Project Completion Date of 31.01.2020.

d. All NCRs in the PCOD stretches are duly complied by the Concessionaire and have been satisfactorily closed.

In view of the above, we hereby issue **"Provisional Completion Certificate" (Annexure-C)** for the length of **40.108 Km** out of **43.905 Km** (details as per Para 3 above) along with appended Punch List as per **Annexure-A** of this letter.

Kindly acknowledge the receipt.
Thanking you,

Yours faithfully,
For **Artefact Projects Ltd.**

Siddharth Shah
Authorized Representative

Encl: 1.Annexure-A : Punch List –A (work to be completed within 90 days from date of issuance of PCOD)
2.Annexure-B : List –B (Incomplete stretches for the reasons not attributable to the concessionaire to be completed beyond the Scheduled Project Completion Date as per the Concession Agreement)
3.Annexure-C : Provisional Certificate as per Schedule-J of Concession Agreement

Cc.: 1. Regional Officer - MORTH, Mumbai, Maharashtra - For Information
2.Chief Engineer, National Highway (P.W.D.), Konkan Bhavan, Navi Mumbai - For Information
3. Superintending Engineer, PWD, NH-Division, Bandra-Mumbai - For Information
4. Executive Engineer, PWD, NH Division Ratnagiri - For Information & necessary action

Annexure 7: Insurance

This Document is Digitally Signed
Signer: ATUL JERAJANI
Date: Fri, Nov 6, 2020 14:15:33 IST
Location: NOIDA
Reason: Signing Policy at OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: 171200/44/2021/38	Prev Policy No	:
Cover Note No	: ER1700203530	Cover Note Dt	: 08/09/2020
Insured's Code	: 106657808	Issuing Office Code	: 171200
Insured's Name	: DBL Kalmath Zarap Highways Ltd. (GSTIN: 27AAFCD9602H1ZM)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Flat No. 301, Apartment No. A-06 SLPL doctor colony Samaj Ekta Gruhniman Society,Somalvada Nagpur, Maharashtra ¿ 440015	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / avni.sheth@unisoninsurance.net NAGPUR 440015	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA, MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	: 0265-2252274/0265-2357445/0265-2356033/

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000846 - 17/09/2020 GST INVOICE NO :2419487409 UIN :0

Gross Premium : 8,358 GST : 1,504 Stamp Duty : 1 Total : 9,862

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 1,67,16,947

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Kalmath to Zarap

MAHARASHTRA - 416602

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		1,67,16,947

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule). The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

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Date: Fri, Nov 6, 2020 14:11:33 IST
Location: NOIDA
Reason: Signing Policy for OICL

Attached to and forming part of policy number 171200/44/2021/38

2) Winchester Drive and/or Hard Disc-25% of claim amount subject to a minimum of Rs.10,000/-

In case of computers, the term 'equipment' shall include the entire computer system comprising of CPU, Key boards, Monitors, Printers, Stabilizers, UPS.

SCHEDULE OF PREMIUM

Cover Description	Premium
TOTAL PREMIUM	8,358
ADD : IGST	1,504
STAMP DUTY	1
TOTAL AMOUNT	9,862

Total Sum Insured In Words : Indian Rupees One Crore Sixty-Seven Lakhs Sixteen Thousand Nine Hundred Forty-Seven Only
Total Amount Paid : Indian Rupees Nine Thousand Eight Hundred Sixty-Two Only

The Insurance under this policy is extended to cover risks of (as per forms attached):
EAR - EARTHQUAKE COVER
STFI Inclusion Cover

Excess / Deductible :
The following minimum deductibles are applicable based on Sum Insured of the policy

The Insurance under this policy is subject to warranties & Clauses (as per forms attached) :
In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
Communicable Disease Exclusion Clause
Exclusion-Any Direct or indirect loss by infectious or contagious disease

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at CBU Vadodara (GSTIN: 24AAACT0627R2Z4) on 17TH DAY OF SEPTEMBER 2020

For and on behalf of
The Oriental Insurance Company Limited

Entered By : FARHAN KHAN
Examined By : A K Parmar

Authorised Signatory

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

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Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 2 of 2
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FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	: 171200/11/2021/407	Prev Policy No	:
Cover Note No	: 170000171 2068	Cover Note Dt	: 09/02/2021
Insured's Name	: 106657808 - DSL Kalmath Zarap Highways Ltd. (GSTIN: 27AAFCD0903H1ZM)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAAGT0627F1ZA)
Address	: Flat No. 301, Apartment No. A-06 SILPL doctor colony Samaj Ekta Gruhnirman Society, Somalwada Nagpur, Maharashtra , 440015 NAGPUR 440015	Address	: 1st FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel./Fax /Email	: / / 0 / NA	Tel./Fax /Email	: 0265-2427073 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LG0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 09/02/2021 TO MIDNIGHT OF 04/10/2021

Collection No & Dt : DC_I_IND 3214001413 - 12/02/2021 GST INVOICE NO :2419835662 UIN :0

Gross Premium : 63,45,086 GST : 11,42,115 Stamp Duty : 5 Total : 74,87,201

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLIANZ GEN INSURANCE	40.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Operation & maintenance of Roads, Bridges NH-66 (Erstwhile NH-17) From Km 406.030 to Km 450.170 to four lane with paved shoulder under NHDP-IV on hybrid annuity, Sindhudurg, Kankavli, Maharashtra-416602

Deductible :

Risk Description : Roads

Block Description : 1

Sum Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Underpasses,drainages, Utilities, Side Box, Causeways, Machineries(Full desc as per annexure)		336,17,27,909
Bridges (Major, Minor, Railway, River Incl all Other Bridges) ,Culverts		297,82,43,143

SCHEDULE OF PREMIUM

Place :
Date : 12/02/2021

For and on behalf of
The Oriental Insurance Company Limited

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In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

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STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	: 171200/11/2021/408	Prev Policy No	: -
Cover Note No	: 1700001712069	Cover Note Dt	: 09/02/2021
Insured's Name	: 106657808 - DBL Kalmath Zarap Highways Ltd. (GSTIN: 27AAFCD9602H1ZM)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Flat No. 301, Apartment No. A-06 SLPL doctor colony Samaj Ekta Gruhnirman Society,Somalvada Nagpur, Maharashtra ¿ 440015 NAGPUR 440015	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	

Period of Insurance : FROM 00:00 ON 09/02/2021 TO MIDNIGHT OF 04/10/2021

Collection No & Dt : DC_I_IND 3214001413 - 12/02/2021 GST INVOICE NO :2419836095 UIN :0

Gross Premium : 4,28,408 GST : 77,113 Stamp Duty : .5 Total : 5,05,521

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLIANZE GEN INSURANCE	40.00

RISK DETAILS

1 Location of the Risk : NH-66 (Erstwhile NH-17) From Km 406.030 to Km 450.170to four lane with paved shoulder under NHDP-IV on hybrid annuity, Sindhudurg, Kankavli, Maharashtra- 416602

MAHARASHTRA
SINDHUDURG
416602
SINDHUDURG

Risk Description : Roads

Place :
Date : 12/02/2021

For and on behalf of
The Oriental Insurance Company Limited

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In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

March 27, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203370239300000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Rasgotra

Authorised Signatory

3114203370239300000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203370239300000 **Employees Compensation Insurance**

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	27/03/2020

Period of Insurance	From Date & Time	24/03/2020 00:01 AM	To Date & Time	23/03/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203370239300000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 8: Change of Scope

S. No.	Description	Status of the work	Status of COS Approval
1	Additional cross Drainage Structure-29 Nos	Work has been completed at site.	COS Proposal has been approved by the Competent Authority, Minutes of meeting vide letter dated 15.03.2019
2	Construction of at Grade 6 lane road with service road(1100mt) on both sides in place of 2Nos. of VUPs at Km. 271+740 & Km. 272+035. Considered under Negative COS	Work is completed except 1.5 km length of Service Road	COS Proposal has been forwarded by the E.E NH Division, Ratnagiri to the SE recommending to issue change of scope Order. Vide letter No. NHD/RTN/PB/PO-1/3276 Dated 06.11.2019
3	Major and Minor Bridges-3 Nos	2 Major Bridges are completed while one Major Bridge is in progress	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020
4	LVUP at Km. 238+065	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020
5	LVUP @Km. 270+100	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020

S. No.	Description	Status of the work	Status of COS Approval
6	New MNB and Drain Ch. 270+420	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020
7	PUP @Km. 238+230	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020
8	Subway @ Km. 271+741	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020
9	Construction of Retaining wall	Completed	Proposal has been forwarded to the Competent Authority by the SE, NH Circle, Navi Mumbai for approval vide letter No. SE/NHC/PB/PO-2/PKG-10/2020/339 Dated 04.03.2020
10	Installation of Hybrid ETC lanes & Toll plaza level equipment	Completed	COS Proposal has been forwarded by the S.E NH Circle, Navi Mumbai to the CE, NH recommending to issue change of scope Order. Vide letter No. SE/NHC/TC/Pkg.10/COS/150/2020 Dated 24.01.2020

SHREM FINANCIAL PRIVATE LIMITED

Four Laning of Yavatmal to Wardha Package III) section of NH-361from Km.400.575 to Km.465.500(design Length 64.925 Km) in the State of Maharashtra under NHDP Phase IV on Hybrid Annuity Mode

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Lanning of Yavatmal to Wardha Package III) section of NH-361from Km.400.575 to Km.465.500(design Length 64.925 Km) in the State of Maharashtra under NHDP Phase IV on Hybrid Annuity Mode

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Yavatmal-Wardha	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

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This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED (herein after referred to as the "**Concessionaire**") had augmented the existing two lanes road "Yavatmal Wardha section of NH361 in the State of Maharastra, in accordance with the provisions of the Concession Agreement executed with National Highways Authority of India (herein after referred to as the "Authority") on 9th June, 2017 on Design, Build, Operate and Transfer (DBOT) on Hybrid Annuity Mode (HAM).

The Project Highway starts at Km. 400+575 (Near Yavatmal) and ends at Km. 465+500 (Near Wardha) on NH 361. It passes through settlements namely kamatwada, Galamgaon, Sirpur, Bhidi and Selsura. Project location map is provided at Figure 1.1.

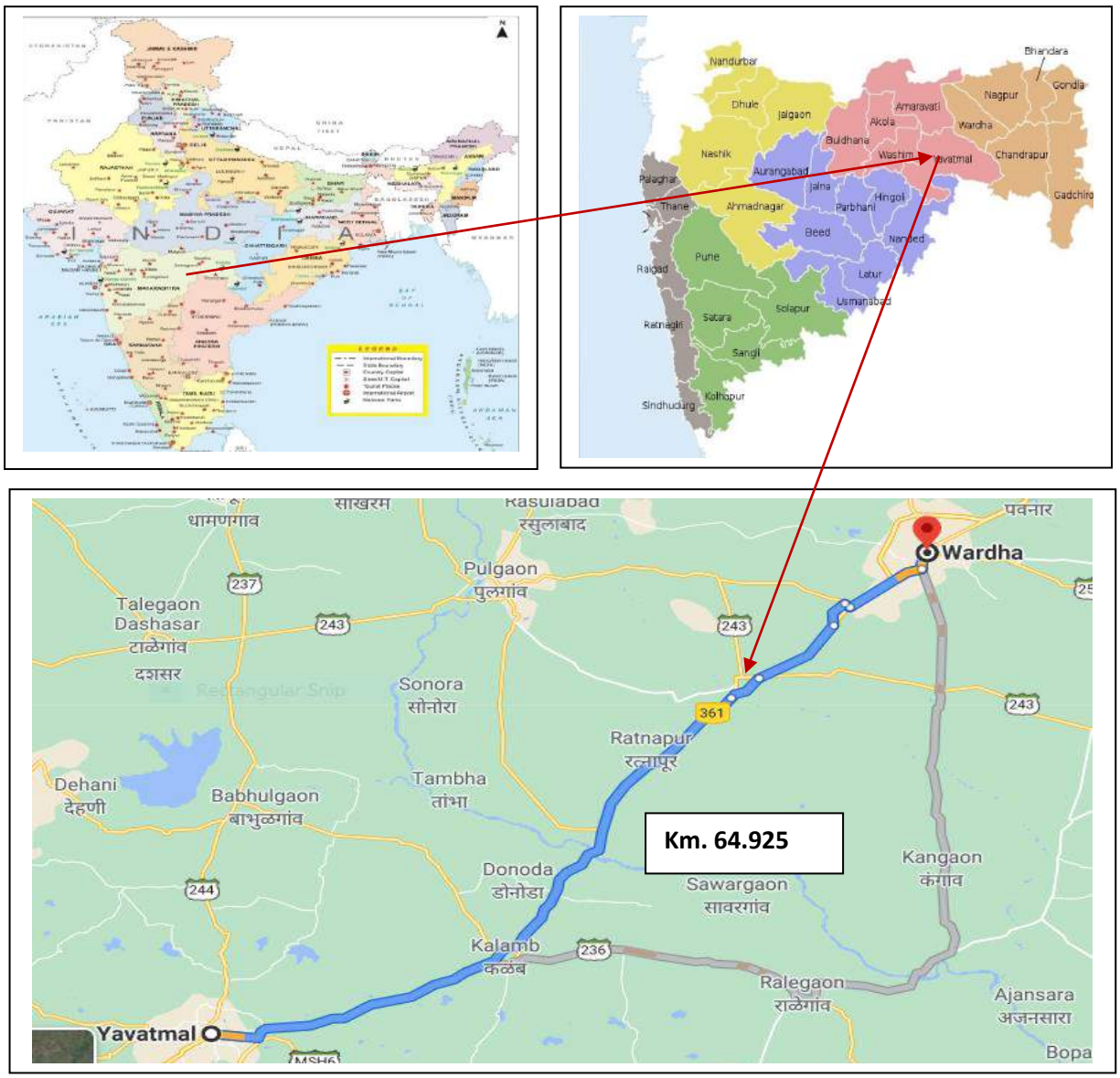

Figure 1-1: Project Location Map

SHREM INFRAVENTURE PRIVATE LIMITED (SRPL) acquired DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED vide agreement dated 26.03.2018

SHREM FINANCIAL PRIVATE LTD (SFPL) appointed RUKY PROJECTS PVT LTD as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

1.2 The Project Data

Table 1-1: Project Data

S No.	Particulars	Details
1	Name of the project	Four Laning of Yavatmal-Wardha Section of NH-361 From Km. 400+575 to Km.465.500 (Design Length Km. 64+925) in the State of Maharashtra on Hybrid Annuity Mode
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	28.03.2017
7	Date of Agreement	09.06.2017
8	Design Length as per Schedule B of CA	64.925 Km
9	Project Lane Configuration	Four Lane
10	Bid Project Cost	1046.28Cr
11	EPC Cost	756.17 Cr
12	Nature of contract	Hybrid Annuity Mode
13	Toll collected by	The Authority
14	Concession Period	15 years from the Commercial Operation Date (**COD**)
15	Appointed date	05.02.2018
16	Concession End Date	01.08.2034
17	Construction Period	910 days from the Appointed Date
18	Schedule Completion Date	02.08.2020
19	Bonus on early completion	Applicable as per Cl.23.5 of CA
20	Date of issuance of Provisional Certificate (COD)	02.08.2019
21	Date of issuance of Completion Certificate	---
22	Annuity Amount (every six months)	As per Cl.23.4 & Cl.23.6.3 of CA
23	Total Number of Annuities payable	30 Nos.
24	First Annuity Payment Date	02.02.2020
25	Total Number of Annuity Payments received as on date.	2 No.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table 2-1.

Table 2-1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of the Project Highway	64.925 Kms.	---	64.925 Kms.
2	Widening	47.115 Kms.	---	47.115 Kms.
3	New Alignmnet including bypass	6.995 Kms.	---	6.995 Kms.
4	Approaches to undepasses	10.815 Kms.	---	10.815 Kms.
5	No of Bypass Roads	2 Nos.	---	2 Nos.
6	Service Roads with 7.5 m Width	9.490 Kms.	---	9.490 Kms.
7	Slip Roads with 5.5 m Width	13.470 Kms.	---	13.470 Kms.
8	Toll Plaza	1 No.	---	1 No.
9	Bus Bays / Bus Shelters	32 Nos.	---	32 Nos.
10	Truck Lay Bays	1 No.	---	1 No.
11	Rest Area	1 No.	---	1 No.
12	Major Junction	3 Nos.	---	3 Nos.
13	Minor Junctions	26 Nos.	---	26 Nos.
14	Vehicle Underpass	3 Nos.	---	3 Nos.
15	Light Vehicle Underpass	6 Nos.	---	6 Nos.
16	Pedestrian Underpass	2 Nos.	---	2 Nos.
17	Cattle Underpass	1 No.	---	1 No.
18	Vehicle Overpass	1 No. with 4 Lane Width	Reduced to 2 Lane width	1 No. with 2 Lane Width
19	Flyover	2 Nos.	---	2 Nos.
20	Major Bridges	3 Nos.	---	3 Nos.
21	Minor Bridges for Main Carriageway	30 Nos.	---	30 Nos.
22	Box/Slab Culverts	31 Nos.	+1 No.	32 No.
23	Pipe Culverts	83 Nos.	---	83 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

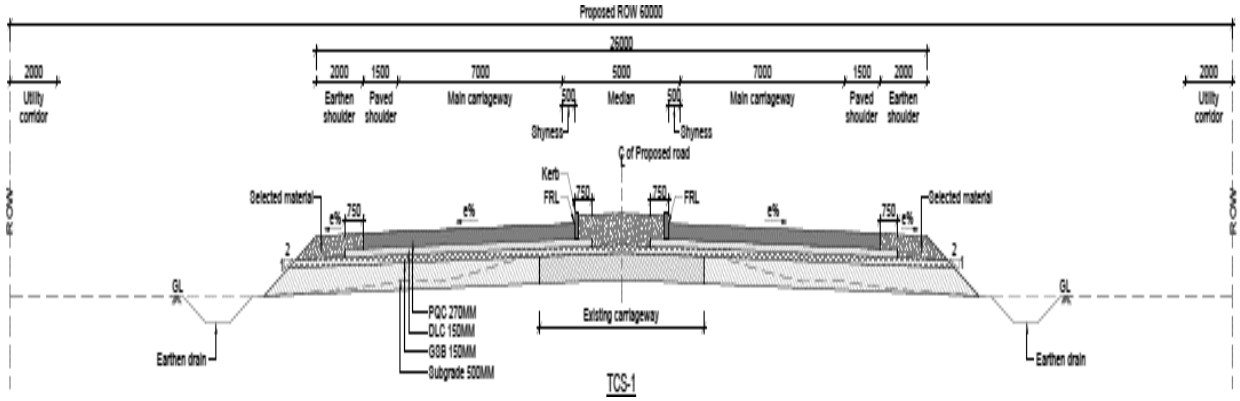

Figure 2-1: (TCS-1) 4-Laning By Concentric Widening With 4.0m Raised Median

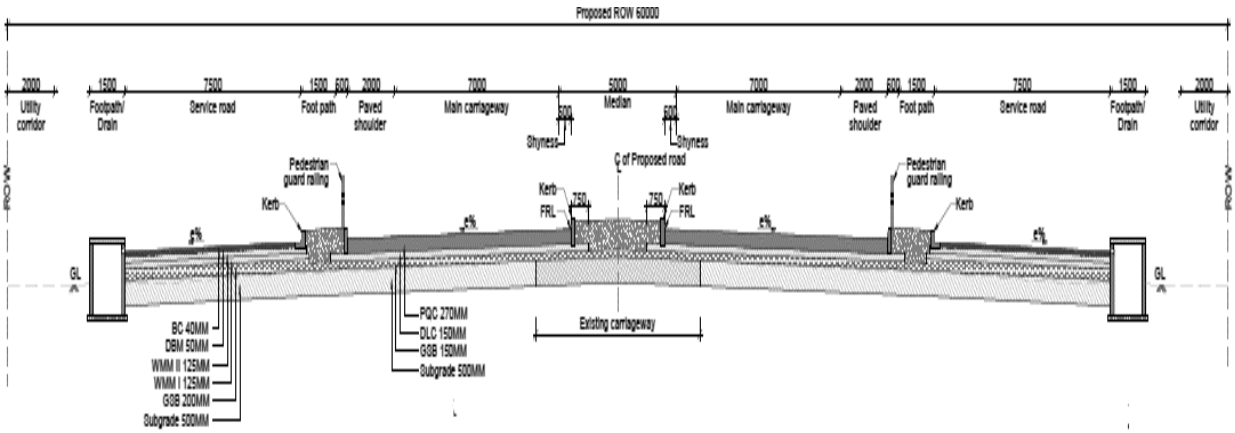

Figure 2-2: (TCS-2) Built-Up Section-Plain /Rolling Terrain With Service Roads

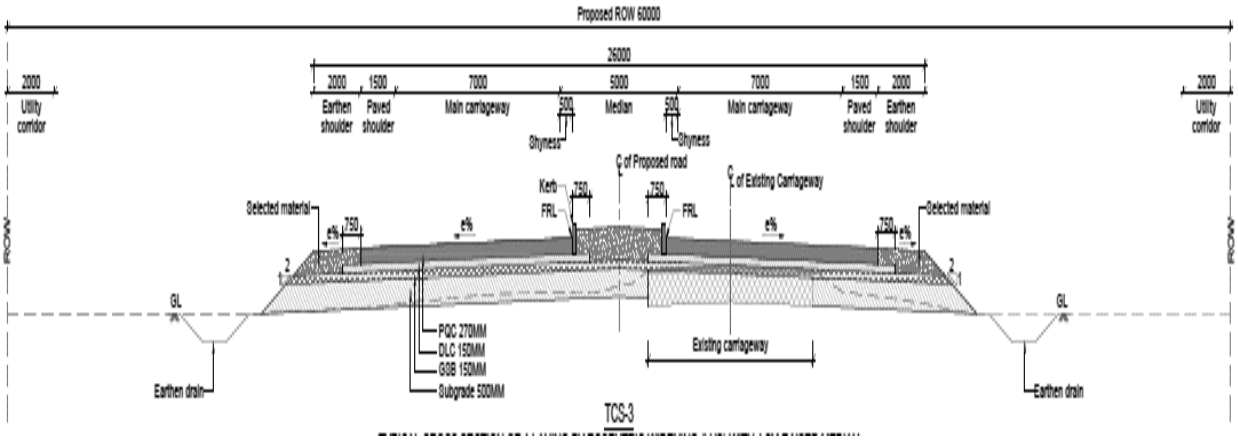

Figure 2-3: (TCS-3) 4-Laning By Eccentric Widening (LHS) With 4.0m Raised Median

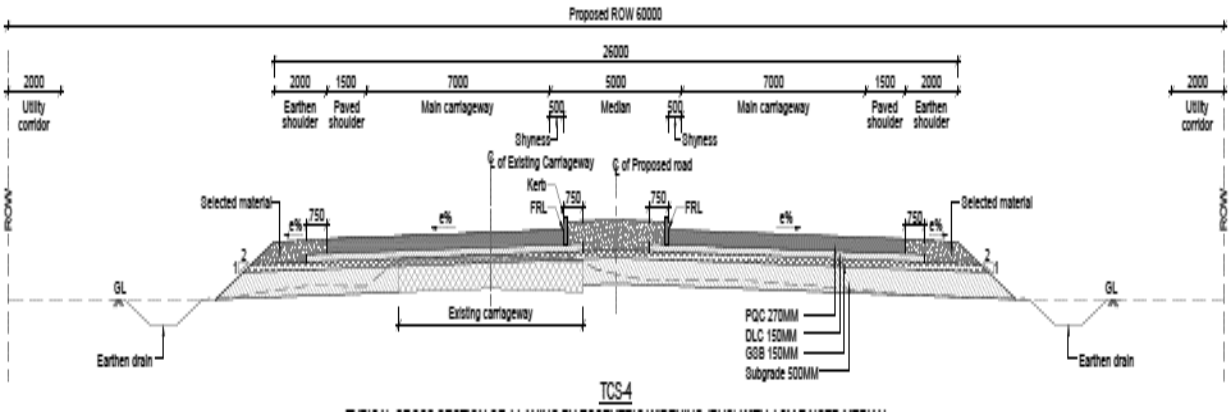

Figure 2-4: (TCS-4) 4-Laning By Eccentric Widening (RHS) With 4.0m Raised Median

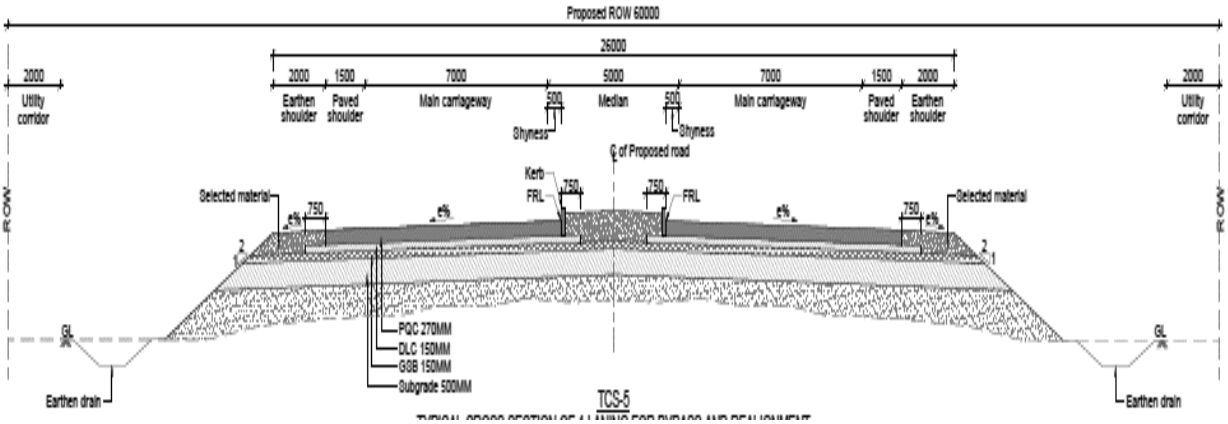

Figure 2-5: (TCS-5) 4-Laning For Bypass and Realignment

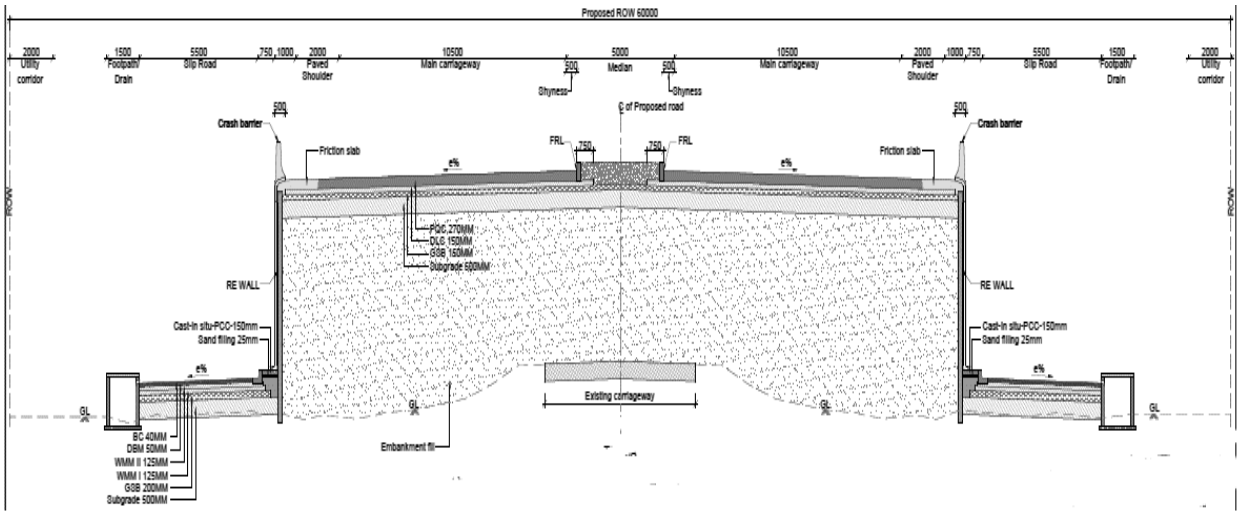

Figure 2-6: (TCS-6A) 4 Lane Underpass Cross Section With Slip Roads In The Existing Road

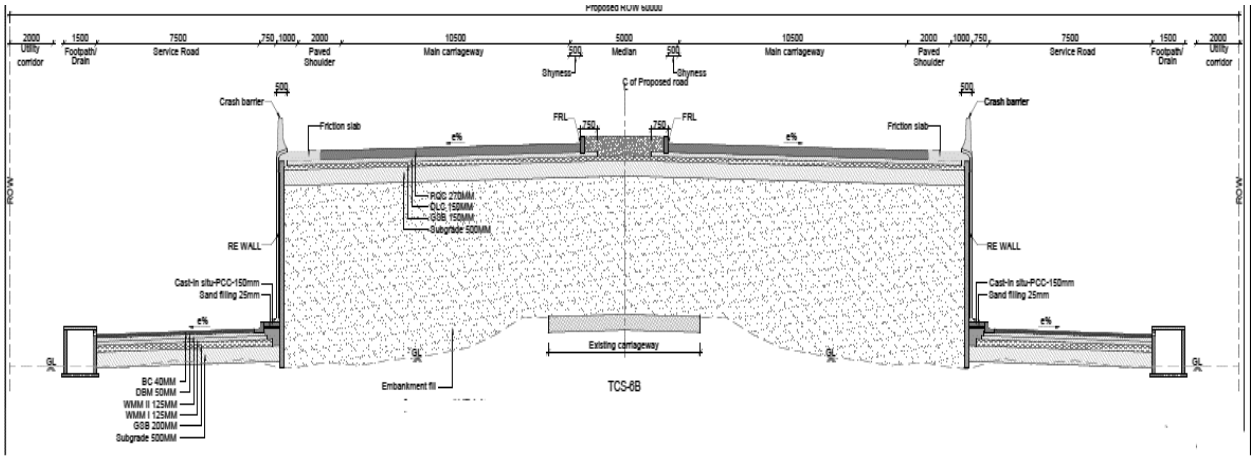

Figure 2-7: (TCS-6B) 4 Lane Underpass Cross Section With Service Roads In The Existing Road

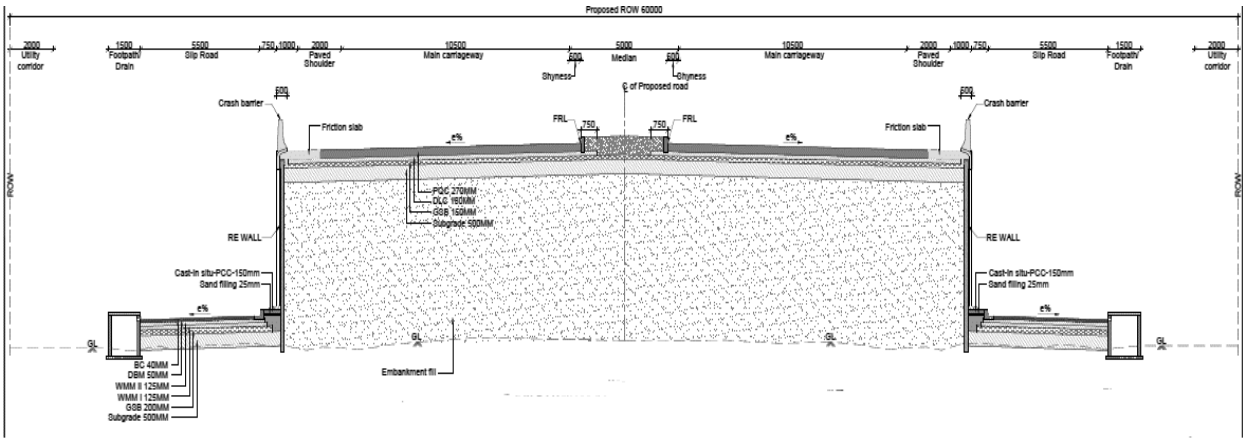

Figure 2-8: (TCS-6C) 4 Lane Underpass Cross Section With Slip Roads In Bypass & Realignment

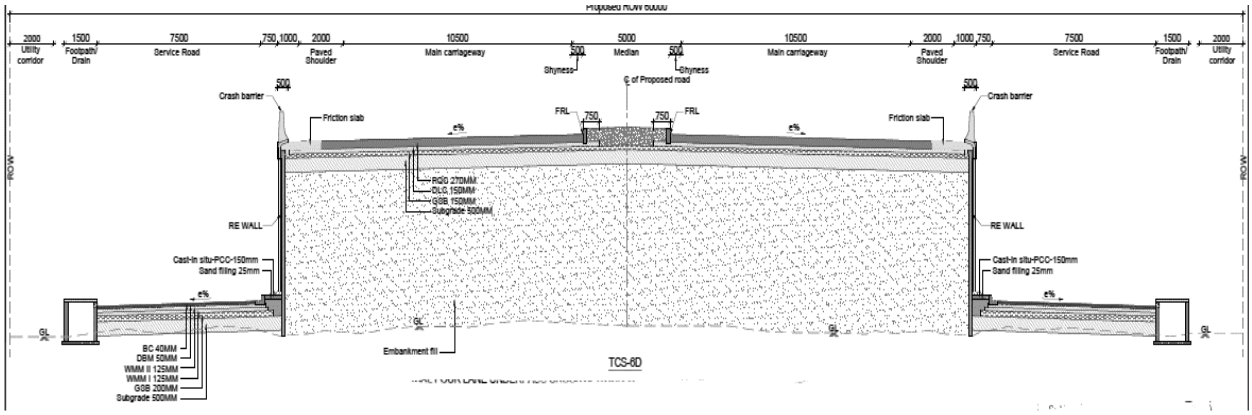

Figure 2-9: (TCS-6D) 4 Lane Underpass Cross Section With Service Roads In Bypass & Realignment

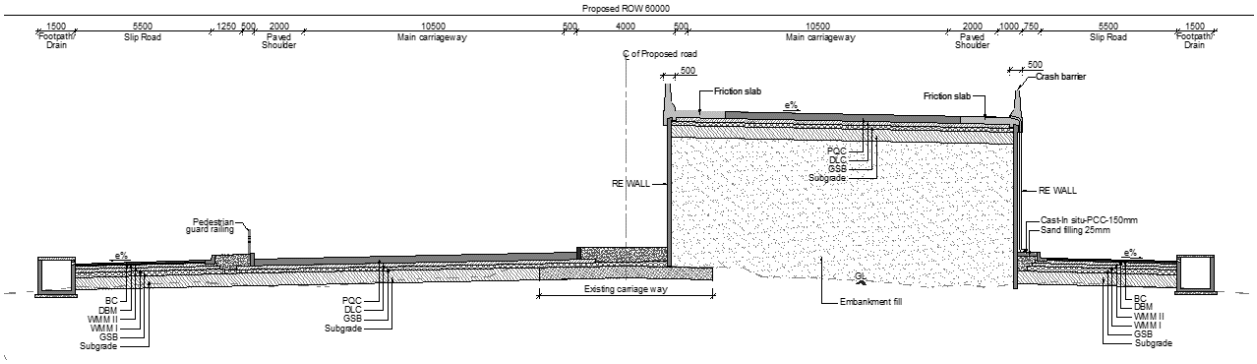

Figure 2-10: (TCS-6E) 4-Laning Unidirectional Vup With Slip Roads

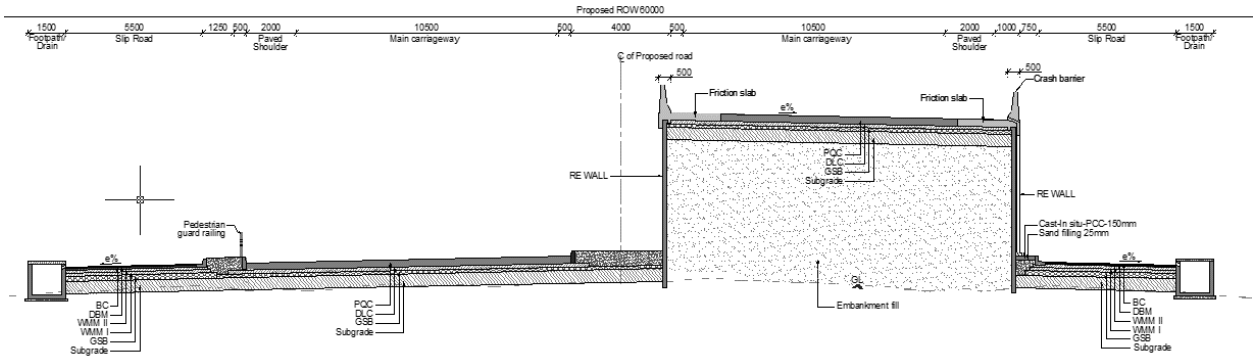

Figure 2-11: (TCS-6F) 4-Laning Unidirectional Vup With Slip Roads At Bypass & Realignment

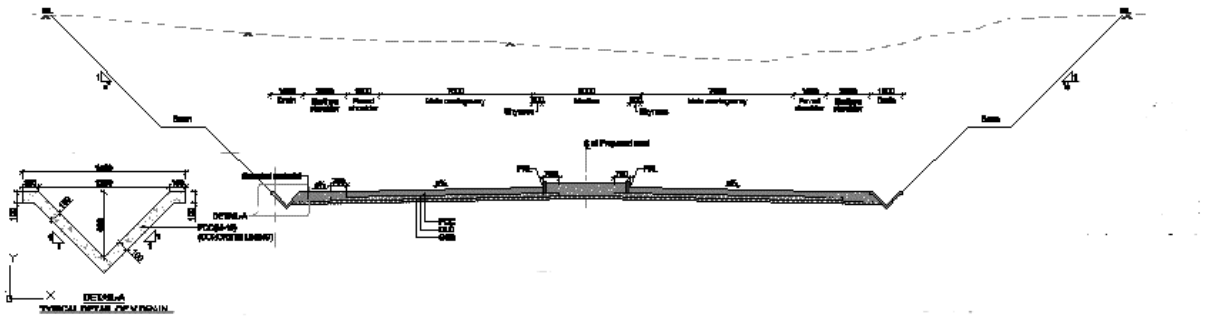

Figure 2-12: TCS-7 4-Lane Carriage Way (Both Side Cutting)

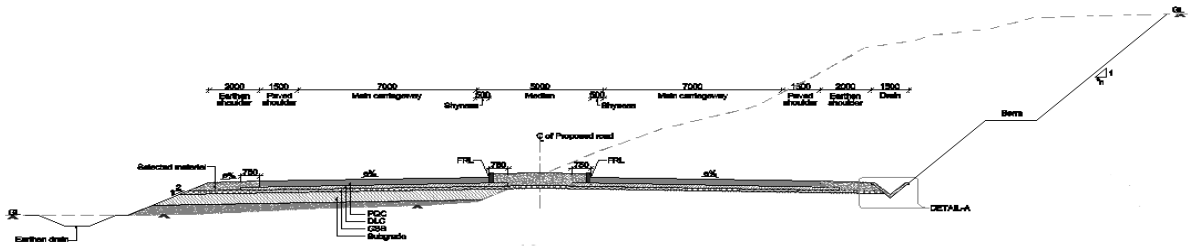

Figure 2-13: TCS-7A 4-Lane Carriage Way(Right Side Cutting)

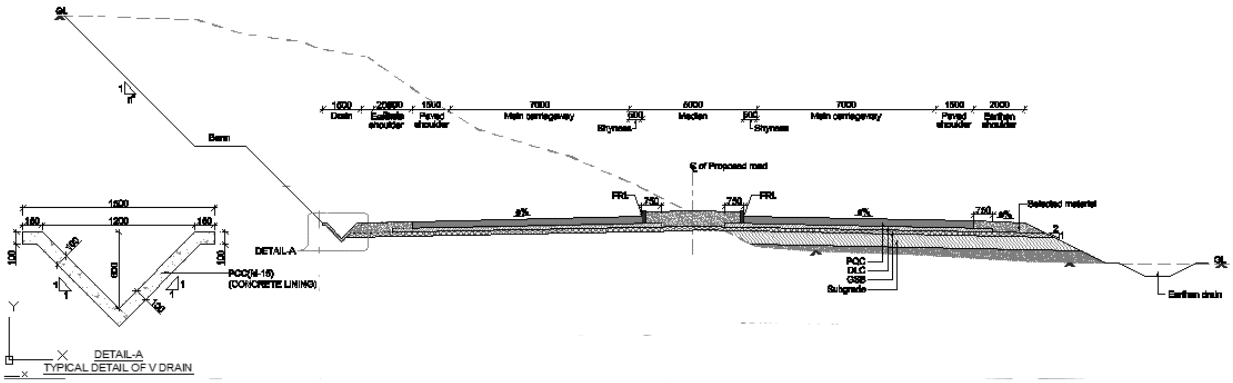

Figure 2-14: TCS-7B 4-Lane Carriage Way(Left Side Cutting)

TCS Schedule is provided below.

Table 2-2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Length (m)	TCS TYPE
1	400+575	400+630	55	2
2	400+630	400+700	70	1
3	400+700	400+830	130	5
4	400+830	401+000	170	1
5	401+000	401+150	150	4
6	401+150	401+250	100	7B
7	401+250	401+630	380	7
8	401+630	402+050	420	7B
9	402+050	402+200	150	3
10	402+200	402+370	170	7B
11	402+370	403+110	740	7
12	403+110	403+170	60	7A
13	403+170	403+930	760	4
14	403+930	404+300	370	7
15	404+300	404+500	200	7A
16	404+500	404+690	190	7
17	404+690	406+330	1640	4

S. No.	From (Km.)	To (Km.)	Length (m)	TCS TYPE
18	406+330	406+390	60	7A
19	406+390	406+470	80	7
20	406+470	406+600	130	7A
21	406+600	407+500	900	7
22	407+500	407+700	200	5
23	407+700	408+200	500	4
24	408+200	408+400	200	7
25	408+400	409+050	650	3
26	409+050	409+250	200	7B
27	409+250	409+450	200	3
28	409+450	409+600	150	1
29	409+600	410+210	610	2
30	410+210	410+460	250	1
31	410+460	410+920	460	5
32	410+920	412+400	1480	1
33	412+400	412+600	200	3
34	412+600	413+800	1200	4
35	413+800	413+950	150	3
36	413+950	414+800	850	4
37	414+800	415+650	850	3
38	415+650	415+800	150	1
39	415+800	416+190	390	5
41	416+190	416+470	280	7
42	416+470	416+540	70	7B
43	416+540	416+600	60	5
44	416+600	416+870	270	7
45	416+870	416+900	30	7A
46	416+900	417+450	550	5
47	417+450	417+600	150	1
48	417+600	417+700	100	3
49	417+700	417+770	70	7
50	417+770	417+950	180	3
51	417+950	418+100	150	4
52	418+100	419+130	1030	3
53	419+130	419+350	220	7
54	419+350	420+000	650	4
55	420+000	420+230	230	3
56	420+230	420+330	100	7B
57	420+330	420+750	420	3
58	420+750	420+950	200	7B
59	420+950	421+300	350	3
60	421+300	421+500	200	4

S. No.	From (Km.)	To (Km.)	Length (m)	TCS TYPE
61	421+500	421+610	110	3
62	421+610	421+850	240	7A
63	421+850	421+950	100	4
64	421+950	422+100	150	1
65	422+100	423+450	1350	4
66	423+450	423+700	250	1
67	423+700	423+900	200	4
68	423+900	424+400	500	5
69	424+400	424+550	150	4
70	424+550	424+800	250	1
71	424+800	424+950	150	3
72	424+950	425+760	810	4
73	425+760	426+850	1090	3
74	426+850	427+350	500	4
75	427+350	427+800	450	1
76	427+800	427+870	70	6A
77	427+870	428+650	780	6C
79	428+650	429+950	1300	5
80	429+950	430+550	600	6F
81	430+550	430+750	200	6E
82	430+750	431+000	250	4
83	431+000	431+250	250	3
84	431+250	431+850	600	4
85	431+850	433+500	1650	3
86	433+500	433+700	200	6B
87	433+700	434+140	440	6D
88	434+140	434+650	510	4
89	434+650	434+760	110	3
90	434+760	435+560	800	6A
91	435+560	436+150	590	3
92	436+150	436+400	250	4
93	436+400	436+600	200	3
94	436+600	438+350	1750	4
95	438+350	438+580	230	6D
96	438+580	439+160	580	6B
97	439+160	439+290	130	6D
98	439+290	439+450	160	3
99	439+450	440+300	850	4
100	440+300	441+000	700	6B
101	441+000	441+590	590	1
102	441+590	442+450	860	6A
103	442+450	444+150	1700	4

S. No.	From (Km.)	To (Km.)	Length (m)	TCS TYPE
104	444+150	444+500	350	3
105	444+500	444+680	180	4
106	444+680	445+140	460	5
107	445+140	445+640	500	3
108	445+640	446+620	980	6B
109	446+620	448+000	1380	4
110	448+000	448+300	300	3
111	448+300	449+250	950	4
112	449+250	449+930	680	6A
113	449+930	454+700	4770	4
114	454+700	455+350	650	3
115	455+350	455+900	550	4
116	455+900	456+340	440	3
118	456+340	456+390	50	6A
119	456+390	457+060	670	6C
120	457+060	457+640	580	5
121	457+640	458+900	1260	6C
122	458+900	459+665	765	6A
123	459+665	461+900	2235	3
124	461+900	462+550	650	6B
125	462+550	462+720	170	6D
126	462+720	465+100	2380	3
127	465+100	465+300	200	1
128	465+300	465+500	200	4

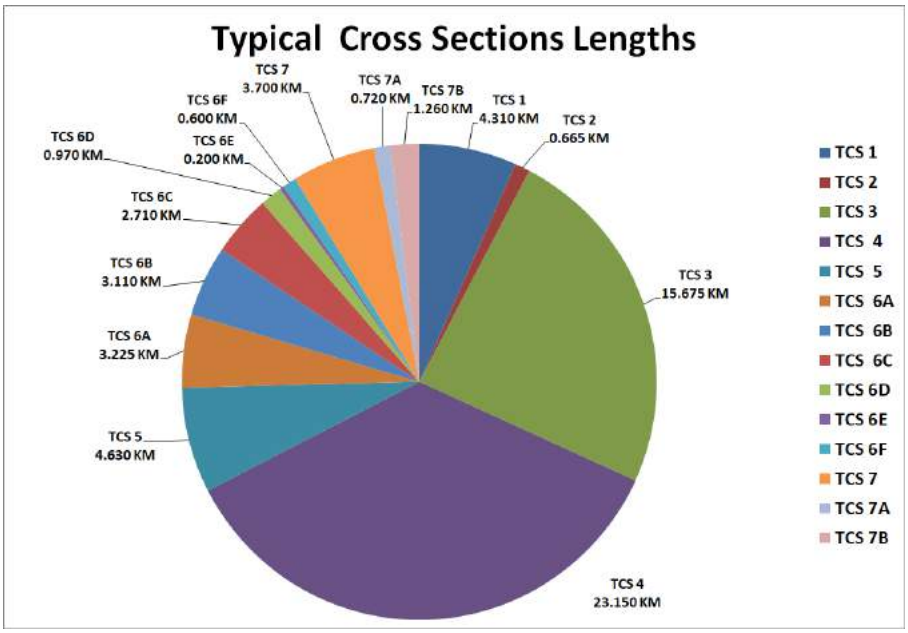

Figure 2-15: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.

The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are constructed in open and rural areas.

2.4 Service Roads

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the Concession Agreement. The details are provided below.

Table 2-3: List of Service Road locations

S. No.	Design Chainage		Length (m)	Carriageway Width (m)
	From (Km.)	To (Km.)		
1	400+575	400+630	55	7.5
2	409+860	410+470	610	7.5
3	433+220	433+860	640	7.5
4	438+400	439+340	940	7.5
5	440+300	441+000	700	7.5
6	445+600	446+580	980	7.5
7	461+900	462+720	820	7.5
	Total length		**4745**	

Table 2-4: List of Slip Road locations

S. No.	Design Chainage		Length (m)	Carriageway width(m)
	From (Km.)	To (Km.)		
1	427+800	428+650	850	5.5
2	429+860	430+660	800	5.5
3	434+800	435+600	800	5.5
4	441+640	442+500	860	5.5
5	449+300	449+980	680	5.5
6	456+340	457+060	720	5.5
7	457+725	459+750	2025	5.5
	Total Length		**6735**	

2.5 Bypass/Realignment

As per the provisions of Schedule B of the Concession Agreement Realignment is provided at the following locations.

Table 2-5: Realignment stretches

S. No.	Design Chainage		Length (m)
	From (Km.)	From (Km.)	
1	400+710	400+830	120
2	401+820	402+030	210

S. No.	Design Chainage		Length (m)
	From (Km.)	From (Km.)	
3	406+990	407+770	780
4	410+47	410+930	460
5	415+860	417+170	1310
6	419+260	419+500	240
7	421+540	421+770	230
8	423+940	424+590	650
9	433+750	434+300	550
10	438+420	438+630	210
11	439+210	439+480	270
12	444+740	445+180	440
13	462+550	462+820	270
	Total Length		5740

2.6 Intersections

Tentative locations of 3 Major junctions and 26 Minor junctions are provided in Schedule B of the Concession Agreement. However, one Major Jn. At Km. 405+400 was not developed due to site condition. Details are given below.

Table 2-6: List of Major Junctions

S. No.	Design Chainage (Km.)	Type of Junction	Remarks
1	405+400	+Junction	Not Developed
2	410+700	T-Junction	
3	427+800	T-Junction	

Table 2-7: List of Minor Junctions

S. No.	Design Chainage (Km.)	Type of Junction	Side	Remarks
1	400+600	Y-Junction	To Korisin Pump	
2	400+730	Y-Junction	To Banzara city	
3	407+640	T-Junction	To Chapdoh	
4	407+650	X-Junction	To Jam	
			To Yavatmal	
5	408+280	T-Junction	To Village	
6	413+800	T-Junction	To B T Road	
7	414+190	T-Junction	To Factory	
8	415+000	X-Junction	To Jawahar Nagar	
			To Pannerkavla	
9	420+880	Y-Junction	To Belona village	
10	422+440	X-Junction	To Medhala	
			To Chaprada	
11	424+660	T-Junction	To Goti	

S. No.	Design Chainage (Km.)	Type of Junction	Side	Remarks
12	433+800	X-Junction	To Netaji Village	
			To Singunapur	
13	435+128	+ Junction	Kutala	
			Songam	
14	437+000	Y-Junction	To Gangadevi Billage	
15	437+100	Y-Junction	To Mankapur	
16	438+060	Y-Junction	To Hirapur	
17	439+300	Y-Junction	To Sathepal	
18	400+675	+ Junction	To Agricultural land	
			To Bopapur	
19	440+900	T-Junction	To Sirpur village	
20	443+500	X-Junction	To Kolhapur Village	
			To Malapur	
21	446+000	T-Junction	To Bhidi	
22	446+400	T-JUnction	To Bidhi village	
23	446+880	Y-Junction	To Fathepur	
24	451+715	X-Junction		
			To BT Road	
25	454+280	Y- Junction	To Isapur	
26	456+000	Y-Jucntion	To Andelgao	

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the Concession Agreement 2nos. of Pedestrian Underpass, 1 cattle underpass, 6 nos. of Light Vehicular Underpass, 1No. Over Pass with four lane width, 2 flyovers and 3 nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Pavement Details

Summary of Pavement Details is given below:

Table 2-8: Summary of Pavement Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)
1	2 Lane with Earthen shoulder	---	---
2	2 Lane with Paved shoulder	---	---
3	4 Lane Rigid Pavement	---	64.925
4	Total Length of the Project	---	64.925

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)
TYPE OF ALIGNMENT			
5	Widening	---	47.115
6	Realignment	---	6.995
7	Flyover approaches	---	10.815
8	Total Length of the Project	---	64.925

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2-9: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Pipe Culverts	Box/Slab Culverts
1	Retained				
2	Widening	3	16	20	7
3	Reconstruction		7	26	15
4	New		7	37	9
5	Improvement				
	Total	**3**	**30**	**83**	**31**

2.11 Toll Plazas

One toll Plaza is provided on the project road at Km. 443+180, which comprises of 8 lanes.

- The width of each toll lane is provided 3.2 m, except for the lane for over dimensional vehicles, where it is 4.5 m.
- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 7 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in the Detailed Report.

Figure 2-16: Toll Plaza at Km. 443+000

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of CA, Bus shelters are provided at 32 locations. Details are provided below.

Table 2-10: List of Bus bays/Bus shelters

S. No.	Design Chainage (Km.)	Side
1	405.100	LHS
2	405.650	RHS
3	409.600	LHS
4	410.200	RHS
5	414.850	LHS
6	415.150	RHS
7	422.300	LHS
8	422.700	RHS
9	424.550	LHS
10	424.800	RHS
11	427.550	RHS
12	427.600	LHS
13	428.900	LHS
14	429.950	RHS
15	433.400	LHS
16	433.600	RHS
17	434.950	LHS
18	435.250	RHS
19	438.850	LHS
20	438.900	RHS
21	440.800	RHS
22	440.820	LHS
23	446.150	LHS
24	446.200	RHS
25	449.500	RHS

S. No.	Design Chainage (Km.)	Side
26	449.520	LHS
27	454.350	RHS
28	454.400	LHS
29	458.000	LHS
30	458.100	RHS
31	462.100	RHS
32	462.650	LHS

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following Table 3-1. Few representative photographs are presented below.

Table 3-1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	64.925 Kms.
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	28 Nos.
6	Toll Plazas	At Km. 443+180
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	32 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

Km.430+200

Km.416+700

Figure 3-1: Existing Road Features

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on visual observations. The criteria adopted for the classification of condition of the pavement is as per of IRC 83-2018.

Table 3-2: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
400+575	465+500	64.925	Good

Km.434+800

Km.435+100

Figure 3-2: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 03 Nos Major Bridge, 30 Nos Minor Bridges, 13 Nos Underpasses,02 Nos Flyovers, 76 Nos Pipe culverts and 39 Nos Slab/ Box culverts are there along this project road.

Table 4-1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	03
2	Minor Bridge	30
3	Underpasses	12
4	Flyovers	02
5	Pipe culverts	83
6	Slab/Box Culverts	32
7	Vehicle Overpasses 2-Lane width	1

For Major bridges, Superstructure is of RCC/PSC Girder/Solid slab resting on RCC wall type piers and abutments with open foundation. For Minor bridges, the Superstructure is of RCC solid slab/RCC Girder and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 1.** The culverts observed along the project road are mainly of two types Viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.3 Details of Major Bridges

The total length of the major bridge at Km. 439+813 is 270.0m with 8 spans. The superstructure consists of PSC/RCC Girder. Each Pier and Abutment has regular RCC wall/circular type. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the major bridge at Km. 456+162 is 80.0m with 5 spans. The superstructure consists of RCC Girder/RCC solid slab. Each Pier and Abutment is regular RCC wall type. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC Crash barrier have been provided on both sides of the deck.

The total length of the Major bridge at Km 462+906 is 100.0m with 5 spans. The superstructure consists of RCC Girder/RCC solid slab. Each Pier and Abutment has regular RCC wall/circular type. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

Table 4-2: List of Major Bridge

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	439+813	7 x 36.00 + 1 x 18.00	270.0
2	456+162	3 x 20.00 + 2 x 10.00	80.0
3	462+906	5x20.0	100.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, Clearance of drainage spouts are to be carried out.

Figure 4-1: Overall view of the Major Bridge at Km. 438+813

4.4 Details of Minor Bridges

There are 30 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab, RCC Box type & RCC Girder type and the substructure is PCC/RCC conventional wall/circular type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided for most of the structures.

Table 4-3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
1	402+112	1 x 19.21	19.21	Minor Bridge Consists of RCC Girder structure. Other feature includes RCC Railing/crash barrier, bituminous wearing coat, Strip seal expansion joints.

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
2	404+995	1 x 9.20	9.2	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
3	405+519	2x 5.50	11	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
4	408+564	1 x 6.80	6.8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
5	417+884	2 x 5.25	10.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
6	419+702	3 x 6.90	20.7	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
7	420+998	4 x 7.70	30.8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
8	424+213	2 x 8.00	16	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
9	429+371	4 x 11.625	46.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
10	433+858	2 x 13.0	26	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
11	436+290	4x8.2	32.8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
12	440+455	3x6.0	18	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
13	441+756	2 x 5.00	10	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
14	442+772	3x4.5	13.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
15	444+842	3 x 7.35	22.05	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
16	445+373	1 x 6.282+ 1 X 6.706 + 1x 6.282	19.27	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
17	447+790	1x6.0	6	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
				barrier/Railing, bituminous wearing coat.
18	448+124	1x10.0	10	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
19	449+776	3x4.45	13.35	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
20	450+824	1x20.7	20.7	Minor Bridge Consists of RCC Girder structure. Other feature includes RCC Railing/ crash barrier, bituminous wearing coat, Strip seal expansion joints.
21	454+011	1x9.5	9.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
22	455+220	2x4.5	9	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
23	455+971	1x8.0	8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
24	456+296	1x7.8	7.8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
25	456+747	2x6.50	13	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
26	457+521	1 x 5.85+ 1 X 5.80 + 1x 5.85	17.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
27	457+776	4 x 4.125	16.5	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
28	460+145	1x7.00	7	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
29	462+422	4x5.2	20.8	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.
30	463+126	1x6.2	6.2	Minor Bridge Consists of RCC Box structure. Other feature includes RCC crash barrier/Railing, bituminous wearing coat.

The condition of the superstructure and substructure of Minor Bridges is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, Clearance of drainage spouts, Vent clearance etc. are to be carried out.

Km.408+564	Km.408+564
Km.420+998	Km.420+998
Km.429+371	Km.429+371

Figure 4-2: Representative photos of Minor Bridges.

4.5 Details of Underpass

There are 12 Underpasses, 1 Vehicle Overpass and 2 Flyovers in the project stretch. The type of superstructure for underpass/Flyover is PSCI Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4-4: Inventory of Under pass/Vehicle Overpass/Flyovers

S. No.	Chainage (Km.)	Type of Structure	Span	Total Length of Bridge (m)	Description
1	428+123	Flyover	1 x 30.00	30	Structure consists of PSC I Girder type. Other feature includes RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
2	459+124	Flyover	2 x 41.80	83.6	Structure consists of PSC I Girder type. Other feature includes RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
3	409+966	VOP	1 x 30.00	30	Structure consists of PSC I Girder type. Other feature includes RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
4	430+298	VUP	1 x 12.00	12	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
5	441+979	VUP	1 x 12.00	12	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
6	458+16	VUP	1 x 12.00	12	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
7	435+064	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
8	440+607	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
9	446+337	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
10	449+572	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
11	456+599	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
12	462+241	LVUP	1 x 10.50	10.5	Structure consists of RCC Box structure. Other feature includes RCC

S. No.	Chainage (Km.)	Type of Structure	Span	Total Length of Bridge (m)	Description
					crash barrier, bituminous wearing coat.
13	433+78	PUP	1 x 7.00	7	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
14	438+675	PUP	1 x 7.00	7	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.
15	458+365	CUP	1 x 7.00	7	Structure consists of RCC Box structure. Other feature includes RCC crash barrier, bituminous wearing coat.

4.6 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found good. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.6.1. Slab/Box Culverts

There are 32Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4-5: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m)	Vent Size (m)
1	410+532	1 x 5.00	1.6
2	412+074	1 x 4.00	2.5
3	416+042	1 x 4.00	4.1
4	416+119	1 x 7.00	1.5
5	417+014	1 x 4.00	1.5
6	417+074	1 x 4.00	2.5
7	417+220	1 x 4.00	3.4
8	418+221	1 x 5.00	5
9	421+428	1 x 4.50	2.5
10	422+330	1 x 6.00	1.2
11	426+891	1 x 6.00	1.5
12	427+332	1 x 1.50	1.5
13	427+408	1 x 2.00	2.5
14	427+724	1 x 2.00	3.4
15	427+961	2 x 3.00	2.5
16	428+581	1 x 4.00	4.1
17	428+676	1 x 2.00	1.5
18	429+309	1 x 4.00	1.5

S. No.	Chainage (Km.)	Span (m)	Vent Size (m)
19	429+609	1 x 3.00	2.5
20	434+246	2 x 3.00	1.6
21	441+318	1 x 1.90	2.8
22	444+027	1 x 1.50	2.5
23	447+556	1 x 1.50	4.1
24	448+227	1 x 2.437	1.5
25	448+604	1 x 2.40	1.5
26	451+095	1 x 2.80	2.5
27	451+498	1 x 2.00	3.4
28	452+639	1 x 4.122	2.8
29	452+898	1 x 5.80	3.7
30	459+315	1 x 5.00	4.6
31	463+819	1 x 4.00	3.1
32	464+815	1 x 3.50	2.3

4.6.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.412+074

Km.416+042

Km.429+309

Km.417+074

Figure 4-3: Representative photos of Slab Culverts

4.6.3. General Description of the Pipe Culverts

There are 83 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4-6: List of Pipe Culverts

S. No.	Chainage (Km.)	No. of Rows X Dia (m.)	S. No.	Chainage (Km.)	No. of Rows X Dia (m.)
1	400+940	1 x 1.20	44	425+575	2 x 0.90
2	402+172	1 x 1.20	45	425+966	1 x 1.20
3	403+232	3 x 1.00	46	426+805	3 x 1.20
4	403+501	3 x 1.20	47	428+076	1 x 1.20
5	403+878	3 x 1.20	48	429+870	1 x 1.20
6	404+280	2 x 0.90	49	430+076	1 x 1.20
7	404+479	1 x 1.20	50	430+505	2 x 1.20
8	405+178	1 x 0.90	51	430+665	1 x 1.20
9	406+014	3 x 1.20	52	432+539	1 x 1.20
10	407+247	1 x 1.20	53	433+589	1 x 1.20
11	408+703	1 x 1.20	54	434+724	1 x 1.20
12	408+847	1 x 0.90	55	435+414	1 x 0.90
13	409+029	1 x 0.90	56	436+050	1 x 1.20
14	409+296	1 x 1.20	57	436+515	1 x 1.20
15	409+633	1 x 1.20	58	436+694	1 x 1.20
16	409+760	1 x 0.90	59	437+374	1 x 1.20
17	409+981	1 x 1.00	60	438+031	1 x 1.20
18	410+685	2 x 1.20	61	438+959	1 x 1.20
19	410+760	1 x 1.20	62	439+196	1 x 1.20
20	411+339	2 x 1.20	63	442+324	1 x 1.20
21	411+885	1 x 1.20	64	443+479	1 x 1.20
22	412+149	1 x 1.20	65	444+48	1 x 1.20
23	412+525	1 x 1.20	66	445+019	1 x 1.20
24	412+950	1 x 1.20	67	445+629	1 x 1.20
25	413+517	1 x 1.20	68	446+639	1 x 1.20
26	414+454	1 x 1.20	69	446+789	1 x 1.20
27	414+956	1 x 0.90	70	448+879	1 x 1.20
28	416+590	2 x 1.20	71	449+414	1 x 1.20
29	417+290	1 x 1.20	72	451+709	1 x 1.20
30	417+415	1 x 1.20	73	453+509	1 x 1.20
31	417+640	1 x 1.20	74	454+149	1 x 1.20
32	418+560	2 x 1.20	75	454+756	1 x 1.20
33	418+806	2 x 1.20	76	457+049	2 x 1.20
34	419+073	1 x 1.20	77	457+479	2 x 1.20

S. No.	Chainage (Km.)	No. of Rows X Dia (m.)
35	419+990	1 x 0.90
36	420+233	1 x 0.90
37	420+573	3 x 1.20
38	421+933	1 x 1.20
39	422+571	1 x 1.20
40	423+373	1 x 1.20
41	423+865	1 x 1.20
42	424+484	1 x 1.20
43	424+950	1 x 1.20

S. No.	Chainage (Km.)	No. of Rows X Dia (m.)
78	458+881	2 x 1.20
79	459+72	1 x 1.20
80	460+592	1 x 1.20
81	461+073	2 x 1.20
82	462+832	10 x 1.20
83	465+298	2 x 1.20

4.6.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.411+359

Km.413+517

Km.416+590

Km.416+590

Km.433+589

Figure 4-4: Representative photos of Pipe Culverts

The culverts are in good condition and can be retained in the present condition with following repairs/rehabilitation measures before on set of monsoon.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.
- Slope protection works to be repaired / provided.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, pavement condition and CA provisions.

5.2 Pavement design crust thickness

The Pavement Design shall be carried out in accordance with Indian Roads Congress guide lines. The pavement is designed in accordance with IRC: 58 -2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for highways", IRC: SP 84-2014, IRC: 15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5-1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	6 %
Two-way commercial traffic volume per day	1717
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	260
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	36
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	580

As per schedule D, (Annexure-I), clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl:5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements".

Table 5-2: Flexible Pavement for service road

S. No	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	9 %
2	Design Life (Years)	15 years for non-bituminous
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement– Next Proposed overlay on or before 2027
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special publication SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6-1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following Table 6-2.

Table 6-2: Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments& Bridge Approaches	Available as per site requirement	Good
4	Median kerb	Along the Project Highway	Provided as per IRC SP:84-2014	Good
5	Road studs & Solar Bilnkers	Along the Project Highway	Provided as per IRC SP:84-2014	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

The Concessionaire is maintaining the safety features in good condition from time to time in accordance with the provisions of Schedule K of the Concession Agreement.

Km.430+810

Km.441+600

Km.441+850

Figure 6-1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly necessary, during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plaza on the project road at Km. 443+180. The width of each toll lane is provided 3.2 m, except for the lane for over dimensional vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed in front of each island to safeguard Toll booth from crashing by Vehicles approaching out of control. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 7 Nos. toll booths are provided in toll plaza.

Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7-1: List of Equipment at Toll Plaza and Control Room

S. No.	Particulars	Quantity
1	Toll plaza Building	1
2	Toll Booths	7
3	Electrical Room	1
4	Generator Room	
5	Generators	1
6	ETC RFID Transverse near pay axis mounted on canopy	12
7	Electronic Enclosure	8
8	Lane Controller with industrial PC	8
9	AVC including sensor loop detector	10
10	Used fare display with mounting pole	10
11	Automatic Barrier Gate	8
12	Overhead Lane Status	10
13	Customized Industrial Grade Keyboard	8
14	Thermal receipt Printer	8
15	Barcode Reader with Stand	8
16	Violation light & alarm (on Existing Pole) and Foot switch in Booth	1
17	Booth CCTV camera with Voice Recording	10
18	Intercom slave Unit in booth	8
19	Medium speed weight in Motion	10

S. No.	Particulars	Quantity
	Control Room	
1.	Plaza Servers in Hot standby Configuration	1
2.	Static Weight Bridge	2
3.	Network Printer	1
4.	8 port Network switches (Layer 1)	12
5.	28 Port Network Switch (Layer 2)	2
6.	Internet router for Connection to the CCH	1
7.	UPS system as require for Complete Hybrid ETC Toll Plaza System	3
8.	55" LED Display for CCTV Monitoring	1
9.	Network Video Recorder (NVR) for CCTV recording	1
10.	CCTV Cameras for plaza building surveillance (server from, control room, Cash Up Room Admin)	5
11.	Intercom Master Unit in Control room-10 Channel (For<=8 Lanes)	1

7.3 Vehicles

Few vehicles are required for operation of the highway as per IRC and as per Contract document of the project. The list of vehicles provided at Toll Plaza is given below.

Table 7-2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	1 No
2	Ambulance	1 No.

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model in which Authority makes payment of 40% of the Bid Project cost during construction period based on progress milestones set forth in Concession Agreement. Payment of the balance 60% of the Bid Project Cost is made in form of bi-annual annuities with interest during the operational phase of concession.

8.2 Payment during Construction

As per the provisions of Article 23 of the Concession Agreement, 40% of the Bid Project Cost adjusted with Price Index in accordance with Clause 23.2.3 of the CA, shall be paid during the Construction Period. Amount payable during construction period shall be paid in five equal installments upon achieving the following payment Milestones.

Table 8-1: Schedule of Payment Milestones

S. No.	Payment Milestone No	Criteria for releasing the Payment
1	Milestone I	On Achievement of 10% of Physical Progress
2	Milestone II	On Achievement of 30% of Physical Progress
3	Milestone III	On Achievement of 50% of Physical Progress
4	Milestone IV	On Achievement of 75% of Physical Progress
5	Milestone V	On Achievement of 90% of Physical Progress

During the Operation Period, remaining 60% of the balance Completion Cost shall be paid in 30 Annuities each Annuity payable biannually. Each Annuity amount shall be based on the percentages of the balance Completion Cost mentioned in 23.6.3 of the Concession Agreement. During the Operation Period following payment components are payable.

- Annuity Payment as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- Interest on the balance amount to be paid at the rate equal to the applicable Bank Rate Plus 3%
- O&M Payment as a lump sum amount as per Clause 23.7.1 of the Concession Agreement.

8.3 Schedule of Annuity Payments

Details of Annuity payments Schedule are given below.

Table 8-2: Schedule of Annuity Payments

S. No.	Following the COD	Percentage of Completion Cost remaining	Annuity due Date	Annuity paid Date
1	Annuity No 1	2.10%	29.01.2020	20-Feb-20
2	Annuity No 2	2.17%	29.07.2020	17-Aug-20
3	Annuity No 3	2.24%	29.01.2021	
4	Annuity No 4	2.31%	29.07.2021	
5	Annuity No 5	2.38%	29.01.2022	
6	Annuity No 6	2.45%	29.07.2022	

S. No.	Following the COD	Percentage of Completion Cost remaining	Annuity due Date	Annuity paid Date
7	Annuity No 7	2.52%	29.01.2023	
8	Annuity No 8	2.60%	29.07.2023	
9	Annuity No 9	2.68%	29.01.2024	
10	Annuity No 10	2.76%	29.07.2024	
11	Annuity No 11	2.84%	29.01.2025	
12	Annuity No 12	2.93%	29.07.2025	
13	Annuity No 13	3.02%	29.01.2026	
14	Annuity No 14	3.11%	29.07.2026	
15	Annuity No 15	3.20%	29.01.2027	
16	Annuity No 16	3.30%	29.07.2027	
17	Annuity No 17	3.40%	29.01.2028	
18	Annuity No 18	3.50%	29.07.2028	
19	Annuity No 19	3.61%	29.01.2029	
20	Annuity No 20	3.72%	29.07.2029	
21	Annuity No 21	3.83%	29.01.2030	
22	Annuity No 22	3.94%	29.07.2030	
23	Annuity No 23	4.06%	29.01.2031	
24	Annuity No 24	4.18%	29.07.2031	
25	Annuity No 25	4.25%	29.01.2032	
26	Annuity No 26	4.25%	29.07.2032	
27	Annuity No 27	4.44%	29.01.2033	
28	Annuity No 28	4.71%	29.07.2033	
29	Annuity No 29	4.75%	29.01.2034	
30	Annuity No 30	4.75%	29.07.2034	

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Carrying out preventive and periodic maintenance of the Project road;
iii. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
iv. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
v. Functioning of the lighting system;
vi. Functioning of the Patrolling System

vii. Functioning of rescue and medical aid services
viii. Ambulance as and when required
ix. Functioning of the Project Facilities
x. Administrative, Operational and Maintenance Base Camp
xi. Truck Lay byes
xii. Pickup Bus stops / Bus Bays
xiii. protection of the environment and provision of equipment and materials therefore;
xiv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xv. complying with Safety Requirements in accordance with Article 18.

9.4 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.4.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.4.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.4.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and

demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9-1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute
2nd Periodic Maintenance	2033	Planned to execute

9.4.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.5 Review of Test Reports

9.5.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

Further it is to be noted that during O&M period, the permissible limit of the test given as 2750 mm/Km. in accordance with Schedule K(a)(ii). Based on the documents reviewed, it is noticed that no NCRs are issued pertinent to riding quality of Project Road.

9.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9-2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
	(In crores)	(In crores)			
2020	2.147	3.204		2.53	7.88
2021	2.211	3.300		2.61	8.12
2022	2.278	3.399		2.68	8.36
2023	2.346	3.501		2.77	8.61

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
	(In crores)	(In crores)			
2024	2.416	3.606		2.85	8.87
2025	2.489	3.715		2.93	9.14
2026	2.564	3.826		3.02	9.41
2027	2.640	3.941	26.58	3.11	36.27
2028	2.720	4.059		3.21	9.98
2029	2.801	4.181		3.30	10.28
2030	2.885	4.306		3.40	10.59
2031	2.972	4.435		3.50	10.91
2032	3.061	4.568		3.61	11.24
2033	3.153	4.705	31.92	3.72	43.49
2034	3.247	4.847		3.83	11.92
2035	1.127	1.682		1.33	4.14
Total	**41.057**	**61.276**	**58.5**	**48.40**	**209.23**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 4.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,

- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, confirms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA.
- A copy of PCOD is enclosed at **ANNEXURE 5**.

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the HAI are provided in **ANNEXURE 7**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.

- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the % of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

Increase in costs

If as a result of Change in Law, the Concessionaire suffers an increase in costs or reduction in net after-tax return or other financial burden, the aggregate financial effect of which exceeds the higher of Rs.2.20 Crore(Rupees two crore twenty lakhs) or 2%(two percent) of the total Annuity payments in any Accounting Year, the Concessionaire may so notify the Authority and propose amendment to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in increased costs, reduction in return or other financial burden as aforesaid. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (Thirty) days from the date of notice and either agree on amendments to this Agreement or on any other mutually agreed arrangement.

Reduction in costs

If as a result of Change in Law, the Concessionaire benefits from a reduction in costs or increase in net after-tax return or other financial gains, the aggregate financial effect of which exceeds the higher of Rs.2.20 crore(Rupee two crore twenty Lakhs) or 2% (Two percent) of the total Annuity Payment in any Accounting year, the Authority may so notify the Concessionaire and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in decreased costs, increase in return or other financial gains as aforesaid. Upon notice by the Authority, the parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on such amendments to this Agreement or on any other mutually agreed arrangement.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 26.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks. Copy of insurances are enclosed at **ANNEXURE 6.**

Table 11-1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001998	27.3.2020	26.3.2021	Roads & Structures
Electronic Equipment Insurance Policy	Oriental Insurance Company Ltd	171200/44/2021/43	17.9.2020	16.09.2021	Electronic equipment provided for Road and Bridges stretch connection from Yavatmal to Wardha
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Co Ltd	3114203384108600000	2.5.2020	1.5.2021	All Categories employees of DBL & Sub-Contractor engaged in DBL

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitate, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. Structural defects were not noticed. General condition of Culverts is good. Observed vegetation growth in vent ways of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

One Toll Plaza is constructed one at Km443+180. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP: 84-2014. The condition of sign boards &other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time-to-time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2027 and 2033.

12.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Condition of structures

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Crash barrier	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	402+112	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
2	404+995	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
3	405+519	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
4	408+564	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
5	417+884	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
6	419+702	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
7	420+998	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
8	424+213	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
9	429+371	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
10	433+858	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
11	436+290	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
12	439+813	Major bridge	Good	Good	Good	Good	-	Good	Good	-
13	440+455	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
14	441+756	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
15	442+772	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
16	444+842	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
17	445+373	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
18	447+790	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
19	448+124	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
20	449+776	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
21	450+824	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
22	454+011	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
23	455+22	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
24	455+971	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
25	456+162	Major bridge	Good	Good	Good	Good	-	Good	Good	-

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Crash barrier	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
26	456+296	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
27	456+747	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
28	457+521	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
29	457+776	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
30	460+145	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
31	462+422	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
32	462+906	Major bridge	Good	Good	Good	Good	-	Good	Good	-
33	463+126	Minor bridge	Good	Good	Good	Good	-	Good	Good	-
34	409+966	VOP	Good	Good	Good	Good	-	Good	Good	-
35	428+123	Flyover	Good	Good	Good	Good	-	Good	Good	-
36	430+298	VUP	Good	Good	Good	Good	-	Good	Good	-
37	433+78	PUP	Good	Good	Good	Good	-	Good	Good	-
38	435+064	LVUP	Good	Good	Good	Good	-	Good	Good	-
39	438+675	PUP	Good	Good	Good	Good	-	Good	Good	-
40	440+607	LVUP	Good	Good	Good	Good	-	Good	Good	-
41	441+979	VUP	Good	Good	Good	Good	-	Good	Good	-
42	446+337	LVUP	Good	Good	Good	Good	-	Good	Good	-
43	449+572	LVUP	Good	Good	Good	Good	-	Good	Good	-
44	456+599	LVUP	Good	Good	Good	Good	-	Good	Good	-
45	458+160	VUP	Good	Good	Good	Good	-	Good	Good	-
46	458+365	CUP	Good	Good	Good	Good	-	Good	Good	-
47	459+124	Flyover	Good	Good	Good	Good	-	Good	Good	-
48	462+241	LVUP	Good	Good	Good	Good	-	Good	Good	-

Annexure 2: Condition of Box/Slab/Hume Pipe Culverts

Condition of Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	400+940	Good	Good	Good	-
2	402+172	Good	Good	Good	-
3	403+232	Good	Good	Good	-
4	403+501	Good	Good	Good	-
5	403+878	Good	Good	Good	-
6	404+280	Good	Good	Good	-
7	404+479	Good	Good	Good	-
8	405+178	Good	Good	Good	-
9	406+014	Good	Good	Good	-
10	407+247	Good	Good	Good	Good
11	408+703	Good	Good	Good	Good
12	408+847	Good	Good	Good	-
13	409+029	Good	Good	Good	-
14	409+296	Good	Good	Good	Good
15	409+633	Good	Good	Good	Good
16	409+760	Good	Good	Good	Good
17	409+981	Good	Good	Good	Good
18	410+685	Good	Good	Good	Good
19	410+760	Good	Good	Good	Good
20	411+339	Good	Good	Good	Good
21	411+885	Good	Good	Good	Good
22	412+149	Good	Good	Good	Good
23	412+525	Good	Good	Good	Good
24	412+950	Good	Good	Good	Good
25	413+517	Good	Good	Good	Good
26	414+454	Good	Good	Good	Good
27	414+956	Good	Good	Good	Good
28	416+590	Good	Good	Good	-
29	417+290	Good	Good	Good	-
30	417+415	Good	Good	Good	Good
31	417+640	Good	Good	Good	-
32	418+560	Good	Good	Good	Good
33	418+806	Good	Good	Good	Good
34	419+073	Good	Good	Good	-
35	419+990	Good	Good	Good	-
36	420+233	Good	Good	Good	-
37	420+573	Good	Good	Good	Good
38	421+933	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
39	422+571	Good	Good	Good	Good
40	423+373	Good	Good	Good	-
41	423+865	Good	Good	Good	-
42	424+484	Good	Good	Good	-
43	424+950	Good	Good	Good	Good
44	425+575	Good	Good	Good	Good
45	425+966	Fair	Fair	Good	Good
46	426+805	Good	Good	Good	Good
47	428+076	Fair	Fair	Good	Good
48	429+870	Good	Good	Good	Good
49	430+076	Good	Good	Good	Good
50	430+505	Good	Good	Good	Good
51	430+665	Good	Good	Good	Good
52	432+539	Good	Good	Good	Good
53	433+589	Good	Good	Good	Good
54	434+724	Good	Good	Good	Good
55	435+414	Good	Good	Good	Good
56	436+050	Good	Good	Good	Good
57	436+515	Good	Good	Good	Good
58	436+694	Good	Good	Good	Good
59	437+374	Good	Good	Good	Good
60	438+031	Good	Good	Good	Good
61	438+959	Good	Good	Good	Good
62	439+196	Good	Good	Good	Good
63	442+324	Good	Good	Good	Good
64	443+479	Good	Good	Good	Good
65	444+480	Good	Good	Good	Good
66	445+019	Good	Good	Good	Good
67	445+629	Good	Good	Good	Good
68	446+639	Good	Good	Good	Good
69	446+789	Good	Good	Good	Good
70	448+879	Good	Good	Good	Good
71	449+414	Good	Good	Good	Good
72	451+709	Good	Good	Good	Good
73	453+509	Good	Good	Good	Good
74	454+149	Good	Good	Good	Good
75	454+756	Good	Good	Good	Good
76	457+049	Good	Good	Good	Good
77	457+479	Good	Good	Good	Good
78	458+881	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
79	459+720	Good	Good	Good	Good
80	460+592	Good	Good	Good	Good
81	461+073	Good	Good	Good	Good
82	462+832	Good	Good	Good	Good
83	465+298	Good	Good	Good	Good

Box /Slab Culverts

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	410+532	Good	Good	Good	Good	Good
2	412+074	Good	Good	Good	Good	Good
3	416+042	Good	Good	Good	Good	Good
4	416+119	Good	Good	Good	Good	Good
5	417+014	Good	Good	Good	Good	Good
6	417+074	Good	Good	Good	Good	Good
7	417+220	Good	Good	Good	Good	Good
8	418+221	Good	Good	Good	Good	Good
9	421+428	Good	Good	Good	Good	Good
10	422+330	Good	Good	Good	Good	Good
11	426+891	Good	Good	Good	Good	Good
12	427+332	Good	Good	Good	Good	Good
13	427+408	Good	Good	Good	Good	Good
14	427+724	Good	Good	Good	Good	Good
15	427+961	Good	Good	Good	Good	Good
16	428+581	Good	Good	Good	Good	Good
17	428+676	Good	Good	Good	Good	Good
18	429+309	Good	Good	Good	Good	Good
19	429+609	Good	Good	Good	Good	Good
20	434+246	Good	Good	Good	Good	Good
21	441+318	Good	Good	Good	Good	Good
22	444+027	Good	Good	Good	Good	Good
23	447+556	Good	Good	Good	Good	Good
24	448+227	Good	Good	Good	Good	Good
25	448+604	Good	Good	Good	Good	Good
26	451+095	Good	Good	Good	Good	Good
27	451+498	Good	Good	Good	Good	Good
28	452+639	Good	Good	Good	Good	Good
29	452+898	Good	Good	Good	Good	Good
30	459+315	Good	Good	Good	Good	Good
31	463+819	Good	Good	Good	Good	Good
32	464+815	Good	Good	Good	Good	Good

Annexure 3: Operation& Maintenance cost

Routine Maintenance cost for 1 year

Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
General Cleaning in Carriageway& Shoulders Rural area	Monthly	Km	60.18	12	4	350	10,11,024	04 nos of Labour
General Cleaning in Carriageway& Shoulders Urban area	Twice in a month	kms	4.745	24	4	350	1,59,432	04 nos of Labour
Watering in Median Plants	Once in Week	Km	64.925	52	1	1939	65,46,258	01 nos of Labour
Watering in Avenue plants	Once in Week	Km	60.18	52	60	1939	60,67,829	
Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	60.18	12	12	21000	2,52,000	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
ROW Cleaning	Half yearly	Km	45.4475	2	10	350	3,18,133	10 Nos of labour per KM (70% of the Project length)
Cleaning of Culverts	Half yearly	Nos	114	2	3	650	4,44,600	3 nos of Labour along with JCB or Excavator
Road Furniture Cleaning	Quarterly	Km	64.925	4	2	350	1,81,790	02 nos of Labour
Maintenance of Bus shelters	Monthly	Nos	32	12	2	350	2,68,800	2 nos/ Bus shelter/month
General Cleaning in Building & Facilities	Daily	Nos	4.00	12	60	350	10,08,000	02 nos of Labour for 30 days
Bridges	Half yearly	Nos	41	2	4	350	1,14,800	04 nos of Labour for removal of vegetation/Structure
Carriageway Maintenance (Pot Holes etc)	Yearly	Sq.m	15	1	574	124	10,67,640	2.5% of CW area considered 22.0x1000x2.5%
							1,74,40,305	

EQUIPMENT SUPPLY								
TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos		12	1	400000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Water Tanker Cap 12 KL for Median	Monthly	Nos	64.925	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Mechanical Sweeper	Monthly	Nos		12		500000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Grass cutter	Monthly	Nos	64.925	12	3	12000	38,955	(12000/year)
Manhoise/ Skyscrapper	Monthly	Nos		12		4,00,000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Bikes	Monthly	Nos	64.925	12	4	2500	1,29,850	Per Supervisor/Per Month
Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month
Toll plaza AMC	Yearly	Nos		12	1	100000	12,00,000	100000/month
							29,68,805	
Patrolling vehicle	Monthly	Nos	12		1	300000	300000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Ambulance	Monthly	Nos	12		1	240000	240000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1

								Ambulance/toll plaza)
Tow away trucks and Crane	Monthly	Nos	12		1	400000	400000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
							10,60,000	
							2,14,69,110.00	

Incidental cost for 1 Year									
	Item		**Unit**	**No**	**Frequency**	**Quantity**	**Rate**	**Amount**	**Remarks**
1	Road marking	Half yearly	Sqm	1	1	15566	516	80,32,056	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sq.m	1	1	186	168	31,248	2% of Flexible Pavement (changed quantities to only Service road portion)
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1947.75	225	13,14,731	10% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	4	88	4000	14,08,000	5 % of Total sign boards per half year (considered 1750 nos)
5	MBCB	Monthly	RMT			1250	2400	30,00,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	64.925	4	16	2250	1,44,000	5 % of total stones per year (unable to understand the

Incidental cost for 1 Year									
	Item		**Unit**	**No**	**Frequency**	**Quantity**	**Rate**	**Amount**	**Remarks**
									backup)
7	ROW Fencing (Ifavailable)	Quarterly	Km		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km	64.925	1	2597.0	250	6,49,250	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	1382.3	1	41	55000	22,55,000	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	3505.95	4000	1,40,23,800	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	Rmt	9897		297	3985	11,83,545	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**3,20,41,630**	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 96,00,000
2	Fuel for Generator & Vehicles	₹ 1,13,64,000
3	Electricity	₹ 26,40,000
4	Stationary	₹ 1,00,000
5	Replacement of Electrical Fixtures	₹ 10,03,340
6	Refurbishment of Toll Plaza Equipment	₹ 6,00,000
	Total Amount	**₹ 2,53,07,340**

Major Maintenance Summary

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	01-06-2019					
1st Major Maintenance - Highway	01-06-2026	20,23,31,078	7.00	3.0%	24,48,20,604	24.48
1st Major Maintenance - Structures	01-06-2026	1,73,28,751	7.00	3.0%	2,09,67,789	2.10
2nd Major Maintenance - Highways	01-06-2032	20,47,98,418	13.00	3.0%	28,46,69,801	28.47
2nd Major Maintenance - Structures	01-06-2032	2,48,31,802	13.00	3.0%	3,45,16,205	3.45
				Total	₹ 58,49,74,399	58.50

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Chapter 4. Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	1,60,720.00	14.00	22,50,080	1,60,720.00	14.00	22,50,080
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	6,428.80	7,682.00	4,93,86,042	6,428.80	7,682.00	4,93,86,042
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	1,55,821.60	250.00	3,89,55,400	1,55,821.60	250.00	3,89,55,400
4	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm	6,13,297.50	130.00	7,97,28,675	6,13,297.50	130.00	7,97,28,675
5	Earthern shoulder @ service roads	cum			11,48,000			11,48,000

S.	DESCRIPTION	Unit		RATE	AMOUNT		RATE	AMOUNT
			4,592.00	250.00		4,592.00	250.00	
	Total				**17,14,68,197**			**17,14,68,197**
	Chapter 9 Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		6,493.00	380.00	24,67,340
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	54,244.93	516.00	2,79,90,381	54,244.93	516.00	2,79,90,381
3	Road Studs	Nos	3,830.00	750.00	28,72,500	3,830.00	750.00	28,72,500
	Total Chapter 9			-	**3,08,62,881**		-	**3,33,30,221**
	Grand Total				**20,23,31,078**			**20,47,98,418**

Annexure 4: Letter of Award

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

NHAI/Tech/01/EFC/Yavat.-Wardha /2014/MAH/97371 **28th March 2017**

To,

M/s Dilip Buildcon Limited
Plot No. 5, inside Govind Narayan Singh Gate
Chuna Bhatti, Kolar Road
Bhopal – 462 016
Phone No.: 09300948396
Fax: 0755 4029998
Email: db@dilipbuildcon.co.in; dilipb_99@rediffmail.com

(Kind Attention: Mr. Kundan Kumar Das, AGM – Business Development)

Subject: Four laning of **Yavatmal to Wardha (PackageIII)** section of NH-361 from km 400.575 to km 465.500 (design Length 64.925 km) in the State of Maharashtra Under NHDP Phase – IV on Hybrid Annuity Mode **–Letter of Award – Reg.**

Ref: 1. Your Proposal submitted on 15.02.2017
2. Opening of Financial proposal on 22.03.2017

Sir,

With Reference to NHAI's Request for Proposal for "Four laning of **Yavatmal to Wardha (Package III)** section of NH-361 from km 400.575 to km 465.500 (design Length 64.925 km) in the State of Maharashtra Under NHDP Phase – IV on Hybrid Annuity Mode" and considering you proposal in this regard submitted on 15.02.2017 vide reference no. (i), NHAI hereby accepts your proposal quoting Bid Project Cost of **Rs. 1043.28 crore (Rupees One Thousands Forty Three Crore Twenty Eight Lakh Only)** and first year O&M cost of **Rs. 3.00 Crore (Rupees Three Crore Only)** as included in Appendix- 1B of your document and declares you as the "Selected Bidder" as per the provisions of RFP Documents.

2. In accordance with the clause 3.8.4 of the RFP document, you are requested to sign the duplicate copy of the LOA and return the same as your acknowledgement within 7 (Seven) days of the receipt of the LOA. Thereafter you are required to execute the concession Agreement within 45 (Forty five) days from the date of issue of LOA as specified in Clause 1.3 of RFP.

3. Further, As per RFP document, you are required to incorporate a Special Purpose Vehicle solely for the purpose of domiciling the project (the "Concessionaire"). The Concessionaire For due and faithful performance of its obligations during the Concession Period shall furnish a Performance Security by way of irrecoverable and unconditional Bank guarantee of **Rs 52.17 Crores (Rupees Fifty Two Crore Seventeen Lakh only)** within a period of the 30 days from the date of signing of the Concession Agreement. Till the time the Concessionaire provides NHAI with the performance Security the Bid Security shall remain in full Force and Effect (refer Clause 4.1.2 and Clause of Article 9 of RFP).

4. You are required to comply with all the terms and conditions set forth in the RFP Documents. In case of any default on your part, you shall be liable for action as stated in the Bid Documents.

Ashish

(Ashish Asati)
General Manager (Tech)
(Maharashtra Division)

Annexure 5: Provisional Certificate

LION ENGINEERING CONSULTANTS
"Contributing in Building the Infrastructure of the Nation"

Letter No. LION/IE-0317/2019/NHAI/Yavat-War/6806 **Date: 02.08.2019**

To,
The Authorized Signatory,
DBL Yavatmal Wardha Highways Limited,
Reg. Office: Plot No.5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal-462016 (MP).
Email- girishtalwar@dilipbuildcon.co.in

Sub : Four Laning of Yavatmal to Wardha (Package III) section of NH-361 From KM 400+575 to KM 465+500 (Design Length 64.925 Km) in the state of Maharashtra under NHDP Phase on Hybrid Annuity Mode.
Issuance of Provisional Completion Certificate under Clause 14.3 of Concession Agreement. Reg.

Ref:
1. Concession Agreement dtd: 09.06.2017.
2. Concessionaire Lr. No. DBL/YWHPL/IE/2019/462; dtd: 23.04.2019.
3. Concessionaire Lr. No. DBL/YWHPL/IE/2019/465; dtd: 02.05.2019.
4. Inspection of IE dated. 25.05.2019 & 14.06.2019.
5. IE letter no. LION/IE-0317/2019/NHAI/Yavat-War/6484; dtd: 14.06.2019.
6. Concessionaire Lr. No. DBL/YWHPL/IE/2019/501; dtd: 29.06.2019.
7. Inspection of IE dated 01.07.2019 & 02.07.2019.
8. IE letter no. LION/IE-0317/2018/NHAI/Yavat-War/6624; dtd:04.07.2019.
9. IE Inspection dtd: 08.07.2019 & 09.07.2019.
10. This office Lr. No. LION/IE-0317/2019/NHAI/Yavat-War/6655; dtd: 10.07.2019.
11. PD-Yavatmal Lr. No. NHAI/PIU/YTL/NH361/PCOD/2019/1470; dtd: 05.07.2019.
12. RO-Nagpur Lr. No. NHAI/RO-NAG/4/7/Yavatmal-Wardha/PCOD/2019/1132; dtd: 25.07.2019.
13. Concessionaire letter no. DBL/YWHPL/IE/2019/519; dtd: 29.07.2019

Dear Sir,

The Concession Agreement for the above project was signed between M/s DBL Yavatmal Wardha Highways Private Limited (hereinafter referred as "Concessionaire") and National Highways Authority of India (hereinafter referred as "Authority") on 09.06.2017 and the Appointed Date was declared as 05.02.2018.

2. As per clause 14.3.2 of the Concessionaire Agreement wherein mentioned "The *Parties hereto expressly agree that a Provisional Certificate under this clause 14.3 may, upon request of the Concessionaire to this effect, be issued for operating part of the Project, if the Concessionaire has completed construction of 100% of the Site made available to the Concessionaire up to 182 days from the Appointed Date. Upon issue of such Provisional Certificate, the provisions of Article 15 shall apply to such completed part, and the rights and obligations of the Concessionaire for and in respect of such completed part of the Project shall be construed accordingly*".

Corporate office : " LION TOWER ", Plot No. 97, Elegant Estate, Near Mother Teresa School, Behind Petrol Pump, Kolar Road, Bhopal - 462042 (M.P.)
Regional Office : Mumbai | Gurugram | Raipur
Tele / Fax : +91 755 2879499 E-mail : corporate@liongroup.in, info@liongroup.in
Website : www.liongroup.in

Page 1 of 4

3. Hence, in view of above and according to clause 14.3.2 of the CA, the status of project work in accordance with schedule-B, C & D of CA is herein under:

S.No.	Section (km)		Side	Length (km)	Remark
	From	To			
1	400+575	406+750	BHS	6.175	This section is considered in Pre-COD. Balance work highlighted in Punch List A.
2	406+750	407+250	BHS	0.500	This section is not considered in Pre-COD. Work is in progress due to delay in Forest Clearance. Balance work is highlighted in List-B
3	407+250	465+500	BHS	58.250	This section is considered in Pre-COD. Balance work highlighted in Punch List A.
Total 4-lane length (km)				64.925	
4-lane length (km) for Pre-COD				64.425	

4. As per NHAI Policy circular dated 21.12.2015, the Independent Engineer vide letter no. 6655; dtd: 10.07.2019, has submitted proposal for concurrence for issuance of Provisional Completion Certificate under clause 14.3 of the Concession Agreement.

5. In this regard, the RO-Raipur, further vide letter no 1132; dtd: 25.07.2019 has issued requisite concurrence with instructions to Independent Engineer to assure followings before issuance of provisional certification:
   i. The following item of List-C shall be completed before issuance of PCOD:
      a. Flyover at Km 459+182 is opened for traffic at both levels.
      b. Bridge at Km. 439+883 including rehabilitation of existing 2-lane Bridge.
      c. Metal Beam Crash Barrier.
      d. New Jersey Crash Barrier.
      e. Casting of curbs including painting.
      f. Finishing work around Toll Booths.
      g. Road Marking and sign Boards.
   ii. Maintain the smooth movement and traffic in the section Km. 406+750 to Km. 407+250, especially at Km. 409+981.

6. Further, Concessionaire vide letter no. 519; dtd: 29.07.2019, has confirmed compliance of above mentioned works and requested to issuance of provisional completion certificate in pursuant to article 14 of CA. In this continuation, the Independent Engineer has inspected project highway and all pending works have been completed satisfactory by the Concessionaire.

7. In view of above, the Independent Engineer is of opinion that the Concessionaire is now eligible for issuance of provisional completion certification in pursuant to article 14 of CA. *Hence, the Independent Engineer is herewith issue **Provisional Completion Certificate** (enclosed in **Appendix-I**) in pursuant to clause 14.3 of the Concession Agreement along with followings*:
   a. The Project Highway has been constructed as per scope defined under Schedule B & C, in conformity with the technical specifications and standards set forth in Schedule-D of the Concession Agreement. The detailed summary against each item of the Schedule B & C is shown in ***Annexure-I***. The List of minor outstanding works of Pre-COD section (forming "PUNCH LIST-A") is attached as ***Appendix-II***. As per clause 14.4.1 of the Concession Agreement, the works in PUNCH LIST-A have to be completed by the Concessionaire within 90 days of issuance of Provisional Certificate.
   Also, the list outstanding works for section not considered in Pre-COD, is annexed as LIST-B of ***Appendix-II***.

Page 2 of 4

b. The Concessionaire has carried out successfully all tests in accordance with clause 2 of schedule-I & clause 14.1 of the CA in presence of Independent Engineer and the representative of Authority. The Concessionaire vide letter no: DBL/YWHPL/IE/2019/504; dtd:30.06.2019, has submitted test reports as annexed in ***Annexure-II (a), Annexure-II (b), Annexure-II (c), Annexure-II (d), Annexure-II (e)*** .

c. The Environmental Audit as per the provisions of clause 2.9 of Schedule-I, has been conducted by Environmental Expert and they have found that Concessionaire has complied with the Applicable Law and Permits and the same conforms to Good Industry Practice. The Concessionaire vide letter no: DBL/YWHPL/IE/2019/505; dtd: 30.06.2019, has submitted Environmental Audit Report which annexed as ***Annexure-II (f)***.

d. In the event of non-appointment of Safety Consultant by the Authority as per Schedule-L of CA, the Concessionaire has carryout Safety Audit through MANIT-Bhopal after recommendation of the Independent Engineer for meeting obligations of CA. The Final Safety Audit report is enclosed as ***Annexure-II (g)*** and all recommendations of Safety Consultant have been successfully completed.

e. The Independent Engineer has issued total 18 nos. of Non-Conformance Reports during the construction period and the Concessionaire has been satisfactorily complied and rectified all deficiencies highlighted in NCRs issued by the Independent Engineer. Accordingly, all NCRs were closed by the Independent Engineer. Copy of all NCRs with summary is annexed as ***Annexure-V***.

f. The Concessionaire has achieved Project Mile Stone-I, II & III well in advance before schedule date in accordance with Schedule-G of CA. (**Refer *Annexure-III*).**

g. The Concessionaire has submitted the consolidated Change of Scope proposal for works completed / under progress / to be taken up and all COS proposals were reviewed by the Independent Engineer as per Article-16 of the Concession Agreement. The summary & Status of COS proposals with all correspondences are enclosed as ***Annexure-IV*.**

h. The Concessionaire has mobilised incident management vehicles i.e. Ambulance, Patrolling Vehicle & Crane at toll plaza. It is pertinent to mention herein that the Concessionaire has undertaken to mobilised incident management vehicle as per NHAI policy circular no. 12.19; dtd: 20.03.2018 within period of 90 days.

i. The Concessionaire has applied for electrical connections at all such locations where work is in progress by the Electricity Department. However, Concessionaire has undertaken for lightening at completed section through DG set. **(refer Annexure-VI)**

j. It is pertinent to mention herein that the Concessionaire has undertaken to ensure followings till & at time of handing over toll plaza to toll operation agency (to be appointed by NHAI):
   i. To calibrate Static Weigh Bridge (SWB) & Medium Speed Weigh in Motion (MS WIM) by Weight & Measurement Department.
   ii. To keeping watch and ward of equipment and system installed at the Toll Plazas. To conduct all requisite tests as per NHAI Policy/Guidelines, once it introduced by the Authority.

k. As per clause 17.3.1 of the Concession Agreement, the Concessionaire vide letter no: DBL/YWHPL/IE/2019/506.; dtd: 30.06.2019 has submitted Maintenance Manual which has been reviewed by IE. **(Refer Annexure-VII)**

l. After issuance of Provisional Certificate, the Concessionaire shall ensure followings with immediate effect:
   i. As per clause 17.1.2 of the Concession Agreement "The Concessionaire shall remove promptly from the Project Highway all surplus construction machinery and material, waste materials (including hazardous materials and waste water), rubbish and other debris (including without limitation, accident debris) and keep the Project Highway in a clean, tidy and orderly condition and in conformity with Applicable Laws, Applicable Permits and Good Industry Practice. For Avoidance of doubt, it is agreed that the debris and material excavated shall be carried to and deposited

at a place to be decide in consultation with Authority/Independent Engineer"

ii. In pursuant to Article-17 of the Concession Agreement, the Concessionaire, during the O&M Period, shall operate and maintain the project highway in accordance with Concession Agreement, applicable laws and applicable permits, and confirm to specification & standards and good industry practices.

iii. In pursuant to clause 10.5 of the Concession Agreement, "The Concessionaire, during Concession Period, shall protect the site from any and all occupations, encroachment or Encumbrance and shall not place or create nor permit any Contractor or other person claiming through or under the Concessionaire to place or create any Encumbrance or security interest over all or any part of the site or project assets or on any rights of the Concessionaire therein or under this Agreement, save and except as otherwise expressly set forth in the Concession Agreement."

iv. As per clause 17.16 of the Concession Agreement, "The Concessionaire shall not undertake or permit any form of commercial advertising, display or hoarding at any place on the site.

v. All obligations pertaining to operation & maintenance of the project highway as per relevant provisions of the Concession Agreement.

Therefore, in the view of the above and as per the provisions of clause 14.3 of the Concession Agreement, the Independent Engineer herewith issue Provisional Completion Certificate to the Concessionaire in the format annexed as ***Appendix-I***.

This is being forwarded for your kind perusal and necessary action.

Thanking You,
Yours sincerely,
For & On Behalf of M/s Lion Engineering Consultants,

(Sushil Nimbark)
Sr. Chief General Manager (Tech/BD) cum Authorized Representative

Encl:
1. Appendix-I and II.
2. Annexure-I to VII.

Copy for information:
1. The Regional Officer, Narang Tower 1st Floor, Opposite to Office of Dy. Commissioner of Police Traffic (Nagpur City), Palm Road, Civil Lines. Nagpur-440001 Maharashtra Email: ronagpur@nhai.org
2. The Project Director, **(K/a to Shri Prashant D. Mendhe)**, Project Implementation Unit (PIU), National Highways Authority of India (NHAI), Chandan Niveas, Plot No.13, Kolhe Layout Part-02, Dharwa Road, Yavatmal, Maharashtra-445001. Email- yavatmal@nhai.org nhaiyavatmal@gmail.com
3. The Team Leader, M/s Lion Engineering Consultants, Project Office-Yavatmal. Email- lecmhyavatmalwardha@gmail.com.
4. The Executive Director, M/S Lion Engineering Consultants, Bhopal. Email: ed@liongroup.in

Page 4 of 4

LION ENGINEERING CONSULTANTS
"Contributing in Building the Infrastructure of the Nation"

PROVISIONAL CERTIFICATE

1. I, Sushil Nimabrk, M/S Lion Engineering Consultants, acting as Independent Engineer under and in accordance with the Concession Agreement dated 9th June 2017, for development and operation of the Project Four Laning of Yavatmal to Wardha (Package III) section of NH-361 From KM 400+575 to KM 465+500 (Design Length 64.925 Km) in the state of Maharashtra under NHDP Phase-IV on Hybrid Annuity Mode on design, build, operate and transfer (the "Hybrid Annuity") basis through *DBL Yavatmal Wardha Highways Private Limited*, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken for the section from Km. 400+575 to Km. 406+750 and Km. 407+250 to Km. 465+500 of the Project to determine compliance thereof with the provisions of the Agreement.
2. Construction Works forming part of the section from Km. 400+575 to Km. 465+500 of the project that were found to be incomplete and/or deficient have been specified in the Punch list appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. Some of the incomplete works have been delayed as a result of reasons attributable to Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire, I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the section Km. 400+575 to Km. 406+750 and Km. 407+250 to Km. 465+500 of the project, pending completion thereof.
3. In view of the foregoing I am satisfied that the Section Km. 400+575 to Km. 406+750 and Km. 407+250 to Km. 465+500 of the Project can be safely and reliably placed in commercial service of the users thereof, and in terms of the Agreement, the section of the Project Highway is hereby provisionally declared fit for entry into operation on this the 02 day of August 2019

ACCEPTED, SIGNED, SEALED AND DELIVERED
For and on behalf of
CONCESSIONAIRE by:

DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED

(Signature)
Mr. Girish Talwar,
Authorized Signatory
(DBL Yavatmal Wardha Highways Private Limited)
Reg. Office: Plot No.5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal-462016 (MP)

SIGNED, SEALED AND DELIVERED
For and on behalf of
INDEPENDENT ENGINEER By:

LION ENGINEERING CONSULTANTS BHOPAL

(Signature)
Mr. Sushil Nimbark,
Authorized Signatory
Plot No. 97, "LION TOWER"
Near Mother Teresa School,
Kolar Road,
Bhopal-462042 (MP)

Corporate office : " LION TOWER ", Plot No. 97, Elegant Estate, Near Mother Teresa School, Behind Petrol Pump, Kolar Road, Bhopal - 462042 (M.P.)
Tele / Fax : +91 755 2879499 E-mail : corporate@liongroup.in, info@liongroup.in
Website : www.liongroup.in

LION GROUP Serve Society is Our M

APPENDIX-II

Name of Project- "Four Laning of Yavatamal to Wardha (Package-III) Section of NH-361 from Km 400.575 to Km 465.500 (Design length 64.925 km) under NHDP Phase-IV on Hybrid Annuity Mode".

PUNCH LIST A

(Work To Be Completed In 90 Days After Issuance Of Provisional Completion Certificate)

Sr. No.	Work	Work not yet complete
1	Median Plantation	15.00 Km
2	Turfing	35.10 Km.
3	Geo green Blanket	2.10 Km
4	Highway Lightning	40
5	High Mast Lightning	2
6	Rain water harvesting structures	
7	Submission of as built drawings	
8	Avenue Plantation	
9	Boundary pillars to be provided as per IRC provisions	
10	Cctv camera at Toll Plaza Tunnel	
11	Toll plaza compound wall, landscaping, Finishing work in toll plaza campus & building, flooring at tunnel, parking area development.	
12	Numbering of structures.	
13	Finishing work in building block of truck lay bye.	
14	02 Nos Residential quarters at toll plaza	
15	Tree guard for Avenue plantation	
16	Communication System and Advance Traffic Management Syastem (ATMS)	

APPENDIX-II		
Name of Project- "Four Laning of Yavatamal to Wardha (Package-III) Section of NH-361 from Km 400.575 to Km 465.500 (Design length 64.925 km) under NHDP Phase-IV on Hybrid Annuity Mode".		
LIST-B		
(Balance work not part of Pre-COD)		
Sr. No.	Details of work	Remark
1	Balance work from km 406+750 to km 407+250 as per schedule-B & C of CA	Delay due to clearance from forest department. However, work is now started and to be completed soon.
2	Construction of Highway Mini-nest at both side of Toll plaza	Work is proposed under COS in pursuant to article 16 of CA. However, the Concessionaire has started construction work and to be completed soon.
3	Construction of Vehicular Overpass Approaches with Service Road & Drain @ 409+966	Work is proposed under COS in pursuant to article 16 of CA. However, the Concessionaire has started construction work and to be completed soon.
4	Construction of Rest Area as per Schedule-C & D of CA	Delay in handing over of additional land for construction of Rest Area. However, the Concessionaire has started construction of Rest Area and to be completed soon.

Annexure 6: Insurance

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001998
जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत/Business Source: 910355
विक्रय चैनल कोड/**Sales Channel** Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number: 1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL YAVATMAL WARDHA HIGHWAYS PRIVATE LIMITED
पता/ Address: A-06, FLAT NO 301, SLPL DOCTORS COLONY, SAMAJ EKTA GRUHNIRMAN SOCIETY, SOMALWADA, NAGPUR, City: NAGPUR, District: NAGPUR, State: MAHARASHTRA, PIN: 440015.
Cell: 9626292328

ग्राहक आईडी /Customer ID: 9701881852
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAGCD1443H

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी **/Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 77,58,223.00	कवर नोट संख्या और तारीख/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 13,96,480.00	प्रस्ताव संख्या और तारीख/Proposal Number and Date	8800200327087221 Dt. 27/03/2020
केरल बाढ़ उपकर/Kerala Flood Cess	₹ 0.00		
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तारीख/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 91,54,703.00	पिछली पॉलिसी संख्या और समाप्ति तारीख/ Previous Policy Number and Expiry Date	NA

(Rupees Ninety One Lakh Fifty Four Thousand Seven Hundred Three Only.)

Location: Yavatmal to Wardha (Package-III) Section of NH-361, Maharashtra Yavatmal, Yavatmal, 445001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic	Zone IV	7,51,00,00,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	25,00,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी **/ Clauses, Endorsements and Warranties Applicable:**Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions ; POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

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Page no: 1

INSURANCE

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पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001998

जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355
विक्रय चैनल कोड/**Sales Channel** Code: 910355000000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Four Laning of Yavatmal to Wardha (Package-III) Section of NH 361 from Km 400.575 to Km 465.500 (design length 64.925 km) in the state of Maharashtra Under NHDP Phase IV on Hybrid Annuity Mode.

Name of the co insured under the policy is Dilip Buildcon Ltd. & NHAI.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS..

जिसकी गवाही में दिनि/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को विधिवत अधिकृत किया जा रहा है उसके हाथ निर्धारित किए जाएं। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठांकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट https://nationalinsurance.nic.co.in पर उपलब्ध है, को एक अनुबंध के रुप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दिया जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्रारंभिकित निरस्त हो जाएगी। */IN WITNESS WHEREOF, the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this* **27/March/2020.** *This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website https://nationalinsurance.nic.co.in shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that* ***IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'***

इंशयोरेंसइंडियालिमिटिड

स्टाम्प ड्यूटी Stamp Duty: (₹ 0.50)

नेशनल इंशयोरेंस कंपनी लिमिटेड/ *For and on behalf of National Insurance Company Limited*

अधिकृत हस्ताक्षरकर्ता *Authorised Signatory*

Printed on 27/03/2020 by ID: 75159

Page no: 2

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This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:32:37 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: 171200/44/2021/43	Prev Policy No	:
Cover Note No	:	Cover Note Dt	:
Insured's Code	: 114502229	Issuing Office Code	: 171200
Insured's Name	: DBL Yavatmal Wardha Highways Pvt Ltd (GSTIN: 27AAGCD1443H1ZU)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: SLPL, Doctors Colony,Samaj Ekta Ghuhnirman Society, Somalwada, Nagpur, Nagpur, Maharashtra	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: NAGPUR-440002@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	: 0265-2252274/0265-2357445/0265-2356033/

Period of Insurance : FROM 14:49 ON 17/09/2020 TO MIDNIGHT OF 16/09/2021

Collection No & Dt : DC_I_IND 3214000851 - 17/09/2020 GST INVOICE NO :2419487430 UIN :0

Gross Premium : 18,118 GST : 3,261 Stamp Duty : 1 Total : 21,379

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 4,02,64,229

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Wardha to Butibori

MAHARASHTRA - 440002

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		4,02,64,229

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:32:37 IST
Location: NOIDA
Reason: Signing Policy for OICL

Attached to and forming part of policy number 171200/44/2021/43

2) Winchester Drive and/or Hard Disc-25% of claim amount subject to a minimum of Rs.10,000/-

In case of computers, the term 'equipment' shall include the entire computer system comprising of CPU, Key boards, Monitors, Printers, Stabilizers, UPS.

SCHEDULE OF PREMIUM

Cover Description	Premium
TOTAL PREMIUM	18,118
ADD :IGST	3,261
STAMP DUTY	1
TOTAL AMOUNT	21,379

Total Sum Insured In Words : Indian Rupees Four Crores Two Lakhs Sixty-Four Thousand Two Hundred Twenty-Nine Only
Total Amount Paid : Indian Rupees Twenty-One Thousand Three Hundred Seventy-Nine Only

The Insurance under this policy is extended to cover risks of (as per forms attached):

EAR - EARTHQUAKE COVER
STFI Inclusion Cover

Excess / Deductible :
The following minimum deductibles are applicable based on Sum Insured of the policy

The Insurance under this policy is subject to warranties & Clauses (as per forms attached) :

In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
Communicable Disease Exclusion Clause
Exclusion-Any Direct or indirect loss by infectious or contagious disease

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at CBU Vadodara (GSTIN: 24AAACT0627R2Z4) on 17TH DAY OF SEPTEMBER 2020

For and on behalf of
The Oriental Insurance Company Limited

Entered By : AKSHAY ASHOKRAO HIWALE
Examined By : A K Parmar

Authorised Signatory

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 2 of 2

IRDA Regn. No. 556 Now you can buy and renew selected policies online at www.orientalinsurance.org.in

HDFC ERGO General Insurance Company Limited

May 06, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203384108600000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203384108600000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203384108600000 Employees Compensation Insurance

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)	Business	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		Phone		E Mail		Policy Issuance Date	06/05/2020

Period of Insurance	From Date & Time	02/05/2020 00:01 AM	To Date & Time	01/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹ Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203384108600000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Details of Employees Covered

Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment
Road Paving, Tarring and Road Making-Road Paving, Tarring and Road Making-Road Paving, Tarring and Road Making_Road Paving, Tarring and Road Making_All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled, Unskilled, Engineers, Supervisors, Managers, Daily Labour Etc.	100	24000000.00	Four Laning of Yavatmal to Wardha (Package-III) Section of NH-361 from Km 400.575 to Km 465.500 (design length 64.925 km) in the state of Maharashtra Under NHDP Phase-IV on Hybrid Annuity Mode

Premium Details (₹)

Basic Premium	**36056.00**
Integrated Tax 18%	**6490.00**
Total Premium	**42546.00**

GST Registration No: 24AABCL5045N1ZE.The contract will be cancelled ab intio in case; the consideration under the policy is not realized.

List of Endorsements

Endt No	Description	Effective Date
EC_12_0001	Medical Expenses	02 May 2020
WC-02-0008	Tariff Endorsement	02 May 2020
EC-13-0006	Insurance Contract	02 May 2020
EC-13-0005	Policy Schedule	02 May 2020
EC_12_0003	Contractors Employees	02 May 2020
99901	Communicable Disease Exclusion- Wordings as per annexure attached	02 May 2020
	Warranted that there are no known losses and /or circumstances leading to losses (except for the claims and / or circumstances already reported to HDFC ERGO General Insurance Co. Ltd. This policy document is issued basis the information provided though request for quotation and/ or unsigned proposal form and / or other details provided by the insured / insurance intermediary and/ or though discussions	02 May 2020

3114203384108600000 Page 3 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

Annexure 7: Change of Scope

S No.	Description of COS	Amount as per Concessionaire (Cr.)	Amount Recommended by IE(Cr.)	Status of Approval	Status of Execution at site
1	Construction of VOP with 2 lane including approaches at Km.409.800	28.15	6.75	IE has forwarded to PD to obtain approval from Competent Authority	Approaches are in progress
2	Construction of Highway Mini Nest	1.80	1.54	IE has forwarded to PD to obtain approval from Competent Authority	Work is progress
3	Construction of Minor Bridge at Km.433.585 due to shifting of the PUP	1.24	1.15	IE has forwarded to PD to obtain approval from Competent Authority	Completed
4	Implementation of Hybrid ETC in all lanes of Toll Plaza along the NH & MS WIM in place of SS WIM	1.80	0.24	IE has forwarded to PD to obtain approval from Competent Authority	Completed
		32.99	9.67		

Annexure 8: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Four Laning of Tuljapur-Ausa (including Tuljapur Bypass) section of NH-361 from Km.0.000 to Km.55.835(Existing Chainage Km.416.000 to Km.470.000) under NHDP Phase -IV in the state of Maharashtra on Hybrid Annuity Mode.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Laning of Tuljapur-Ausa (including Tuljapur Bypass) section of NH-361 from Km.0.000 to Km.55.835(Existing Chainage Km.416.000 to Km.470.000) under NHDP Phase -IV in the state of Maharashtra on Hybrid Annuity Mode.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Tuljapur-Ausa	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL TULJAPUR - AUSA HIGHWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Tuljapur Ausa Highways Limited (herein after referred to as the "Concessionaire") had augmented the existing 2 lane Highway between Tuljapur and Ausa (including Tuljapur Bypass) from Km.0+.000 to Km.55+835 to 4 laning on Hybrid Annuity Mode, entered in to the Concession Agreement dated 1st May 2017 between DBL Tuljapur Ausa Highways Limited (**"Concessionaire"**) and National Highways Authority of India (**"Authority"**).

Project starts at Km.0+.000 (Tuljapur) and terminates at Km.55+835 (Ausa Town). Project is 4 lane and is awarded under Hybrid Annuity Mode. Project location map is provided at Figure 1.1.

SHREM INFRAVENTURE PRIVATE LIMITED (SIPL) acquired DBL TULJAPUR AUSA HIGHWAYS LIMITED vide agreement dated 26.03.2018

SHREM FINANCIAL PVT LTD (SFPL) appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

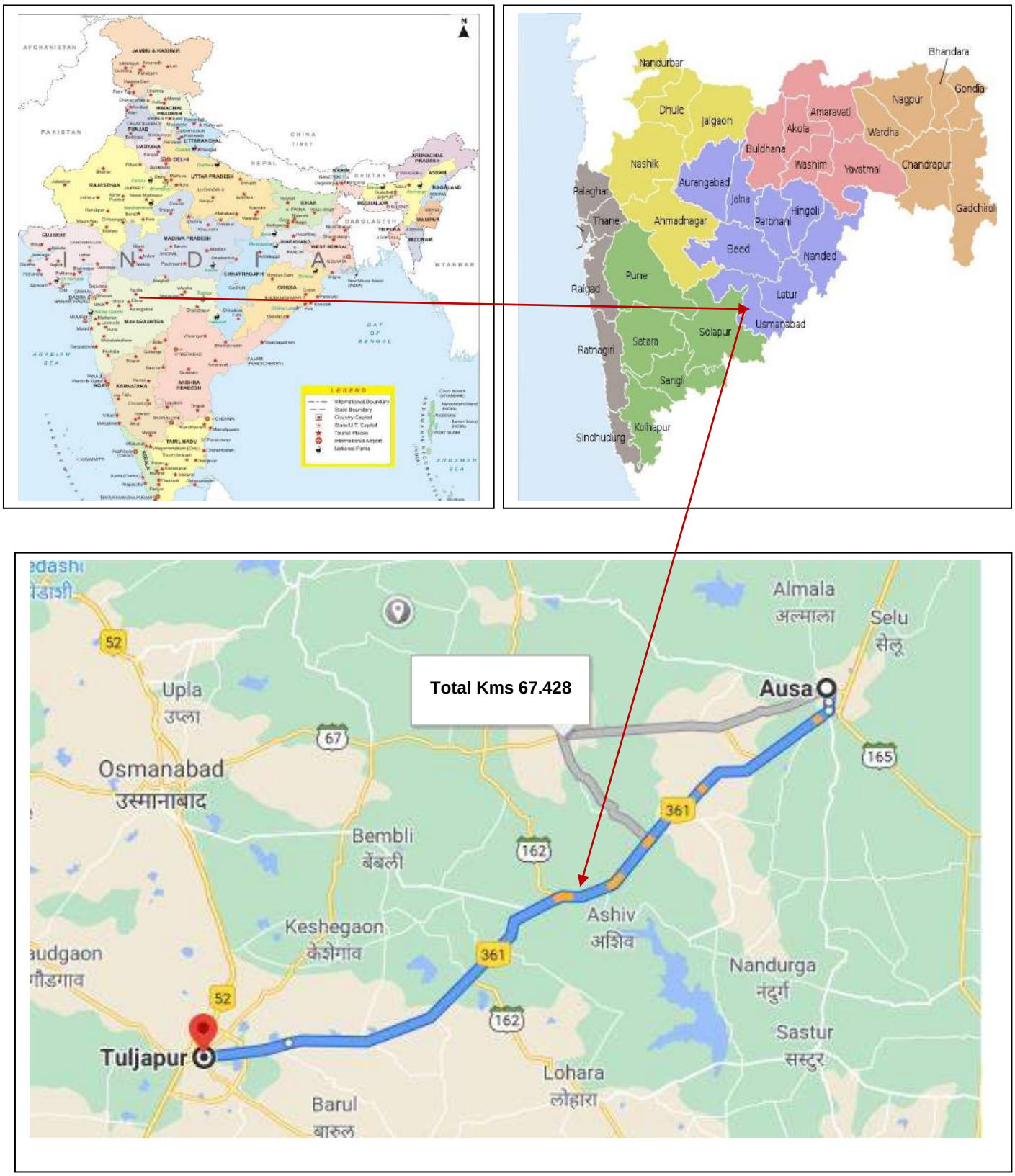

Figure 1.1: Project Location Map

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Four Laning of Tuljapur-Ausa Section of NH-361 From Km.0+000 to Km. 55+835(Existing chainage Km.416+000 to Km.470+000) under NHDP Phase IV in the state of Maharashtra onHybrid annuity Mode.
2	Road Type	National Highway
3	Name of the Authority	NHAI
4	Name of the Concessionaire	DBL Tuljapur Ausa Highways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Consultant (Independent Engineer)	Lion Engineering Consultants
7	Date of LOA	17.02.2017
8	Date of Agreement	1st May 2017
9	Design Length as per Schedule B of CA	67.428 Km including Tuljapur Bypass
10	Actual Length Constructed	67.428 Km including Tuljapur Bypass
11	Project Lane Configuration	Four Lane
12	EPC Cost	Rs.650.000 Cr
13	Bid Project Cost	Rs.911.070 Cr
14	Concessionaire TPC	Rs.546.642 Cr
15	NHAI support during construction	Rs.364.428 Cr
16	Nature of contract	DBFOT (Hybrid Annuity Model)
17	Toll collected by	Authority
18	Concession Period	Construction Period of 910 days Operation Period of 15 years
19	Appointed date	22nd November 2017
20	Concession End Date	17.11.2034
21	Construction Period	910 days from the Appointed Date
22	Schedule Completion Date	20th May 2020
23	Date of issuance of Provisional Certificate (Commercial Operation Date)	18thNovember 2019
24	Bonus on early completion	Applicable as per Cl.23.5 of CA
25	Date of issuance of Completion Certificate	Yet to be received
26	Annuity Amount	As per Cl 23.4 and 23.6.3 of CA
27	Total Number of Annuities payable	30 Nos.
28	First Annuity Payment Date	18.05.2020
29	Total Number of Annuity Payments received till Jan 2021	2 No.

Project Start: Km. 0+000

Project End: Km. 55+625

Figure 1.2: Project Start and End Locations

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No	Particulars	As per CA	As per COS	As per Site
1	Total Length of Main Carriageway 4-Lane with Rigid Pavement including	67.428 Kms.	---	67.428 Kms.
2	Total length of Service Roads	18.85 Kms.	---	18.85 Kms.
3	Total length of Slip Roads	0.96 Kms	---	0.96 Kms.
4	Toll Plazas	1 No.	---	1 No.
5	Bus Bays with Bus Shelters	34 Nos.	---	35* Nos.
6	Truck Lay Bays	1 No.	---	1 No.
7	Rest Areas	1 No.	---	1 No.
8	Major Junctions	8 Nos.	---	8 Nos.
9	Minor Junctions	46 Nos.	---	49* Nos.
10	Vehicular underpasses	4 Nos.	---	4 Nos.
11	Light Vehicular underpasses	3 Nos.	---	3 Nos.
12	Pedestrian underpasses	3 Nos.	---	3 Nos.
13	Over Passes	1 No.	---	1 No.
14	Minor Bridges	19 Nos.	+ 1 Nos.	20 Nos.
15	Hume Pipe Culverts	72 Nos.	---	72 Nos.
16	Box / Slab Culverts	17 Nos.	---	17 Nos.

- Total 49 Minor Junctions are developed as per site requirement
- Total 35 Nos of Bus Shelters are developed as per site requirement.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

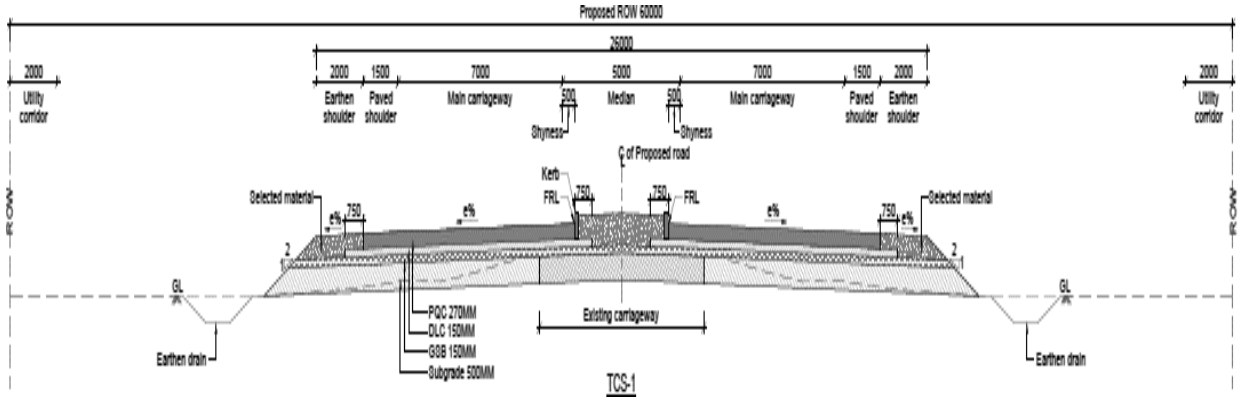

Figure 2.1: (TCS-1) 4-Laning by Concentric Widening with 4.0m Raised Median

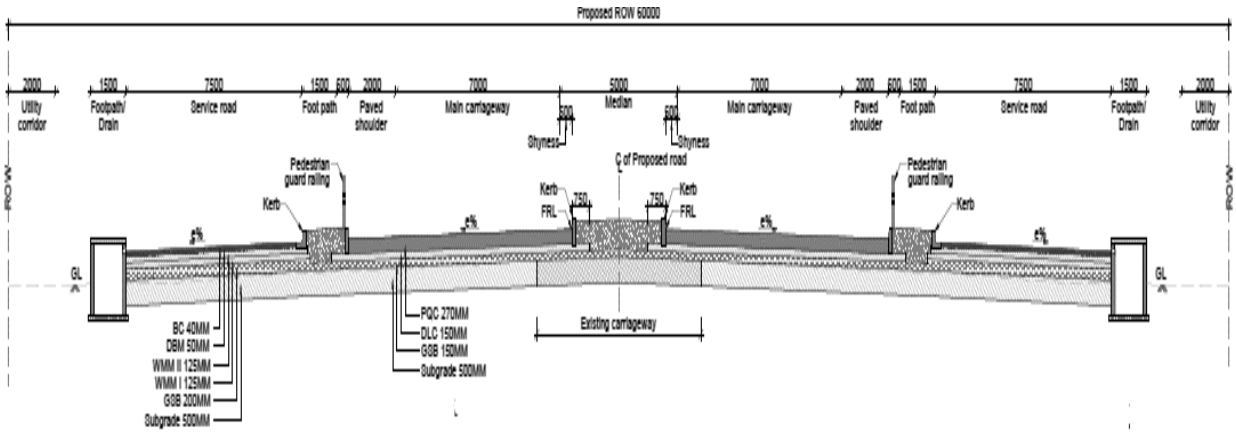

Figure 2.2: (TCS-2) Built-Up Section-Plain /Rolling Terrain with Service Roads

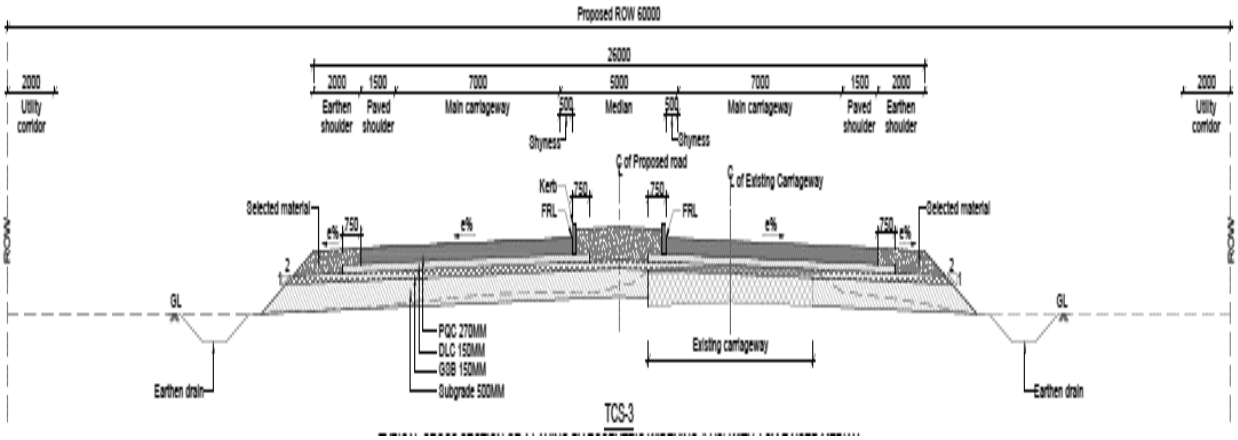

Figure 2.3: (TCS-3) 4-Laning by Eccentric Widening (LHS) with 4.0m Raised Median

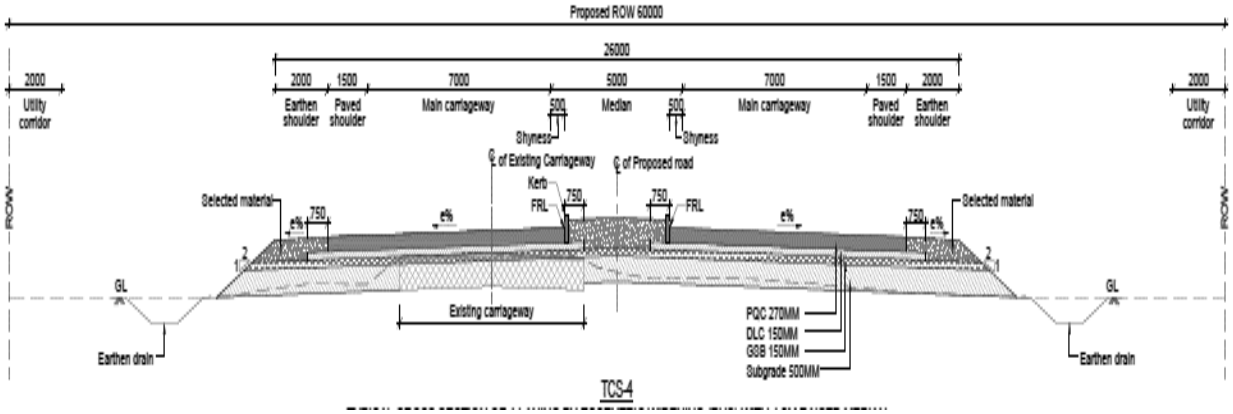

Figure 2.4: (TCS-4) 4-Laning by Eccentric Widening (RHS) with 4.0m Raised Median

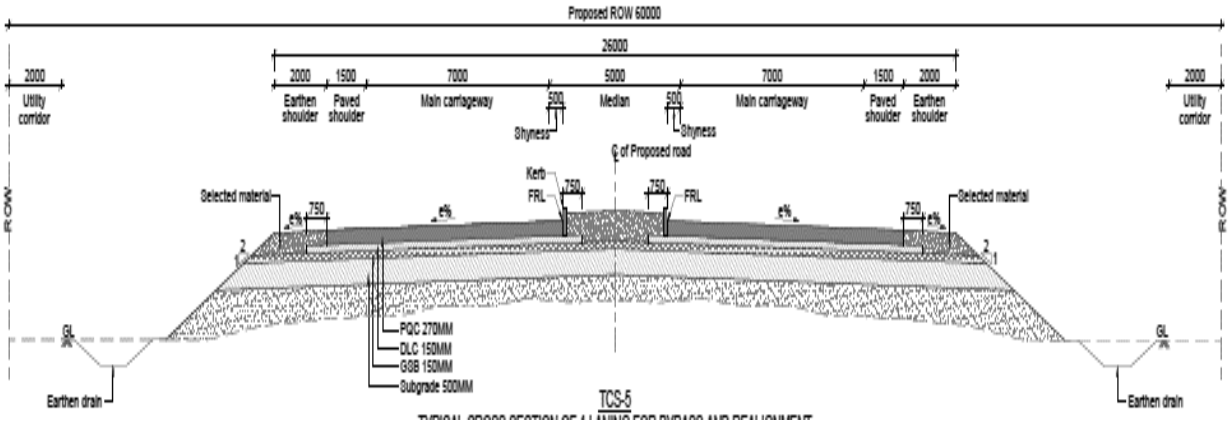

Figure 2.5: (TCS-5) Typical Cross Section of 4-Laning for Bypass and Realignment

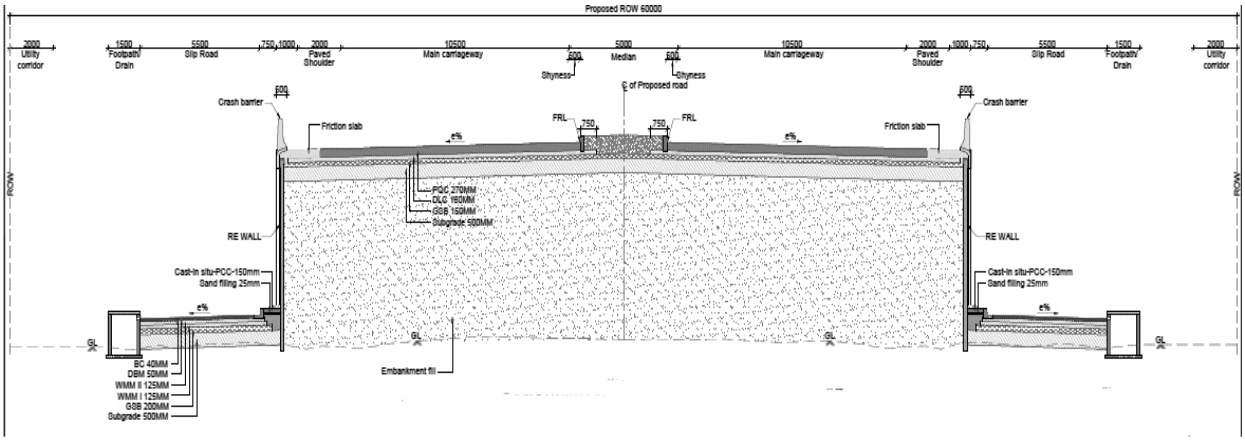

Figure 2.6: (TCS-6C) Four Lane Underpass Cross Section with Slip Roads in Bypass & Realignment

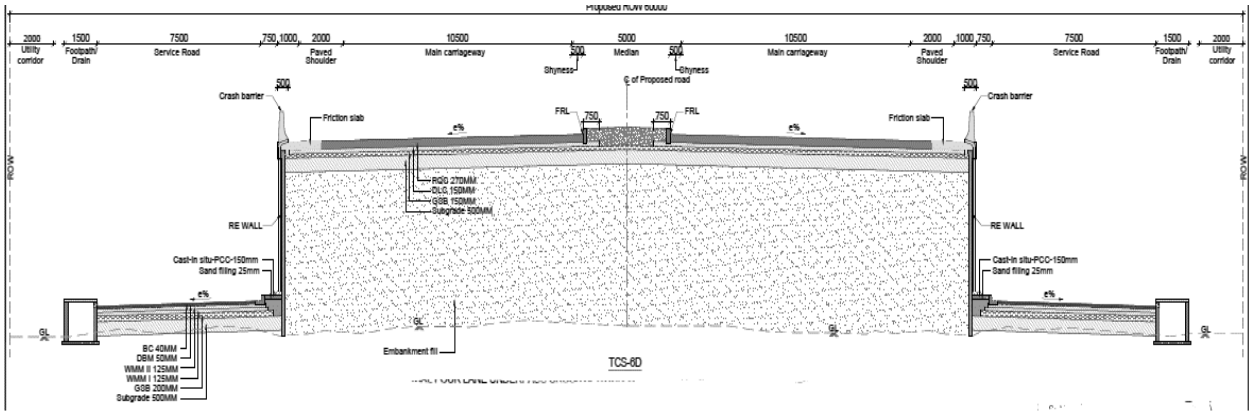

Figure 2.7: (TCS-6D) Four Lane Underpass Cross Section with Service Roads in Bypass & Realignment

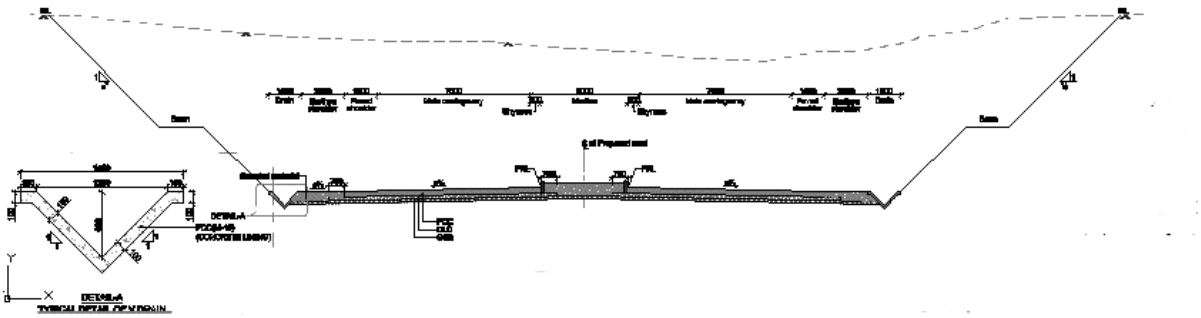

Figure 2.8: (TCS-7) 4-Lane Carriage Way (Both Side Cutting)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Km)	Type of TCS
1	0+000	1+180	1.180	2
2	1+180	1+410	0.230	3
3	1+410	1+490	0.080	4
4	1+490	1+810	0.320	1
5	1+810	4+580	2.770	3
6	4+580	4+900	0.320	1
7	4+900	5+560	0.660	3
8	5+560	5+780	0.220	2
9	5+780	6+380	0.600	6C
10	6+380	6+410	0.030	2
11	6+410	11+690	5.280	4
12	11+690	11+940	0.250	2
13	11+940	12+080	0.140	3
14	12+080	16+030	3.950	4
15	16+030	16+620	0.590	2

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Km)	Type of TCS
16	16+620	20+660	4.040	4
17	20+660	20+850	0.190	2
18	20+850	21+460	0.610	6C
19	21+460	21+810	0.350	2
20	21+810	22+950	1.140	4
21	22+950	24+290	1.340	1
22	24+290	25+340	1.050	4
23	25+340	25+570	0.230	5
24	25+570	26+190	0.620	4
25	26+190	26+560	0.370	5
26	26+560	29+150	2.590	4
27	29+150	29+470	0.320	2
28	29+470	30+070	0.600	6C
29	30+070	30+280	0.210	2
30	30+280	33+510	3.230	4
31	33+510	34+130	0.620	2
32	34+130	38+200	4.070	3
33	38+200	38+540	0.340	1
34	38+540	41+230	2.690	3
35	41+230	41+630	0.400	1
36	41+630	41+700	0.070	2
37	41+700	42+410	0.710	6C
38	42+410	42+630	0.220	2
39	42+630	43+030	0.400	1
40	43+030	44+630	1.600	3
41	44+630	45+470	0.840	2
42	45+470	48+680	3.210	4
43	48+680	49+110	0.430	6C
44	49+110	50+100	0.990	4
45	50+100	51+025	0.925	6C
46	51+025	54+850	3.825	4
47	54+850	55+310	0.460	6C
48	55+310	55+710	0.400	4
49	55+710	55+835	0.125	1
TULJAPUR BYPASS				
50	0+000	5+200	5.200	5
51	5+200	5+760	0.560	7
52	5+760	10+060	4.300	5
53	10+060	10+540	0.480	6D
54	10+540	11+593	1.053	5

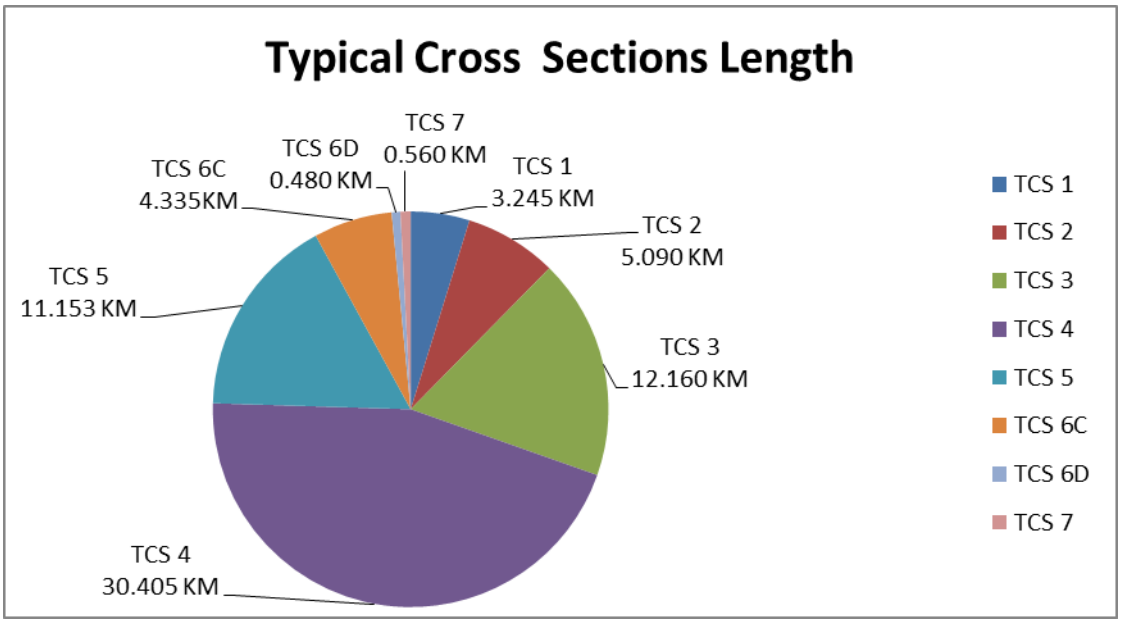

Figure 2.9: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of water from the Carriageway and to avoid accumulation of drainage from the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads (Ref.4.8 of Schedule B)

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the Concession Agreement. The details are provided below.

Table 2.3: Service road/ Slip Roads as per Schedule-B of CA

S. No	From (Km)	To (Km)	Side	Length (km)	Village Name
1	0+000	1+180	Both	1.180	Tuljapur
2	5+560	6+410	Both	0.850	Kakramba
3	11+690	11+940	Both	0.250	Khandala
4	16+030	16+620	Both	0.590	Takwiki
5	20+660	21+810	Both	1.150	Karajkeda
6	29+150	30+280	Both	1.130	Ujjaini
7	33+510	34+130	Both	0.620	Ashiv
8	41+630	42+630	Both	1.000	Belkund
9	44+630	45+470	Both	0.840	Sindala
10	48+680	49+110	Both	0.430	Sivilli Mode

S. No	From (Km)	To (Km)	Side	Length (km)	Village Name
11	50+100	51+025	Both	0.925	Borphal
12	54+850	55+310	Both	0.460	Ausa
13			**Total**	**9.425**	**Total=2x9.425=18.850**
Tuljapur Bypass					
14	10+060	10+540		0.480	Slip Road(Approach to VUP
			Total		**0.480x2=0.960**

2.5 Bypass/Realignment

Following are bypass / realignments proposed on the project road as per provisions of Schedule B of CA.

Table 2.4: Bypass/Realignment as per Schedule B of CA

S. No.	From (Km)	To (Km)	Length (km)	Remarks
1	0.000	11.593	11.593	Bypass
1	25.340	25.570	0.230	Re-alignment
2	26.190	26.560	0.370	Re-alignment
3	54.910	55.170	0.260	Re-alignment

2.6 Intersections

As per provisions of Schedule B of CA,8 Major Junctions and 46 Minor Junctions are provided. However, total 49 Nos. of Minor Junctions are developed as per site requirement. Details are given below.

Table 2.5: List of Major and Minor Intersections
Major Intersections

S. No.	Design Chainage (Km.)	Type of Junction	Side	Leads to	Remarks	Schedule Chainage
Main Highway						
1	0+000	T-Junction	LHS	Osmanabad & Solapur		0+000
2	21+152	X-Junction	Both	Osmanabad& Lohara		21+160
3	28+025	T-Junction	LHS	Osmanabad		28+070
4	41+033	T-Junction	LHS	To Sugar factory		41+090
5	55+810	T-Junction	RHS	Jawli		55+835
Tuljapur Bypass						
6	0+450	T-Junction		Tuljapur Bypass start point		0+450
7	8+370	T-Junction	Both	Tuljapur/Ausa		8+370
8	11+592	T-Junction		Tuljapur Bypass end point		11+593

Minor Intersections

S. No.	Design Chainage (Km)	Type of Junction	Side	Lead to	As per Schedule (Km.)
1	0+100	X -Junction	Left Right	To Tuljapur Bitumen Road	0+100
2	0+153	T -Junction	Right	To Bus Depo	0+168
3	0.300	T -Junction	Right	To Tuljapur	0+300
4	0.320	Staggered	Right	To Hangar gao	0+320
5	0.565	T -Junction	Right	To Mud Road	0+565
6	0.645	T -Junction	Right	To Agriculture market	0+645
7	2.458	X- Junction	Left Right	To Taduvala To Lake	2+458
8	2+950	X -Junction	Left Right	To Bavi To Malumbra	-
9	3+692	X- Junction	Left Right	To Taduvala To Hangar gao	3+700
10	4+824	T-Junction	Left	To Morda	4+825
11	5+810	Staggered	Right Left	To Lohara To Morda	5+845
12	5+916	T-Junction	Left	To Kakaramba	5+910
13	6+100	T-Junction	Left	To Kakaramba	6+028
14	9+014	T-Junction	Left	To Crusher	9+018
15	10+020	X-Junction	Right	To Wadagao	10+036
16	11+059	X-Junction	Left Right	To Field To Wadagao	11+066
17	11.350	T-Junction	Left	To Crusher	11+350
18	11+802	X-Junction	Left Right	To Khandala To Jawalgao	11+812
19	12+133	Y-Junction	Right	To Karla	12+118
20	17+132	X-Junction	Left Right	To Takwiki To Tormba	17+130
21	21.389	Y-Junction	Right	To Karechkea	21+389
22	22+343	Y-Junction	Left	To Hogao	22+330
23	22+919	T-Junction	Right	To Chotta Karachkers	22+910
24	24+056	X-Junction	Right	To Arni	24+042
25	25.636	T-Junction	Left	To Bandari	25+636
26	25+882	T-Junction	Left	ToBandari	25+900
27	27+870	Y-Junction	Right	To Kokashpur	27+900
28	29+751	X -Junction	Left Right	To Murud To Kamalpur	-
29	31+378	X -Junction	Left Right	To Field To Field	-
30	33+811	Y-Junction	Right	To Ashiv	33+850

S. No.	Design Chainage (Km)	Type of Junction	Side	Lead to	As per Schedule (Km.)
31	34+530	Y-Junction	Right	To Vangji	34+550
32	36+368	X-Junction	Left Right	To Kajoli chincholi To hincholi	36+400
33	38+326	T-Junction	Right	To Thausi	38+365
34	38+733	X-Junction	Left Right	To Taka To Hipper Gaon	38+788
35	40+143	staggered	Left Right	To Belkund To Fields	40+200
36	40.624	Y-Junction	Left	To Taka	40+624
37	42+016	T-Junction	Right	To Police stn (Mud)	42+238
38	43+064	X-Junction	Left Right	To Gulukeda To Bilagundu	43+118
39	44+692	Y-Junction	Left	To Sindah Thanda	44+743
40	44+894	Y-Junction	Left	To school	44+935
41	45+203	X-Junction	Left Right	To Elluri To Sindala	45+252
42	45+350	Y-Junction	Left	To Sindalavadi	45+345
43	45+445	Y-Junction	Left	To Sindala	45+486
44	47+552	T-Junction	Right	To Sindala	47+589
45	48+873	T-Junction	Left	To Osmanabad	-
46	50+524	T-Junction	Left	To Vill	50+550
47	50+735	Y-Junction	Left	Borphal	50+785
48	53+755	Staggered	Right Left	To Ujjini To Ausa	53+753
49	55+072	X-Junction	Left Right	To Ausa To Nagar Soga	55+110

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the Concession Agreement 3 nos. of Pedestrian Underpass, 3 nos. of Light Vehicular Underpass and 4 nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Carriageway and Pavement Details

Summary of Pavement Details is given below:

Table 2.6: Carriageway and Pavement Details

S. No.	Description	Flexible (km.)	Rigid (km.)
1	Service Roads	18.85	
2	Slip Roads	0.96	
3	4 Lane with Paved shoulder		67.428
4	Total Length	19.81	67.428
TYPE OF ALIGNMENT			
5	Widening		50.9
6	Realignment		11.153
7	Cutting		0.56
8	Approaches to Underpass		4.815
9	Total Length of the Project		67.428

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.7: Summary of Structures

S No	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Under Passes/Overpasses
1	Retained					
2	Widening		11	29	1	
3	Reconstruction		4	27	7	
4	New		4	16	10	11
5	Improvement					
	Total	**--**	**19**	**72**	**17**	**11**

2.11 Toll Plazas

- There is one toll Plaza on the project road at Km. 35+200
- Toll Plaza comprises of each side of 3 Normal lanes one Extra widening lane and one Bike lane.
- The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m.
- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 7 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/shelters/Truck lay bye

As per provisions of Schedule C of CA bus bays/shelters are provided at 34 locations and 1 also 1 Truck lay bye. Details are provided below.

Table 2.8: Summary of Bus bays/Bus shelters/Truck lay bye

S. No.	Design Chainage (Km.)	Side	Name of the Village
Bus bays/ Bus shelter			
1	4+590	LHS	Dineshwar Nagar
2	4+960	RHS	Dineshwar Nagar
3	5+750	LHS	Kakramba
4	6+050	RHS	Kakramba
5	12+400	LHS	Khandala
6	12+440	RHS	Khandala
7	16+280	RHS	Takwiki
8	16+430	LHS	Takwiki
9	21+580	RHS	Karajkheda
10	21+680	LHS	Karajkheda
11	24+310	RHS	Arni
12	24+350	LHS	Arni
13	25+200	RHS	Bhandari
14	25+210	LHS	Bhandari
15	29+300	RHS	Ujani
16	29+350	LHS	Ujani
17	33+620	RHS	Ashiv Village
18	33+680	RHS	Ashiv Village
19	36+140	LHS	Kojoli Chincholi
20	36+620	RHS	Chincholi
21	38+070	RHS	Thavasi Thanda
22	38+470	LHS	Thavasi Thanda
23	42+350	LHS	Belkund Village
24	42+350	RHS	Belkund Village
25	45+100	LHS	Sindala Village
26	45+110	RHS	Sindala Village
27	50+730	RHS	Bhorphal
28	51+200	LHS	Bhorphal
29	1+630	LHS	Sindphal
30	1+730	RHS	Sindphal
31	7+800	LHS	Tuljapur
32	7+975	RHS	Tuljapur
33	10+600	LHS	Dhakta Tuljapur

S. No.	Design Chainage (Km.)	Side	Name of the Village
Bus bays/ Bus shelter			
34	10+700	RHS	Dhakta Tuljapur
Truck Lay bye			
1	6+900	RHS	Kakramba

Km. 6+900 (Bypass) Truck lay bye

Km. 38+470 Bus bay

Figure 2.10: Representative photos of Truck lay bye & Bus bay

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards, Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1 Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	67.428 km
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	57 Nos.
6	Toll Plazas	At Km.35+200
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	34 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

Km. 12+400

Km. 43+200

Km. 43+200

Km. 54+200

Figure 3.1: Photographs of the Road Project

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on visual observations. The criteria adopted for the classification of condition of the pavement is as per of IRC 83-2018.

Table 3.2: Pavement condition summary

From (km.)	To (km.)	Length (kms)	Condition
0+000	55+835	67.428	Good
0+000	11+593		

Km. 12+400

Km. 32+400

Km.38+200

Km. 48+400

Figure 3.2: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guidelines provided in IRC SP: 52-1999 & IRC SP: 35-1990

4.2 Inventory of Structures

The details of structures along this project road are listed below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	-
2	Minor Bridge	20 Nos.
3	Underpasses	11 Nos.
4	Pipe culverts	72 Nos.
5	Slab/Box Culverts	17 Nos..

The minor bridges of superstructure are RCC solid slab/RCC Box type and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 1.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.3 Details of Minor Bridges

The details of minor bridges in the project stretch are listed below. The type of superstructure for minor bridges is RCC solid slab/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.2: Inventory of Minor Bridges

S. No.	Chainage(Km.)	Span	Total Length of Bridge (m)	Description
1	2+112	2x8.830	18.6	It has RCC Slab structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
2	3+143	3x7.1	21.2	It has RCC Slab structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
3	5+201	3x7.1	21.1	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
4	6+645	3x6.5	13.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
5	9+779	2x6	2.0	It has RCC Box structure. It has RCC

S. No.	Chainage(Km.)	Span	Total Length of Bridge (m)	Description
				Railing, bituminous wearing coat.
6	11+443	3x4.7	9.4	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
7	15+811	3x3.5	10.5	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
8	25+707	4x10	40.0	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
9	27+12	2x6.5	13.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
10	28+845	6x9.1	54.5	It has RCC Slab Super structure and RCC Sub Structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
11	33+187	2x15	30.0	It has RCC Slab structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
12	44+396	1x8	8	It has RCC Slab structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
13	46+051	2x9.2	18.4	It has RCC Slab structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
14	50+284	2x8.5	17.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
15	54+674	2x5	10	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
16	2+143	4x7.50	30.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
17	7+188	2 x 7.5	15.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
18	7+437	1X15.0	5.0	It has RCC I Girder It has RCC Railing, bituminous wearing coat, strip seal type expansion joints.
19	8+129	1x15	5.0	It has RCC I Girder It has RCC Railing, bituminous wearing coat, strip seal type expansion joints.
20	10+942	1X10.0	10.0	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.

Km. 28+845

KM.54.674

Figure 4.1: Representative photos of Minor Bridges.

4.4 Details of Underpass

There are 11 Underpasses in the project stretch. The type of superstructure for underpass is RCC I Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.3: List of Underpass in the Project Road

S. No.	Chainage(Km)	Structure Type	Span	Total Length of Bridge (m)	Description
1	6+100	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
2	21+152	VUP	1x20	20.0	It has RCC I Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
3	29+751	VUP	1x20	20.0	It has RCC I Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
4	42+016	PUP	1x7	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
5	48+873	VUP	1x20	20.0	It has RCC I Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
6	50+524	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
7	55+074	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
8	1+764	PUP	1X7.0X3.5	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous

S. No.	Chainage(Km)	Structure Type	Span	Total Length of Bridge (m)	Description
					wearing coat.
9	9+661	PUP	1X7.0X3.5	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
10	10+305	VUP	1X12.0X5.05	12.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
11	5+551 Overpass in Tuljapur Bypass		2x15.00x5.5	15.0	It has RCC I Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.

Km. 50+524

Km. 55+074

Figure 4.2: Representative photos of underpass

4.5 Details of Culverts:

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2**

4.5.1. Slab/Box Culverts

There are 17 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below

Table 4.4: List of Slab/Box Culverts

Sl. No.	Chainage (Km)	Span (m)	Vent Size (m)
1	10+170	1x5.1	1.6
2	16+840	1x4.5	2.47
3	20+250	1x4	4.1
4	36+330	1x4	1.5
5	39+300	1x4	1.5
6	39+800	1x4	2.47
7	40+920	1x4.5	3.4
8	42+100	1x1.5	5
9	1+462	1x3.0	2.0
10	3+838	1x3.0	1.5
11	4+007	1x4.0	1.5
12	4+215	1x40	4.0
13	5+113	1x4.0	4.0
14	6+846	1x3.0	2.0
15	6+944	1x3.0	2.0
16	6+955	1x3.0	2.
17	7+903	1x3.0	3.0

4.5.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

4.5.3. General Description of the Pipe Culverts

There are 72 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5 List of Pipe Culverts

S. No.	Chainage (Km)	Span	S. No.	Chainage (Km)	Span
1	1+270	1x1.2	37	36.750	2x1.2
2	1+580	1x1.2	38	37.140	1x1.2
3	1+870	1x1.2	39	37.480	1x1.2
4	2+280	1x1.2	40	38.980	2x0.9
5	3+997	1x1.2	41	39.260	3x0.9
6	5+590	1x1.2	42	40.380	3x1.2
7	8+410	2x1.2	43	41.250	4x0.9
8	8+790	1x1.2	44	41.770	3x0.9
9	10+070	2x0.9	45	42.230	1x1.2
10	10+900	2x1.2	46	42.410	2x0.9
11	12+240	1x1.2	47	42+720	1x1.2

S. No.	Chainage (Km)	Span
12	13+300	1x0.9
13	13+810	1x1.2
14	14+430	1x1.2
15	17+810	1x1.2
16	18+830	1x1.2
17	19+890	2x0.9
18	20+430	1x1.2
19	20+680	1x0.9
20	21+040	1x0.9
21	21+730	3x0.9
22	22+450	2x0.9
23	22+600	1x1.2
24	23+080	2x1.2
25	24+510	3x0.9
26	25+080	1x1.2
27	26+550	1x1.2
28	27+910	1x0.9
29	28+000	1x0.9
30	29+440	2x1.0
31	30+080	1x1.2
32	30+500	1x1.2
33	32+360	2x1.2
34	34+720	1x1.2
35	35+690	1x1.2
36	36+400	3x0.9

S. No.	Chainage (Km)	Span
48	43+040	1x1.2
49	43+580	2x0.9
50	44+850	1x1.2
51	45+020	1x1.2
52	45+490	1x0.9
53	46+780	3x1.2
54	47+090	2x0.9
55	48+160	2x1.2
56	48+400	1x0.9
57	49+110	1x1.2
58	49+930	1x1.2
59	51+330	1x1.2
60	51+520	1x1.2
61	51+900	4x0.9
62	52+310	1x1.2
63	52+780	2x0.9
64	53+060	1x0.9
65	54+160	1x1.2
66	55+590	1x0.9
67	0+200(Bypass)	1x1.2
68	4+533	2X1.2
69	4+663	2X1.2
70	2+300	1x1.2
71	2+500	1x1.2
72	11+328	1x1.2

4.5.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. REVIEW OF PAVEMENT DESIGN

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, pavement condition and CA provisions.

5.2 Pavement design crust thickness

The Pavement Design shall be carried out in accordance with Indian Roads Congress guidelines. The pavement is designed in accordance with IRC: 58 -2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for highways", IRC: SP 84 -2014, IRC: 15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5.1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	6 %
Two-way commercial traffic volume per day	1560
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	270
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	36
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	580

As per schedule D, (Annexure-I), clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl:5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements".

Table 5.2: Flexible Pavement for service road

S. No	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	9 %
2	Design Life (Years)	15 years for non-bituminous
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next Periodic Renewal Proposed for Service road on or before 2027 and 2033.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Road safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	good
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few observations on the road furniture in safety aspects for the project road are mentioned below:

Marking & OH marker at junction islands at Km.2+500

Separator Railing on Both sides at Km. 11+600

OH marker board before the Head wall at 45+100.

Sign Boards at Km.55+000 (end Point)

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General:

There is one toll Plaza on the project road at Km.35+200.The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed at the front of each island to prevent out of control approaching vehicles crashing into the toll booth. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 7 Nos. toll booths are provided in toll plaza.

Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at Toll Plaza and Control Room

S. No.	DESCRIPTION	UNIT	QTY
1	RACK42U	NOS	2
2	LASER PRINTER	NOS	1
3	USER FARE DISPLAY 2- LINES,12-CHARACTER	NOS	2
4	BOOTH MONITORING CAMERA IP HIKVISIONDS	NOS	10
5	32 CHANNEL NVR WITH 3 TB STORAGEHIK	NOS	1
6	RFID ETC TRANSCEIVER (ENTRY)	NOS	2
7	SOFTWARE - LANE LEVEL ETC	NOS	4
8	GI MODULAR BOX 8 WAY	NOS	6
9	GI MODULAR BOX 8 WAY	NOS	10
10	GI MODULAR BOX 6 WAY	NOS	3
11	GI MODULAR BOX 6 WAY	NOS	5
12	GI MODULAR BOX 6 WAY	NOS	10
13	GI MODULAR BOX 4 WAY	NOS	4
14	GI MODULAR BOX 4 WAY	NOS	10
15	10 KVA ONLINE UPS WITH 30 MINS BACKUP	NOS	2
16	6 KVA ONLINE UPS WITH 30 MINS BACKUP	NOS	1
17	OVERHEAD LANE STATUS LIGHT (OHLS)	NOS	10
18	TRAFFIC LIGHT (TMS & HTMS)	NOS	4
19	INCIDENT CAPTURE CAMERA (TMS & HTMS)	NOS	10
20	LICENSE PLATE IMAGE CAPTURE CAMERA	NOS	10
21	ELECTRONICS ENCLOSURE {TMS & HTMS)	NOS	10
22	CABLING NETWORKING FOR PLAZA, TMS & HTMS	NOS	1

S. No.	DESCRIPTION	UNIT	QTY
23	CABLE TRAY (TMS & HTMS)	NOS	70.5
24	OPERATOR MONITOR (TMS & HTMS)	NOS	8
25	CUSTOMIZED KEYBOARD (TMS & HTMS)	NOS	8
26	THERMAL RECEIPT PRINTER (TMS & HTMS)	NOS	8
27	MANUAL BOOTH CONTROLLER (TMS & HTMS)	NOS	8
28	INTERCOM SLAVE UNIT (TMS & HTMS)	NOS	8
29	BARCODE READER (TMS & HTMS)	NOS	8
30	CASHUP PC (TMS & HTMS)	NOS	1
31	AUDIT, POS, LSDU, REPORTS , WIM PC (TMS)	NOS	1
32	POS PRINTER - THERMAL (TMS & HTMS)	NOS	1
33	INTERCOM MASTER UNIT - 20 CHANNEL (TMS)	NOS	1
34	PLAZA SOFTWARE (TMS & HTMS)	NOS	6
35	PTZ CAMERAS (30X ZOOM) (TMS & HTMS)	NOS	2
36	PLAZA MONITORING CAMERA (TMS & HTMS)	NOS	5
37	JOYSTICK (TMS & HTMS)	NOS	1
38	CCTV MONITOR 42" (TMS & HTMS)	NOS	1
39	RFID ETC TRANSCEIVER WITH ACCESSORIES	NOS	8
40	RFID ETC TRANSCEIVER WITH ACCESSORIES	NOS	2
41	POS ETC RFID READER (TMS & HTMS)	NOS	1
42	LIGHT CURTAIN (OPTICAL SEPARATOR)	NOS	6
43	SWB PC (FOR RECONCILLATION & REPORTS)	NOS	2
44	METEOLOGICAL DATA LOGGERS (TMS & HTMS)	NOS	1
45	IR BULLET CAMERA 3 MP - TMS	NOS	3
46	RFID TAG (TMS)	NOS	500
47	UPS 3 KVA (TMS & HTMS)	Nos	1
48	ONLINE UPS 1 KVA (TMS & HTMS)	EA	1
49	11KV 45KN DISC T&C COMPOSITE L ROD INSU.	NOS	3
50	11KV 45KN DISC T&C COMPOSITE L ROD INSU.	NOS	5
51	11KV 5KN PIN COMPOSITE POLYMER INSULATOR	NOS	40

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	1 No
2	Ambulance	1 No.

Toll Plaza

Toll Plaza Administrative Building

Figure 7.1: Toll Plaza @ KM. 35+200

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model in which Authority makes payment of 40% of the Bid Project cost during construction period based on progress milestones set forth in Concession Agreement. Payment of the balance 60% of the Bid Project Cost is made in form of bi-annual annuities with interest during the operational phase of concession.

8.2 Payment during Construction

As per the provisions of Article 23 of the Concession Agreement, 40% of the Bid Project Cost adjusted with Price Index in accordance with Clause 23.2.3 of the CA, shall be paid during the Construction Period. Amount payable during construction period shall be paid in five equal installments upon achieving the following Project Milestones.

Table 8.1 : Schedule of Payment Milestones

S. No.	Project Milestone No	Criteria for releasing the Payment
1	Project Milestone I	On Achievement of 10% of Physical Progress
2	Project Milestone II	On Achievement of 30% of Physical Progress
3	Project Milestone III	On Achievement of 50% of Physical Progress
4	Project Milestone IV	On Achievement of 75% of Physical Progress
5	Project Milestone V	On Achievement of 90% of Physical Progress

During the Operation Period, remaining 60% of the balance Completion Cost shall be paid in 30 Annuities each Annuity payable biannually. Each Annuity amount shall be based on the percentages of the balance Completion Cost mentioned in 23.6.3 of the Concession Agreement. During the Operation Period following payment components are payable.

- Annuity Payments are due and payable every six months as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- Interest on the balance amount to be paid at an interest rate equal to the applicable Bank Rate Plus 3%, the Interest would be calculated on simple interest basis and no compounding of the same would be undertaken.
- O&M Payment is payable in two installments every year by adjusting the same with Price Index Multiple on the Reference Index Date preceding the due date of payment there of as per Clause 23.7.1 of the Concession Agreement.

Details of Annuity payments are as below.

Table 8.2: Schedule of Annuity Payments

Annuity No.	% of Completion Cost remaining to be paid on COD	Annuity Due Date	Annuity paid date
1	2.10%	16.05.2020	26.05.2020
2	2.17%	12.11.2020	04.12.2020
3	2.24%	16.05.2021	-

Annuity No.	% of Completion Cost remaining to be paid on COD	Annuity Due Date	Annuity paid date
4	2.31%	12.11.2021	-
5	2.38%	16.05.2022	**-**
6	2.45%	12.11.2022	-
7	2.52%	16.05.2023	-
8	2.60%	12.11.2023	-
9	2.68%	16.05.2024	-
10	2.76%	12.11.2024	-
11	2.84%	16.05.2025	-
12	2.93%	12.11.2025	-
13	3.02%	16.05.2026	-
14	3.11%	12.11.2026	-
15	3.20%	16.05.2027	-
16	3.30%	12.11.2027	-
17	3.40%	16.05.2028	-
18	3.50%	12.11.2028	-
19	3.61%	16.05.2029	-
20	3.72%	12.11.2029	-
21	3.83%	16.05.2030	-
22	3.94%	12.11.2030	-
23	4.06%	16.05.2031	-
24	4.18%	12.11.2031	-
25	4.25%	16.05.2032	-
26	4.25%	12.11.2032	-
27	4.44%	16.05.2033	-
28	4.71%	12.11.2033	-
29	4.75%	16.05.2034	-
30	4.75%	12.11.2034	-

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
iii. carrying out preventive and periodic maintenance of the Project road;
iv. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

v. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
vi. Functioning of the lighting system;
vii. Functioning of the Patrolling System
viii. Functioning of rescue and medical aid services
ix. Ambulance as and when required
x. Functioning of the Project Facilities
xi. Administrative, Operational and Maintenance Base Camp
xii. Truck Lay byes
xiii. Pickup Bus stops / Bus Bays
xiv. protection of the environment and provision of equipment and materials therefor;
xv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xvi. complying with Safety Requirements in accordance with Article 18.

9.4 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.4.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.4.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.4.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute on service roads
2nd Periodic Maintenance	2033	Planned to execute on service roads

9.4.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sandstorms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction
c. Construction of Diversions
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.5 Review of Test Reports

9.5.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

As per Schedule K of the CA, Roughness value shall not exceed 2750 mm in a KM. As the riding quality is good, the Independent Engineer has not directed the Concessionaire to conduct the BI Test.

9.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 3.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operation Expenses	Total cost per year
2020	2.138	2.100		3.11	**7.35**
2021	2.202	2.163		3.21	**7.57**
2022	2.268	2.228		3.30	**7.80**
2023	2.336	2.295		3.40	**8.03**
2024	2.406	2.364		3.50	**8.27**
2025	2.479	2.435		3.61	**8.52**
2026	2.553	2.508		3.72	**8.78**
2027	2.629	2.583	29.70	3.83	**38.74**
2028	2.708	2.660		3.94	**9.31**
2029	2.790	2.740		4.06	**9.59**
2030	2.873	2.822		4.19	**9.88**
2031	2.959	2.907		4.31	**10.18**
2032	3.048	2.994		4.44	**10.48**
2033	3.140	3.084	34.95	4.57	**45.75**
2034	3.234	3.177		4.71	**11.12**
2035	2.108	2.071		3.07	**7.25**
Total	**41.87**	**41.13**	**64.65**	**60.99**	**208.64**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE-4**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. The Provisional Certificate copy given in **ANNEXURE-5.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the HAI are provided in **Annexure 7**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents

- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with

the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the Percentage of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

Increase in costs

If as a result of Change in Law, the Concessionaire suffers an increase in costs or reduction in net after-tax return or other financial burden, the aggregate financial effect of which exceeds the higher of Rs.2.20 Crore (Rupees two crore twenty lakhs) or 2%(two percent) of the total Annuity payments in any Accounting Year, the Concessionaire may so notify the Authority and propose amendment to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in increased costs, reduction in return or other financial burden as aforesaid. Upon notice by the Concessionaire, the Parties shall meet, as soon as reasonably practicable as but no later than 30 (Thirty) days from the date of notice and either agree on amendments to this Agreement or on any other mutually agreed arrangement.

Reduction in costs

If as a result of Change in Law, the Concessionaire benefits from a reduction in costs or increase in net after-tax return or other financial gains, the aggregate financial effect of which exceeds the higher of Rs.2.20 crore(Rupee two crore twenty Lakhs) or 2% (Two percent) of the total Annuity Payment in any Accounting year, the Authority may so notify the Concessionaire and propose amendments to this Agreement so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in Law resulting in decreased costs, increase in return or other financial gains as aforesaid. Upon notice by the Authority, the parties shall meet, as soon as reasonably practicable as but no later than 30 (thirty) days from the date of notice and either agree on such amendments to this Agreement or on any other mutually agreed arrangement.

CHAPTER 11. INSURANCE

11.1 Details of Insurance:

As per clause 26.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copy is given in **ANNEXURE 6.**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property	Remarks
			From	To		
Standard Fire & Special Perils Policy	The Oriental Insurance Co Ltd	171200/11/2021/ 230	18.11.2020	17.11.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier	Endorsement issued for change in policy period.
Fire Industrial All Risk Policy	The Oriental Insurance Co Ltd	171200/11/2021/ 229	18.11.2020	17.11.2021	Maintenance of Roads, Bridges	Endorsement issued for change in policy period.
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/ 48	25.9.2020	24.9.2021	Electronic Equipment installed in the Project road	
Employees Compensation Insurance	HDFC Ergo General Insurance Co Ltd	31142033700908 00000	24.3.2020	23.3.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project	

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

Toll Plaza is constructed at Km.35+200 and is operational. Bus bays and truck laybyes are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza, bus bay and truck lay bye locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 84-2014. The condition of sign boards &other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance scheduled in the year 2027 and 2033.

12.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times

Annexure 1 : Condition of Bridges/Underpass

S.No	Chainage	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	2.112	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
2	3.143	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
3	5.201	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
4	6.645	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
5	9.779	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
6	11.443	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
7	15.811	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
8	25.707	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
9	27.12	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
10	28.845	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
11	33.187	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
12	44.396	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
13	46.051	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
14	50.284	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
15	54.674	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
16	2.143	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
17	7.188	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
18	7.437	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
19	8.129	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
20	10.942	Minor bridge	Good	Good	Good	Fair	Good	Good	Fair
21	6.1	LVUP	Good	Good	Good	Fair	Good	Good	Fair
22	21.152	VUP	Good	Good	Good	Fair	Good	Good	Fair
23	29.751	VUP	Good	Good	Good	-	Good	Good	Fair

S.No	Chainage	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
24	42.016	PUP	Good	Good	Good	-	Good	Good	Fair
25	48.873	VUP	Good	Good	Good	-	Good	Good	Fair
26	50.524	LVUP	Good	Good	Good	-	Good	Good	Fair
27	55.074	LVUP	Good	Good	Good	-	Good	Good	Fair
28	1.764	PUP	Good	Good	Good	-	Good	Good	Fair
29	9.661	PUP	Good	Good	Good	-	Good	Good	Fair
30	10.305	VUP	Good	Good	Good	-	Good	Good	Fair
31	5.551	Over Pass	Good	Good	Good	-	Good	Good	Fair

Annexure 2: Condition of Culverts

Condition of Box /Slab Culverts

S. No.	Chainage(Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	10+17	Good	Good	Good	Good	Good
2	16+84	Good	Good	Good	Good	Good
3	20+25	Good	Good	Good	Good	Good
4	36+33	Good	Good	Good	Good	Good
5	39+30	Good	Good	Good	Good	Good
6	39+80	Good	Good	Good	Good	Good
7	40+92	Good	Good	Good	Good	Good
8	42+10	Good	Good	Good	Good	Good
9	1+462	Good	Good	Good	Good	Good
10	3+838	Good	Good	Good	Good	Good
11	4+007	Good	Good	Good	Good	Good
12	4+215	Good	Good	Good	Good	Good
13	5+113	Good	Good	Good	Good	Good
14	6+846	Good	Good	Good	Good	Good
15	6+944	Good	Good	Good	Good	Good
16	6+955	Good	Good	Good	Good	Good
17	7+903	Good	Good	Good	Good	Good

Hume Pipe Culverts

S. No	Chainage (Km)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	1+270	Good	Good	Good	Fair
2	1+580	Good	Good	Good	Fair
3	1+870	Good	Good	Good	Fair
4	2+280	Good	Good	Good	Fair
5	3+997	Good	Good	Good	Fair
6	5+590	Good	Good	Good	Fair
7	8+410	Good	Good	Good	Fair
8	8+790	Good	Good	Good	Fair
9	10+070	Good	Good	Good	Fair
10	10+900	Good	Good	Good	Good
11	12+240	Good	Good	Good	Good
12	13+300	Good	Good	Good	Good
13	13+810	Good	Good	Good	Good
14	14+430	Good	Good	Good	Fair
15	17+810	Good	Good	Good	Fair
16	18+830	Good	Good	Good	Good
17	19+890	Good	Good	Good	Good

S. No	Chainage (Km)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
18	20+430	Good	Good	Good	Good
19	20+680	Good	Good	Good	Good
20	21+040	Good	Good	Good	Good
21	21+730	Good	Good	Good	Good
22	22+450	Good	Good	Good	Good
23	22+600	Good	Good	Good	Good
24	23+080	Good	Good	Good	Good
25	24+510	Good	Good	Good	Good
26	25+080	Good	Good	Good	Good
27	26+550	Good	Good	Good	Good
28	27+910	Good	Good	Good	Good
29	28+000	Good	Good	Good	Good
30	29+440	Good	Good	Good	Fair
31	30+080	Good	Good	Good	Fair
32	30+500	Good	Good	Good	Good
33	32+360	Good	Good	Good	Not visible
34	34+720	Good	Good	Good	Good
35	35+690	Good	Good	Good	Good
36	36+400	Good	Good	Good	Fair
37	36+750	Good	Good	Good	Fair
38	37+140	Good	Good	Good	Fair
39	37+480	Good	Good	Good	Good
40	38+980	Good	Good	Good	Good
41	39+260	Good	Good	Good	Good
42	40+380	Good	Good	Good	Fair
43	41+250	Good	Good	Good	Fair
44	41+770	Good	Good	Good	Fair
45	42+230	Good	Good	Good	Good
46	42+410	Good	Good	Good	Good
47	42+720	Good	Fair	Good	Good
48	43+040	Good	Good	Good	Good
49	43+580	Good	Fair	Good	Good
50	44+850	Good	Good	Good	Good
51	45+020	Good	Good	Good	Good
52	45+490	Good	Good	Good	Good
53	46+780	Good	Good	Good	Good
54	47+090	Good	Good	Good	Good
55	48+160	Good	Good	Good	Good
56	48+400	Good	Good	Good	Good

S. No	Chainage (Km)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
57	49+110	Good	Good	Good	Good
58	49+930	Good	Good	Good	Good
59	51+330	Good	Good	Good	Good
60	51+520	Good	Good	Good	Good
61	51+900	Good	Good	Good	Good
62	52+310	Good	Good	Good	Good
63	52+780	Good	Good	Good	Good
64	53+060	Good	Good	Good	Good
65	54+160	Good	Good	Good	Good
66	55+590	Good	Good	Good	Good
67	0+200(Bypass)	Good	Good	Good	Good
68	4+533	Good	Good	Good	Good
69	4+663	Good	Good	Good	Good
70	2+300	Good	Good	Good	Good
71	2+500	Good	Good	Good	Good
72	11+328	Good	Good	Good	Good

Annexure 3: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageways& Shoulders Rural area	Monthly	Km	58.003	12	4	350	9,74,450	04 Nos of Labour
2	General Cleaning in carriageway& Shoulders Urban area	Twice in a month	kms	9.425	24	4	350	3,16,680	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	67.428	52	1	1939	67,98,630	01 Nos of Labour
4	Watering in Avenue plants	Once in Week	Km	58.003	52	58	1939	58,48,326	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	58.003	12	12	21000	2,52,000	02 Nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km	47.1996	2	10	350	3,30,397	10 Nos of labour per KM (70% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	150	2	3	650	5,85,000	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	67.428	4	2	350	1,88,798	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	34	12	2	350	2,85,600	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	3.00	12	60	350	7,56,000	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	27	2	4	350	75,600	04 Nos of Labour for removal of vegetation/Structure
13	Carriageway Maintenance (Pot Holes etc)	Yearly	Sq.m	15	1	550	124	10,23,000	2.5% of CW area considered 22.0x1000x2.5%
								1,74,34,482	
	EQUIPMENT SUPPLY							-	

1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos		12	1	400000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	67.428	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12	2	250000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	67.428	12	3	12000	40,457	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos		12		4,00,000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	67.428	4	4	2500	44,952	Per Supervisor
8	Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month
9	Toll plaza AMC	Yearly	Nos		12	1	100000	12,00,000	100000/month
								28,85,409	
1	Patrolling vehicle	Monthly	Nos	12		1	300000	300000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Ambulance	Monthly	Nos	12		1	240000	240000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Tow away trucks and Crane	Monthly	Nos	12		1	400000	400000	(2000000 is the cost of vehicle,

									considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
								10,60,000	
							Routine Maintenance Cost per year	**2,13,79,890.87**	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	16066.1655	516	82,90,141	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	1	1	212	168	35,616	2% of Flexible Pavement (changed quantities to only Service road portion)
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	2022.84	225	13,65,417	10% of total Shoulder length throughout the project
4	Sign Board	Half yearly	Nos	1	2	98	4000	7,84,000	5 % of Total sign boards per Half year (of 1950 Nos)
5	MBCB	Monthly	RMT			1297.5	2400	31,14,000	5% of Total qty per year - (considered 2400 per RMT)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	67.428	4	17	2250	1,53,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km		4			-	10 % of total ROW fencing per year

8	Kerb	Yearly	Km	67.428	1	2697.1	250	6,74,280	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	1517.13	4000	60,68,520	Considered 1 % of the total volume per year
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	Rmt	4318		129.528	3985	5,16,169	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**2,10,01,143**	

Operational Expenses

S.No.	PARTICULARS	Amount
1	**Man Power**	₹ 96,00,000
2	**Fuel for Generator & Vehicles**	₹ 99,72,000
3	**Electricity**	₹ 92,40,000
4	**Stationary**	₹ 1,00,000
5	**Replacement of Electrical Fixtures**	₹ 16,28,407
6	**Refurbishment of Toll Plaza Equipment**	₹ 6,00,000
	Total Amount	**₹ 3,11,40,407**

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	3,98,797.50	14.00	55,83,165	3,98,797.50	14.00	55,83,165
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design	Cum	15,951.90	7,682.00	12,25,42,496	15,951.90	7,682.00	12,25,42,496

S. No.	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	conforming the IRC -111 and IRC 37.							
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	1,01,142.00	250.00	2,52,85,500	1,01,142.00	250.00	2,52,85,500
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	6,31,305.25	130.00	8,20,69,683	6,31,305.25	130.00	8,20,69,683
5	Earthen shoulder @ service roads	cum	1,981.00	250.00	4,95,250	1,981.00	250.00	4,95,250
	Total				**23,59,76,093**	-	-	**23,59,76,093**
	Junctions, Traffic Signs Marking and Other Appurtenances			-		-	-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		19,810.00	380.00	75,27,800
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	1,485.75	516.00	7,66,647	1,485.75	516.00	7,66,647
3	Road Studs	Nos	1,650.00	750.00	12,37,500	1,650.00	750.00	12,37,500
	Total			-	**20,04,147**	-	-	**95,31,947**
	Grand Total				**23,79,80,240**	-		**24,55,08,040**

ABSTRACT FOR MAJOR MAINTENANCE

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	18-Nov-19					
1st Major Maintenance - Highway	18-May-27	23,79,80,240	7.50	3.0%	**29,15,25,794**	**29.15**
1st Major Maintenance - Structures	18-May-27	45,24,680	7.50	3.0%	**55,42,733**	**0.55**
2nd Major Maintenance - Highways	11-May-32	24,55,08,040	12.50	3.0%	**33,75,73,555**	**33.76**
2nd Major Maintenance - Structures	11-May-32	86,78,356	12.50	3.0%	**1,19,32,740**	**1.19**
				Total	**₹ 64,65,74,823**	**64.65**

Annexure 4: Letter of Award

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

Duplicate

NHAI/Tech/01/EFC/Tuljapur-Ausa/2014/MAH/95308

Date: 17.02.2017

To

M/s Dilip Buildcon Limited,
Plot No-5 Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal - 462016 (MP)
0755-4029999
Email. db@dilipbuildcon.co.in

Sub: Four Laning of Tuljapur - Ausa (including Tuljapur Bypass) Section of NH-361 from km 0.000 to km 55.835 in the State of Maharashtra on Hybrid Annuity Mode under NHDP Phase IV - **Letter of Award - Reg.**

Ref: (i) Your RFP application submitted on 09.01.2017.
(ii) Financial proposal opened on 25.01.2017.

Sir,

With reference to NHAI's Request for Proposal for **"Four Laning of Tuljapur - Ausa (including Tuljapur Bypass) Section of NH-361 from km 0.000 to km 55.835 in the State of Maharashtra on Hybrid Annuity Mode under NHDP Phase IV"** and considering your proposal in this regard submitted on 09.01.2017 cited under ref (i), NHAI hereby accepts your proposal quoting Bid Project Cost of Rs. **911.07** Cr. (Rupees Nine Hundred Eleven Crores Seven Lakhs Only) and First Year O&M Cost of Rs. **3.00 Cr.** (Rupees Three Crores Only), as included in Appendix - 1B of your Bid Document, and declares you as the "Selected Bidder" as per the provisions of the RFP Documents.

2. In accordance with the clause 3.8.4 of the RFP document, you are requested to sign the duplicate copy of the LOA and return the same as your acknowledgement within 7 (Seven) days of the receipt of the LOA. Thereafter, you are required to execute the Concession Agreement within 45 (Forty Five) days from the date of issue of LOA as specified in Clause 1.3 of RFP.

3. Further, as per RFP documents, you are required to incorporate a Special Purpose Vehicle solely for the purpose of domiciling the project (The "Concessionaire"). The Concessionaire for due and faithful performance of its obligations during the Concession Period shall furnish a Performance Security by way of irrevocable and unconditional Bank Guarantee of **Rs. 45.56** Crore (Rupees Forty Five Crores and Fifty Six Lakhs only) within the period of the 30 days from the date of signing of the Concession Agreement. Till the time the Concessionaire provides NHAI with the Performance Security, the Bid Security shall remain in full force and effect (refer clause 4.1.2 and Clause of Article 9 of DCA).

4. You are required to comply with all the terms and conditions set forth in the RFP documents. In case of any default on your part, you shall be liable for action as stated in the Bid Documents.

Yours faithfully

(Ashish Asati)
General Manager (Tech)
(Maharashtra Division)

Annexure 5: Provisional Certificate

LION ENGINEERING CONSULTANTS
"Contributing to Building the Infrastructure of the Nation"

Letter No. LION/IE-0317/2019/NHAI/DBL-TA/7385 **Date: 18.11.2019**

To,
The Authorized Signatory,
DBL Tuljapur Ausa Highways Limited,
Reg. Office: Plot No.5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal-462016 (MP).
Email- db@dilipbuildcon.co.in, tuljapurbillingplanning@dilipbuildcon.co

Sub : Four Laning of Tuljapur -Ausa (Including Tuljapur Bypass| Section of NH - 361 from km 0.000 to km 55.835 (Existing Chainage: km 416.000 to km 470.000) under NHDP Phase - IV in the State of Maharashtra on Hybrid Annuity Mode.
Issuance of Provisional Completion Certificate under Clause 14.3 of Concession Agreement. Reg.

Ref:
1. Concession Agreement dtd: 01.05.2017.
2. Concessionaire Lr. No. DBLTAHL/SPV/2019/1198; dtd: 25.07.2019.
3. Concessionaire Lr. No. DBLTAHL/SPV/2019/1209; dtd: 01.08.2019.
4. Inspection of IE dated. 02.08.2019 & 06.08.2019.
5. IE letter no. LION/IE0117/2019/NHAI-DBL-TA/6876; dtd: 14.08.2019.
6. Concessionaire Lr. No. DBLTAHL/SPV/2019/1254; dtd: 21.08.2019.
7. Inspection of IE dated 22.08.2019.
8. Concessionaire Lr. No. DBLTAHL/SPV/2019/1266; dtd: 23.08.2019.
9. This office Lr. No. LION/IE0117/2019/NHAI/DBL-TA/6913; dtd: 23.08.2019.
10. RO-Nagpur Lr. No. NHAI/RO-NAG/4/7/Tuljapur-Ausa/PCOD/2019/1427; dtd: 29.08.2019.
11. This office Lr. No. LION/IE0117/2019/NHAI-DBL-TA/7224; dtd: 17.10.2019
12. Concessionaire letter no. DBLTAHL/SPV/2019/1354; dtd: 20.10.2019
13. Concessionaire letter no. DBLTAHL/SPV/2019/1373; dtd: 31.10.2019
14. IE Inspection dtd: 11.10.2019 & 13.10.2019.
15. IE Inspection dtd: 14.11.2019 to 16.11.2019.

Dear Sir,

The Concession Agreement for the above project was signed between M/s DBL Tuljapur Ausa Highways Limited (hereinafter referred as "Concessionaire") and National Highways Authority of India (hereinafter referred as "Authority") on 01.05.2017 and the Appointed Date was declared as 22.11.2017.

2. As per clause 14.3.2 of the Concessionaire Agreement wherein mentioned "The *Parties hereto expressly agree that a Provisional Certificate under this clause 14.3 may, upon request of the Concessionaire to this effect, be issued for operating part of the Project, if the Concessionaire has completed construction of 100% of the Site made available to the Concessionaire up to 182 days from the Appointed Date. Upon issue of such Provisional Certificate, the provisions of Article 15 shall apply to such completed*

Page 1 of 5

part, and the rights and obligations of the Concessionaire for and in respect of such completed part of the Project shall be construed accordingly".

3. Hence, in view of above and according to clause 14.3.2 of the CA, the status of project work in accordance to schedule-B, C & D of CA is herein under:

S.No.	Section (km)		Side	Length (km)	Remark
	From	To			
Existing Carriage Way					
1	0+000	5+460	BHS	5.460	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
2	6+500	54+820	BHS	48.320	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
3	55+350	55+835	BHS	0.485	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
4-lane operational length (km) considered for Pre-COD i.e. (1)+(2)+(3)				**54.265**	
Total length of Project Highway (km)				67.428	

4. As per NHAI Policy circular dated 21.12.2015, the Independent Engineer vide letter no. 6913; dtd: 23.08.2019 has submitted the proposal regarding concurrence for issuance of Provisional Completion Certificate under clause 14.3 of the Concession Agreement.

5. Further, the RO-Nagpur vide their letter no 1427; dtd: 29.08.2019 has issued requisite concurrence with instructions to Independent Engineer to assure followings before issuance of provisional certification:
   i. The following item including List-C shall be completed before issuance of PCOD:
      a. Metal Beam Crash Barrier.
      b. New Jersey Crash Barrier.
      c. Casting of curbs including painting.
      d. Finishing work around Toll Booths.
      e. Road Marking and sign Boards.

6. Furthermore, the Concessionaire vide letter no. 1354; dtd: 20.10.2019, 1373; dtd: 31.10.2019 has confirmed compliance of pending works and requested for issuance of provisional completion certificate in pursuant to article 14 of CA. In this continuation, the Independent Engineer has inspected project highway on 14.11.2019 to 16.11.2019 and observed that all the pending works are now satisfactorily completed by the Concessionaire.

7. In view of above, the Independent Engineer is of opinion that you are now eligible for issuance of provisional completion certification in accordance with article 14 of CA. *Hence, the Independent Engineer is herewith issuing* ***Provisional Completion Certificate*** *(enclosed in* ***Appendix-I****) in pursuant to clause 14.3 of the Concession Agreement along with followings:*
   a. The Project Highway has been constructed as per scope defined under Schedule B & C, in conformity with the technical specifications and standards set forth in Schedule-D of the Concession Agreement. The detailed summary against each item of the Schedule B & C is shown in ***Annexure-I***. The List of minor outstanding works of Pre-COD section (forming "PUNCH LIST-A") is attached as ***Appendix-II***. As per clause 14.4.1 of the Concession Agreement, the works in PUNCH LIST-A

BHOPAL

Page 2 of 5

Annexure 6: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:36:20 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/46**	**Prev Policy No**	:
Cover Note No	: ER1700203541	Cover Note Dt	: 25/09/2020
Insured's Code	: 101327032	Issuing Office Code	: 171200
Insured's Name	: DBL Tuljapur Ausa Highways Pvt Ltd (GSTIN: 27AAGCD0953Q1Z6)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P.	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / ovni.sheth@unisoninsurance.net OSMANABAD 413601	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,390007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 25/09/2020 TO MIDNIGHT OF 24/09/2021

Collection No & Dt : DC_I_IND 3214000997 - 07/10/2020 GST INVOICE NO :2419552827 UIN :0

Gross Premium : 29,261 GST : 5,267 Stamp Duty : 1 Total : 34,528

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 5,85,22,422

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Tuljapur to Ausa

MAHARASHTRA - 413601

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		5,85,22,422

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 07/10/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	: 171200/11/2021/229	Prev Policy No	: 171200/11/2020/441
Cover Note No	: 170000171202O	Cover Note Dt	: 22/11/2020
Insured's Name	: 101327032 - DBL Tuljapur Ausa Highways Pvt Ltd (GSTIN: 27AAGCD0953Q1Z6)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P.	Address	: 1st FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
	OSMANABAD 413601		
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 22/11/2020 TO MIDNIGHT OF 21/11/2021

Collection No & Dt : DC_I_IND 3214001192 - 30/11/2020 GST INVOICE NO :2419662554 UIN :0

Gross Premium : 53,41,090 GST : 9,61,396 Stamp Duty : .5 Total : 63,02,486

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	Go Digit General Insurance Limited	20.00
3	BAJAJ ALLIINZ GEN INSURANCE	20.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Maintenance of Roads, Bridges
Four Laning of Tuljapur-Ausa Section of NH-361 From Km.0.000 to Km. 55.835 (Existing chainage Km.416.000 to Km470.000) under NHDP Phase IV in the state of Maharashtra on Hybrid Annuity Mode

Deductible :

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Bridges		135,16,61,142
Roads		426,71,49,370

Cover Wise Details	Sum Insured	Premium
Fire Basic Cover	561,88,10,512	30,90,345.78

Place :
Date : 26/11/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

This Document is Digitally Signed

Signer: ATUL JEHAN
Date: Tue, Dec 1, 2020 10:09:30 IST
Location: NOIDA
Reason: Signing Policy MT DCL

STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	: 171200/11/2021/230	Prev Policy No	: 171200/11/2020/440
Cover Note No	: -	Cover Note Dt	:
Insured's Name	: 101327032 - DBL Tuljapur Ausa Highways Pvt Ltd (GSTIN: 27AAGCD0953Q1Z6)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P. OSMANABAD 413601	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address Tel/Fax/Email	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007

Period of Insurance : FROM 00:00 ON 30/11/2020 TO MIDNIGHT OF 29/11/2021

Collection No & Dt : DC_I_INDCSH 3214001193 - 30/11/2020 GST INVOICE NO :2419664478 UIN :0

Gross Premium : 7,04,776 GST : 1,26,860 Stamp Duty : 5 Total : 8,31,636

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	20.00
3	Go Digit General Insurance Limited	20.00

RISK DETAILS

1 Location of the Risk : Four Laning of Tuljapur-Ausa Section of NH-361 From Km.0.000 to Km. 55.835 (Existing chainage Km.416.000 to Km470.000) under NHDP Phase IV in the state of Maharashtra on Hybrid Annuity Mode.

MAHARASHTRA
OSMANABAD
413601
OSMANABAD

Risk Description : Roads

SCHEDULE OF PREMIUM

TOTAL PREMIUM	7,04,776.00
ADD :GST	1,26,860.00

Place :
Date : 30/11/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule). The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 3

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

March 26, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203370090800000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils .

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Rasgotra

Authorised Signatory

3114203370090800000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203370090800000 **Employees Compensation Insurance**

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	26/03/2020

Period of Insurance	From Date & Time	24/03/2020 00:01 AM	To Date & Time	23/03/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹ Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203370090800000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117
Registered & Corporate Office: | Customer Service Address: | Toll Free Number: 1800 2700 700

HDFC ERGO General Insurance Company Limited

HDFC ERGO
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Details of Employees Covered

Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment
Road Paving, Tarring and Road Making-Road Paving, Tarring and Road Making-All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled, Unskilled, Engineers, Supervisors, Managers, Daily Labour Etc	200	48000000.00	Four Laning of Tuljapur-Ausa (Including Tuljapur Bypass) Section of NH - 361 from km 0.000 to km 55.835 (Existing Chainage: km 416.000 to km 470.000) under NHDP Phase - IV in the State of Maharashtra on Hybrid Annuity Mode

Premium Details (₹)

Basic Premium	**72111.00**
Integrated Tax 18%	**12980.00**
Total Premium	**85091.00**

GST Registration No: 24AABCL5045N1ZE.The contract will be cancelled ab intio in case; the consideration under the policy is not realized.

List of Endorsements

Endt No	Description	Effective Date
EC_12_0003	Contractors Employees	24 March 2020
EC_12_0001	Medical Expenses	24 March 2020
WC-02-0008	Tariff Endorsement	24 March 2020
EC-13-0006	Insurance Contract	24 March 2020
EC-13-0005	Policy Schedule	24 March 2020
	Warranted that there are no known losses and /or circumstances leading to losses (except for the claims and / or circumstances already reported to HDFC ERGO General Insurance Co. Ltd. This policy document is issued basis the information provided though request for quotation and/ or unsigned proposal form and / or other details provided by the insured / insurance intermediary and/ or though discussions and our final quote sheet issued to you enabling the insurer to decide the terms and conditions of insurance contract. Your are requested to inform us within 15 days of receipt of the policy	24 March 2020

3114203370090800000 Page 3 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V022011 2 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

Annexure 7: Change of Scope

S No.	COS proposed Details	Date of first submission to IE	Current status	COS Amount	Expected/Actual Date of Approval	Status of Work at Site
1	Additional service road at VOP location (Bypass)	30.05.2018	COS with Financial implication recommended to Authority vide IE Lr NO.6556 dtd 26.06.2019	0.99 Cr	In progress	In progress
2	Change in Span Arrangement of minor bridge at Ch.7+437 and 8+129	18.05.2018	COS with Financial implication recommended to Authority vide IE Lr NO.6556 dtd 26.06.2019	2.19 Cr	In progress	Completed
3	Installation and implementation of ETC lane in each Toll lane and implementation of Median speed weigh in Motion with bending plate technology as per NHAI circular	31.01.2019	COS with Financial implication recommended to Authority vide IE Lr NO.6560 dtd 26.06.2019	0.21 Cr	In progress	ETC is installed in all lines and 6 lines were operated by ETC Way in motion is installed but not in operational condition
4	Highway Nest (mini) with toilet blocks as per NHAI circular	15.12.2018	COS with Financial implication recommended to Authority vide IE Lr NO.6569 dtd 26.06.2019	1.35 Cr	COS approved by Authority	Under construction

S No.	COS proposed Details	Date of first submission to IE	Current status	COS Amount	Expected/Actual Date of Approval	Status of Work at Site
5	Provisional of Utility crossing pipes (17 Nos) of Tuljapur Bypass	09.02.2019	COS with Financial implication recommended to Authority vide IE Lr NO.6556 dtd 26.06.2019	0.41 Cr	In Progress	Completed
	Total COS Amount (Excl. GST) – 5.15 Cr					

Annexure 8: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Four Laning of Wardha-Butibori section of NH-361 from Km.465.500 to Km.524.690 (design length 59.190 Km) under NH(O) in the State of Maharashtra on Hybrid Annuity Mode

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Laning of Wardha-Butibori section of NH-361 from Km.465.500 to Km.524.690 (design length 59.190 Km) under NH(O) in the State of Maharashtra on Hybrid Annuity Mode

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Wardha-Butibori	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED (herein after referred to as the "**Concessionaire**") had augmented the existing two lane road "Wardha Butibori section of NH361 in the State of Maharashtra, in accordance with the provisions of the Concession Agreement executed with National Highways Authority of India (herein after referred to as the "**Authority**") on 9th June, 2017 on Design, Build, Operate and Transfer (DBOT) on Hybrid Annuity Mode (HAM).

The Project Highway starts at Km. 465+500 (Near Wardha) and ends at Km. 524+690 (at Butibori) on NH 361. It passes through settlements namely Salod, Seloo and Kelzar. Project location map is provided at **Figure 1.1**.

Figure 1.1: Project Location Map

SHREM INFRAVENTURE PRIVATE LIMITED (SIPL) acquired DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED vide agreement dated 26.03.2018.

SHREM FINANCIAL PRIVATE LIMITED (SFPL). appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments. etc.

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Four Laning of Wardha-Butibori Section of NH- 361 From Km. 465+500 to Km. 524+690 (Design Length Kms. 59.190) under NH (O) in the state of Maharashtra on Hybrid Annuity Mode.
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	28.03.2017
7	Date of Agreement	09.06.2017
8	Design Length as per Schedule B of CA	59.190 Kms.
9	Project Lane Configuration	Four Lane
10	EPC Cost	Rs. 796.50Cr.
11	BPC Cost	Rs. 1,065.51 Cr.
12	Nature of contract	Hybrid Annuity Mode
13	Toll collected by	Authority
14	Operation Period	15 years from the Commercial Operation Date (**COD**)
15	Appointed date	30.11.2017
16	Concession End Date	19.11.2034
17	Construction Period	910 days from the Appointed Date
18	Schedule Completion Date	27.05.2020
19	Date of issuance of Provisional Certificate (COD)	20.11.2019
20	Bonus on early completion	Applicable as per Cl.23.5 of CA
21	Date of issuance of Completion Certificate	---
22	Annuity Amount	As per Cl.23.4 and Cl.23.6.3 of CA
23	Total Number of Annuities payable	30 Nos.
24	First Annuity Payment Date	20.05.2020
25	Total Number of Annuity Payments received as on date.	2 No.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of THE Concession Agreement (**CA**) including Change of scope (COS) are listed in the following **Table 2.1.**

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As COS	As per Site
1	Total Length of Main Carriageway 4 Lane with Rigid Pavement	59.190 Kms.		59.190 Kms.
2	Total length of Service Roads	8.800 Kms.		8.80 Kms.
3	Total length of Slip Roads	19.100 Kms.		19.10 Kms.
4	Toll Plazas	1 No.		1 No.
5	Bus Bays with Bus Shelters	28 Nos.		28 Nos.
6	Truck Lay Bays	2 Nos.		2 Nos.
7	Rest Areas	Nil		Nil
8	Major Junctions	Nil		9 Nos.*
9	Minor Junctions	26 Nos.		30 Nos.*
10	Vehicular underpasses	9 Nos.		9 Nos.
11	Light Vehicular underpasses	2 Nos.		2 Nos.
12	Pedestrian underpasses	1 No.		1 No.
13	Grade Separators	1 No.		1 No.
14	Major Bridges	2 Nos.		2 Nos.
15	Minor Bridges	15 Nos.	+1 Nos.	16 Nos.
16	ROBs	1 No.		1 No.
17	RUBs	1 No.		1 No.
18	Hume Pipe Culverts	65 Nos.		65 Nos.
19	Box / Slab Culverts	27Nos.	+1 No.	28 Nos.

*As per site requirement 9Nos. of Major junctions and 4Nos. of additional Minor junctions are developed

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of the CA during the Construction.

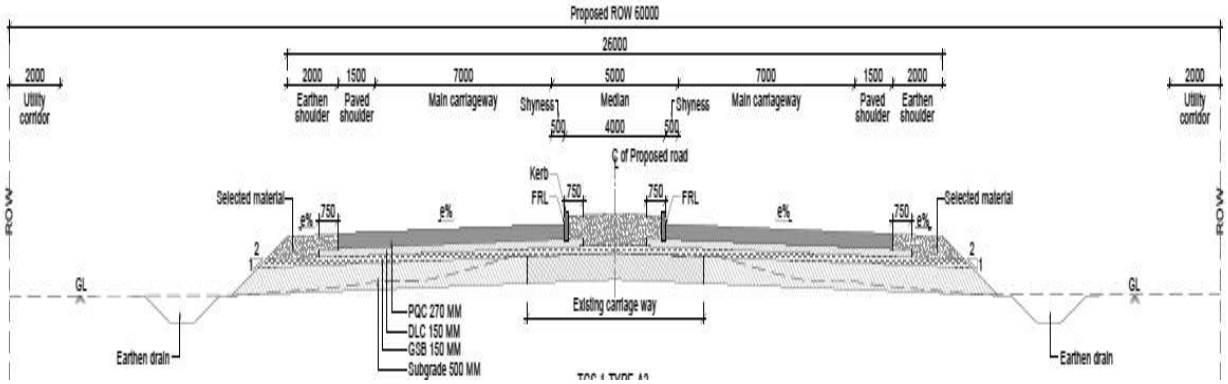

Figure 2.1: TCS-1-TYPE-A3 TCS of 4-Laning By Concentric Widening with 4.0m Raised Median

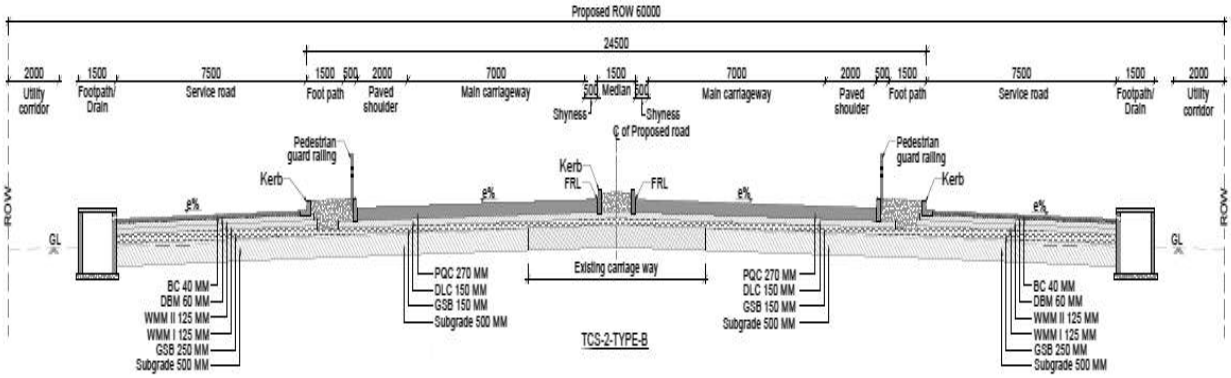

Figure 2.2: TCS-2-TYPE-B Built - Up Section - Plain /Rolling Terrain with Service Roads

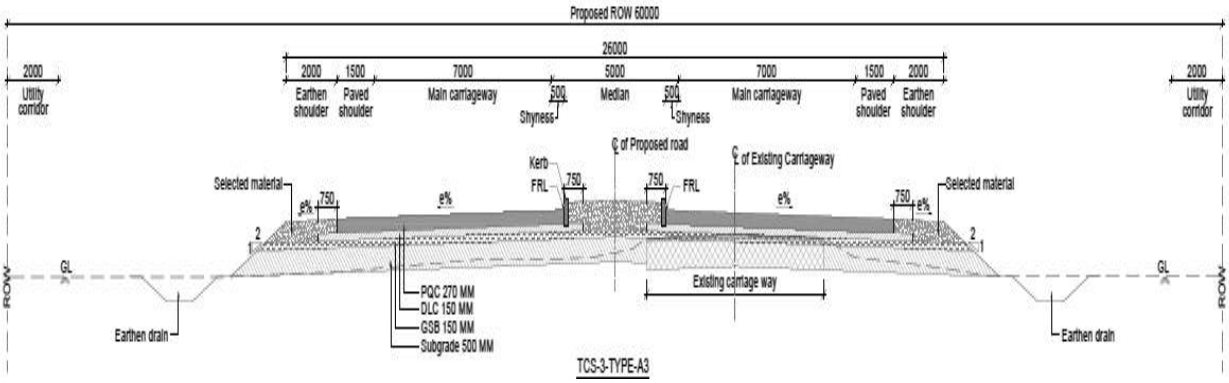

Figure 2.3: TCS-3-TYPE-A3 TCS of 4-Laning By Eccentric Widening (LHS) with 4.0m Raised Median

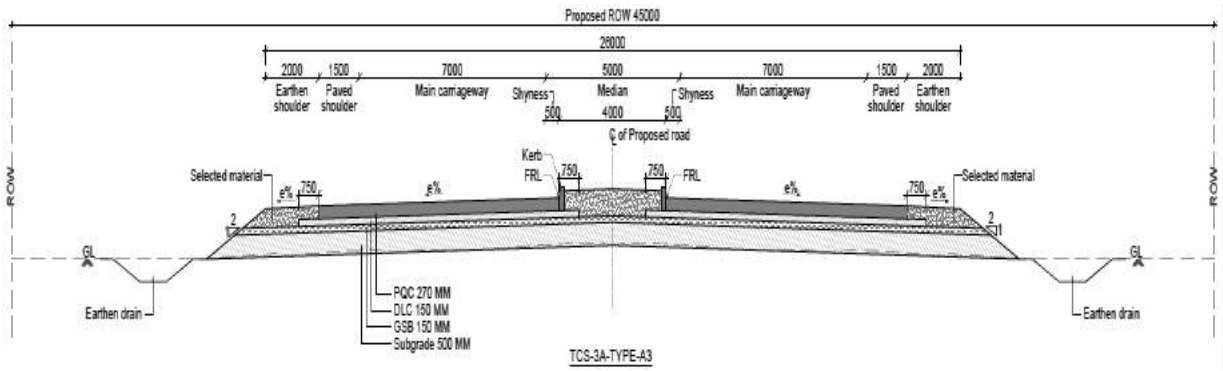

Figure 2.4: TCS-3A-TYPE-A3 TCS Of Reserve Forest Area with 45mt ROW

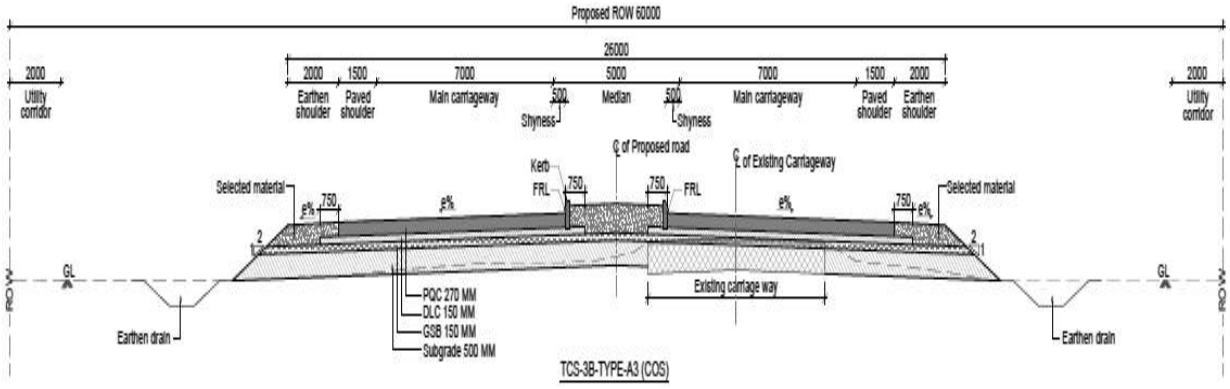

Figure 2.5: TCS-3B-TYPE-A3 (COS) TCS of 4-Laning By Eccentric Widening (LHS) with 4.0m Raised Median

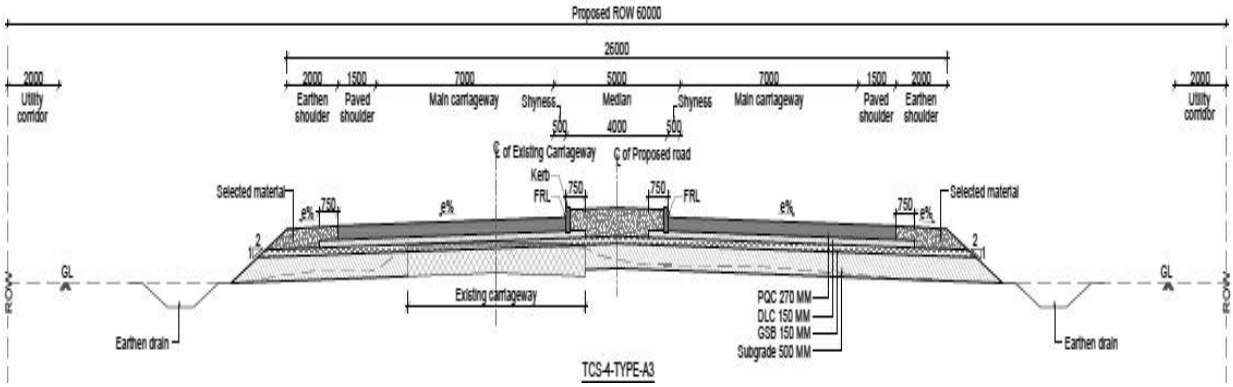

Figure 2.6: TCS-4-TYPE-A3 TCS of 4-Laning By Eccentric Widening (RHS) with 4.0m Raised Median

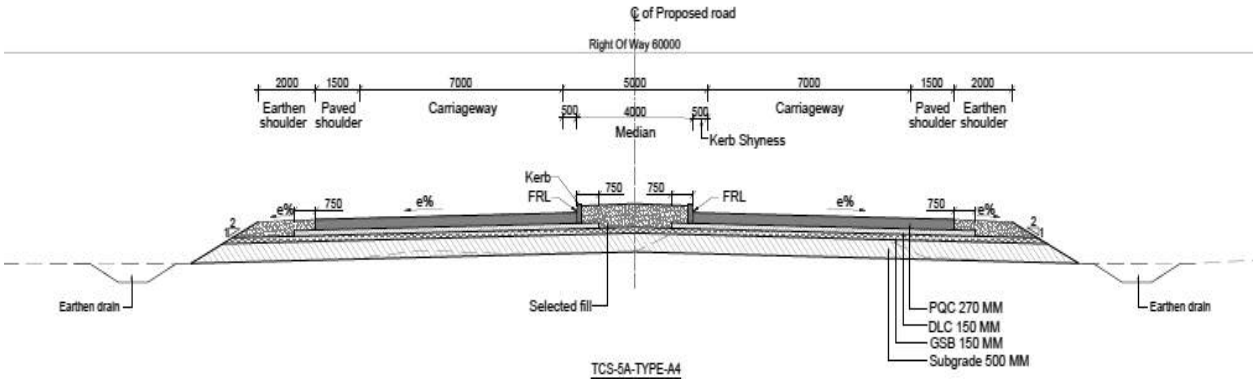

Figure 2.7: TCS-5A-TYPE-A4 Four Lane For Bypass and Re-Alignment

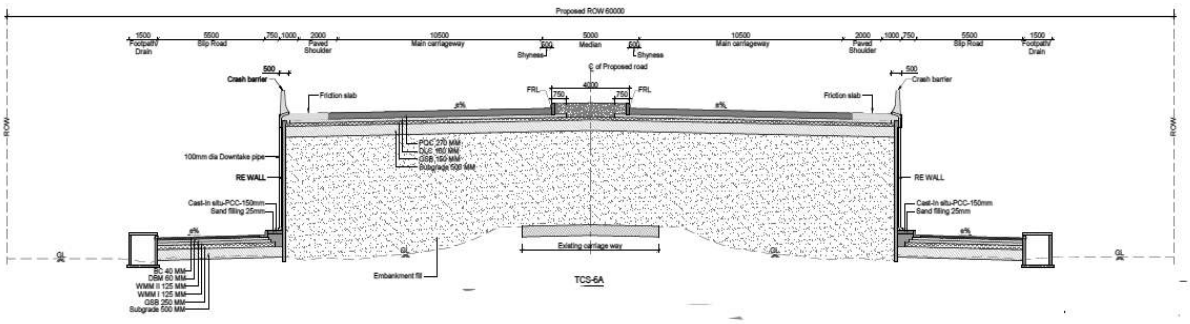

Figure 2.8: TCS-6A Typical Four Lane Underpass Cross Section with Slip Roads In The Existing Road

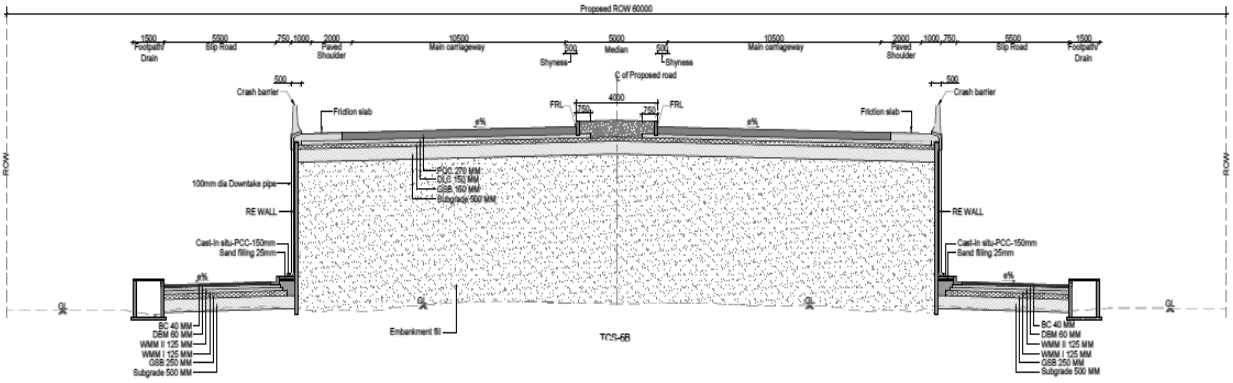

Figure 2.9: TCS-6B Typical Four Lane Underpass Cross Section with Slip Roads In Bypass & Realignment

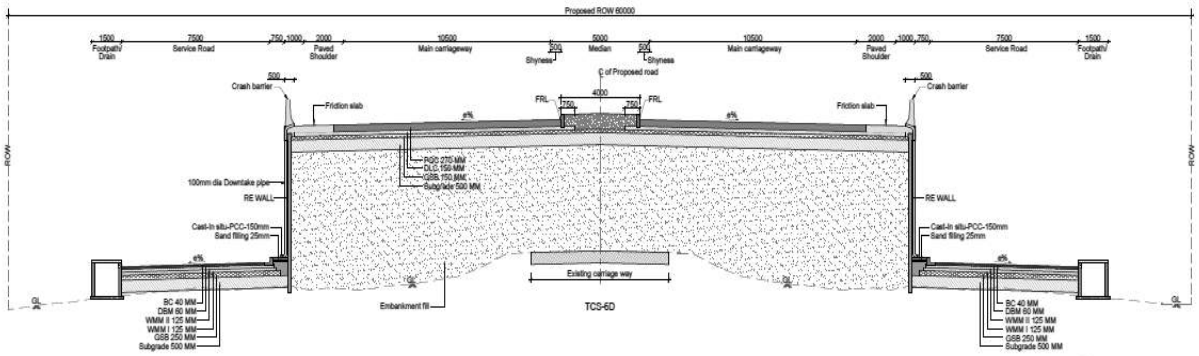

Figure 2.10: TCS-6D Typical Four Lane Underpass Cross Section with Service Roads

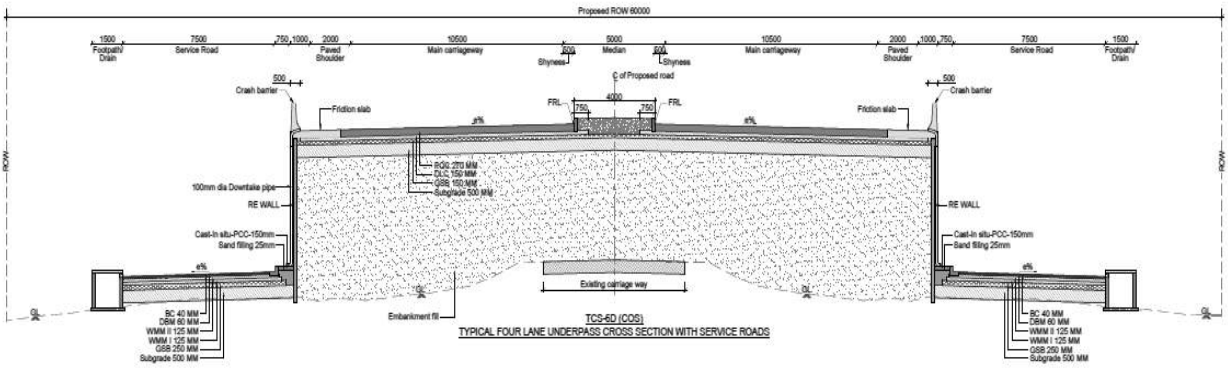

Figure 2.11: TCS-6D (COS) Typical Four Lane Underpass Cross Section with Service Roads

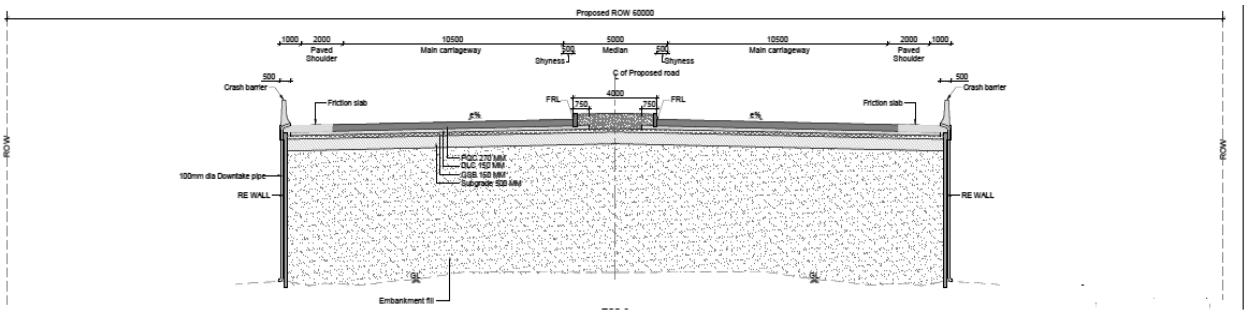

Figure 2.12: TCS-8 TCS Of Approach To Grade Separated Structure (Main Ramp)

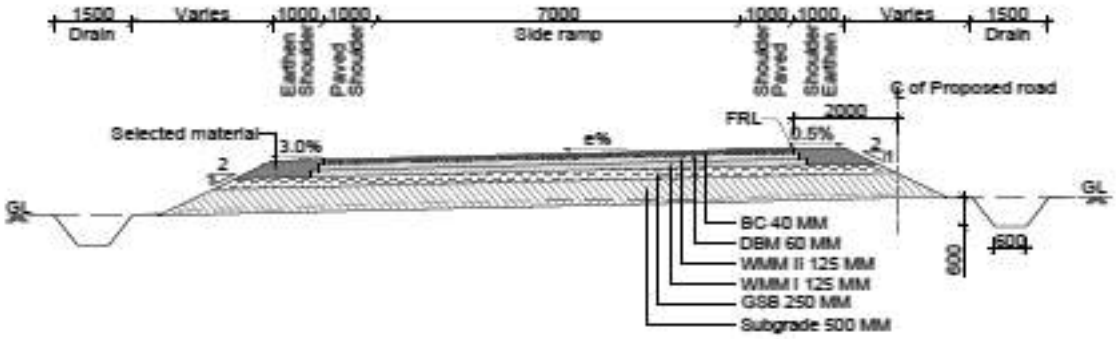

Figure 2.13: TCS Of Ramp-2 (80R) 00+000 To 00+310 Ramp-2

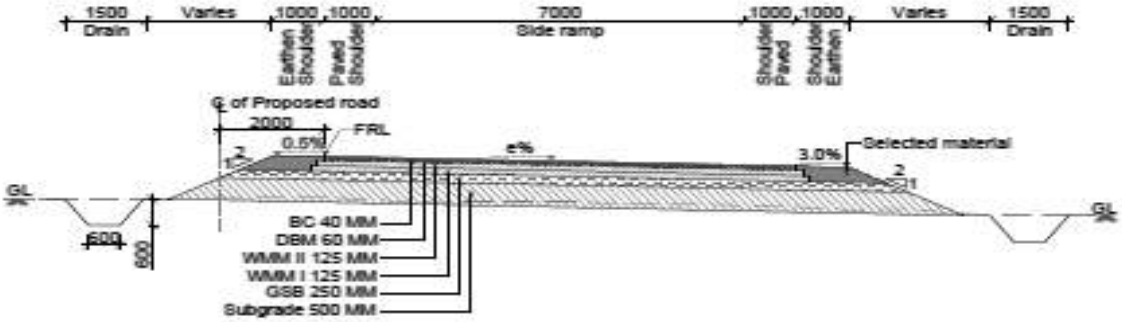

Figure 2.14: TCS Of Loop-2(80R) 00+250 To 00+534 Loop-2

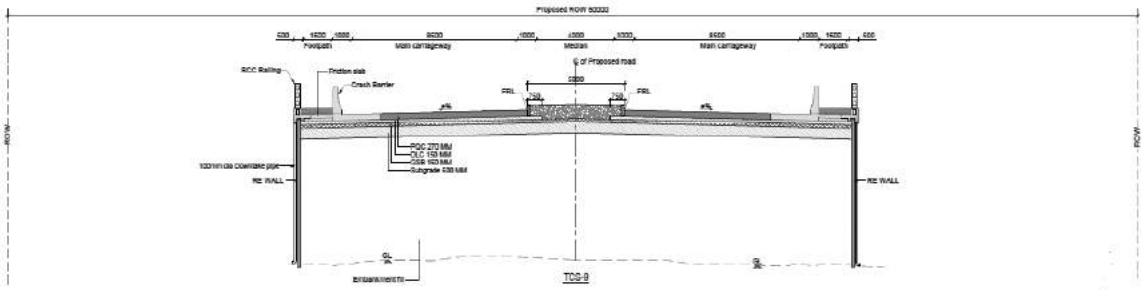

Figure 2.15: TCS-9 TCS Of Approach to Road Over Bridge

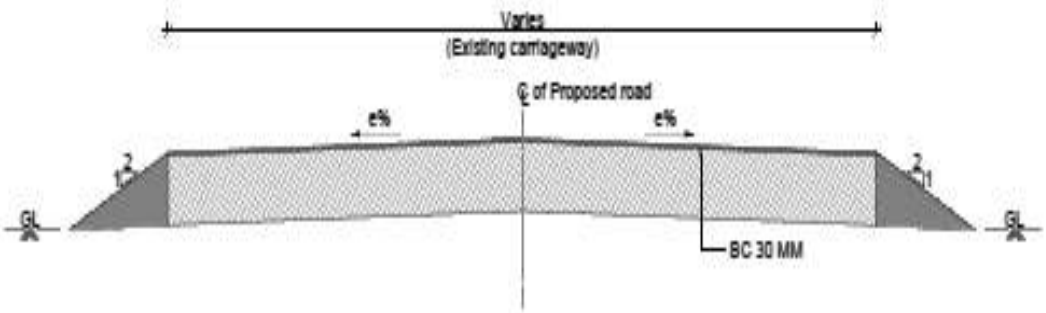

Figure 2.16: TCS-10 TCS For Overlay on Existing Road

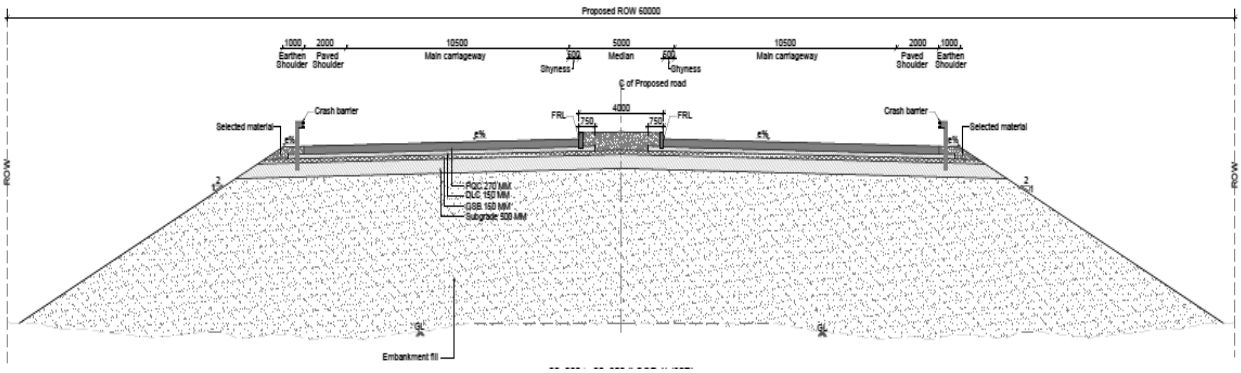

Figure 2.17: TCS Of Approach to Grade Separated Structure 00+000 to 00+250 (LOOP-1) (80R)

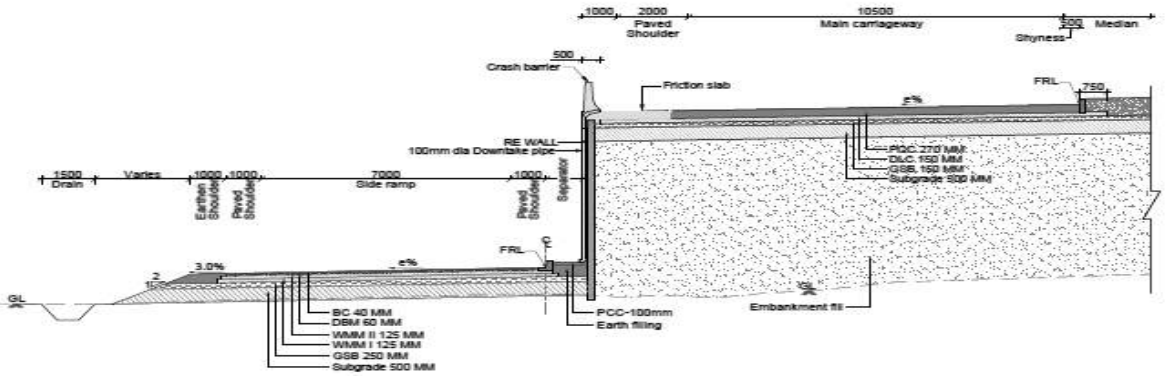

Figure 2.18: TCS of Ramp-1 00+000 To 00+610

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S.No.	Chainage		Length (Kms.)	TCS TYPE	Remarks
	From (Km.)	To (Km.)			
1	465+500	465+950	0.450	5	
2	465+950	466+775	0.825	6B	5.5m (SR)
3	466+775	467+525	0.750	5	
4	467+525	468+500	0.975	6B	5.5m (SR)
5	468+500	470+500	2.000	5	
6	470+500	472+130	1.630	9	
7	472+130	472+600	0.470	5	
8	472+600	472+900	0.300	5A	
9	472+900	473+390	0.490	3	
10	473+390	474+350	0.960	6A	5.5m (SR)
11	474+350	475+800	1.450	3	
12	475+800	476+270	0.470	6A	5.5m (SR)
13	476+270	476+620	0.350	6A	5.5m (SR)
14	476+620	478+100	1.480	6A	5.5m (SR)
15	478+100	481+490	3.390	3	
16	481+490	481+780	0.290	6B	5.5m (SR)

S.No.	Chainage		Length (Kms.)	TCS TYPE	Remarks
	From (Km.)	To (Km.)			
17	481+780	482+600	0.820	6B	5.5m (SR)
18	482+600	482+720	0.120	6B	5.5m (SR)
19	482+720	483+100	0.380	4	
20	483+100	483+570	0.470	5	
21	483+570	484+080	0.510	4	
22	484+080	484+460	0.380	1	
23	484+460	485+000	0.540	2	7.5(SR)
24	485+000	485+320	0.320	2	7.5(SR)
25	485+320	485+550	0.230	5	
26	485+550	485+600	0.050	4	
27	485+600	486+080	0.480	4	
28	486+080	486+240	0.160	5	
29	486+240	486+820	0.580	4	
30	486+820	490+590	3.770	3	
31	490+590	491+090	0.500	4	
32	491+090	491+620	0.530	5	
33	491+620	492+770	1.150	6B	5.5m (SR)
34	492+770	494+867	2.097	5	
35	494+867	495+927	1.060	4	
36	495+927	496+857	0.930	3	
37	496+857	499+567	2.710	4	
38	499+567	500+237	0.670	1	
39	500+237	500+427	0.190	3	
40	500+427	501+567	1.140	5	
41	501+567	502+617	1.050	6B	5.5m (SR)
42	502+617	503+477	0.860	5	
43	503+477	505+677	2.200	4	
44	505+677	506+617	0.940	5	
45	506+617	506+957	0.340	4	
46	506+957	507+237	0.280	6D	7.5m (SR)
47	507+237	508+157	0.920	6D	7.5m (SR)
48	508+157	508+437	0.280	6D	7.5m (SR)
49	508+437	509+027	0.590	3	
50	509+027	510+137	1.110	4	
51	510+137	511+247	1.110	3	
52	511+247	511+707	0.460	4	
53	511+707	513+337	1.630	1	
54	513+337	514+617	1.280	3	
55	514+617	514+717	0.100	6D	7.5m (SR COS)
56	514+717	515+017	0.300	6D	7.5m (SR)
57	515+017	515+087	0.070	6D	7.5m (SR)

S.No.	Chainage		Length (Kms.)	TCS TYPE	Remarks
	From (Km.)	To (Km.)			
58	515+087	515+117	0.030	3B	cos
59	515+117	515+227	0.110	3	
60	515+227	515+537	0.310	5	
61	515+537	516+757	1.220	3	
62	516+757	517+817	1.060	6A	5.5m (SR)
63	517+817	518+497	0.680	3	
64	518+497	519+197	0.700	3A	45m row
65	519+197	522+397	3.200	3	
66	522+397	523+817	1.420	6D	7.5m (SR)
67	523+817	524+690	0.873	8	

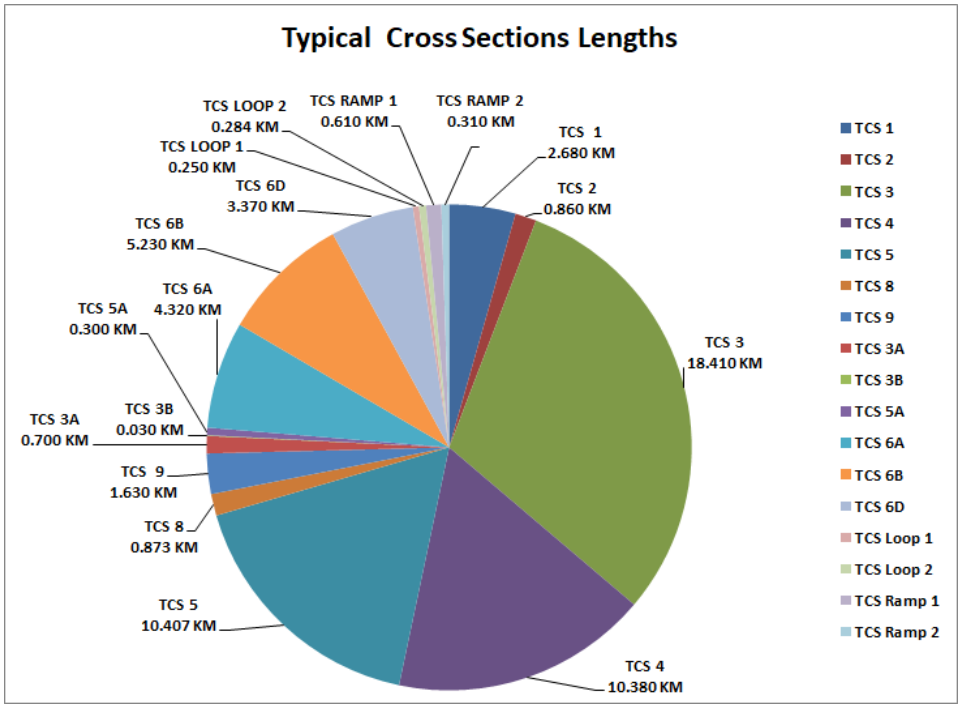

Figure 2.19: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are constructed in open and rural areas.

2.4 Service Roads

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the CA. The details are provided below.

Table 2.3: List of Service Road locations

S. No.	Design Chainage (Km.)		Length (Kms.)	Side	Carriageway width (m)
	From	To			
1	472+600	472+900	0.600	BHS	7.5
2	484+490	485+350	1.720	BHS	7.5
3	506+940	508+420	2.960	BHS	7.5
4	522+380	523+800	2.840	BHS	7.5
5	514+690	515+070	0.760	BHS	7.5
Total			**8.860**		

Table 2.4: List of Slip Road locations

S. No.	Design Chainage (Km.)		Length (Kms.)	Side	Carriageway width (m)
	From	To			
1	465+950	466+775	1.650	BHS	5.5
2	467+525	468+500	1.950	BHS	5.5
3	473+390	474+350	1.920	BHS	5.5
4	475+800	478+100	4.600	BHS	5.5
5	481+520	482+750	2.460	BHS	5.5
6	491+650	492+800	2.300	BHS	5.5
7	501+550	502+600	2.100	BHS	5.5
8	516+740	517+800	2.120	BHS	5.5
Total			**19.100**		

2.5 Bypass/Realignment

As per the provisions of Schedule B of the CA Realignment is provided at the following locations.

Table 2.5: Realignment/ Bypass stretches

S. No.	Design Chainage (Km.)		Design Length (Kms.)
	From	To	
Realignment stretches			
1	476+270	476+620	0.350
2	481+780	482+600	0.820
3	483+130	483+600	0.470
4	485+350	485+580	0.230
5	486+110	486+270	0.160
6	505+660	506+600	0.940
7	515+210	515+520	0.310
Total			**3+280**
Bypasses stretches			
1	465+500	472+900	7.400
2	491+130	494+850	3.720
3	500+420	503+460	3.040
Total			**14.160**

2.6 Intersections

As per provisions of Schedule B of the CA, 26 Minor Junctions are to be provided. However, as per site requirement additional 9 nos. of Major Junctions and 4 nos. of Minor Junctions are developed. Details are given below.

Table 2.6: List of Major Junctions

S.No.	Chainage (Km.)	Side	Type
1	468+026	BHS	Major
2	474+004	BHS	Major
3	477+589	BHS	Major
4	482+530	RHS	Major
5	492+205	BHS	Major
6	501+942	BHS	Major
7	507+659	RHS	Major
8	517+059	RHS	Major
9	523+004	LHS	Major

Table 2.7: List of Minor Junctions

S.No.	Chainage (Km.)	Side	Type
1	465+860	RHS	Minor
2	466+361	BHS	Minor
3	472+750	BHS	Minor
4	475+610	LHS	Minor
5	478+700	BHS	Minor
6	480+190	LHS	Minor
7	481+820	RHS	Minor
8	485+410	RHS	Minor
9	486+157	LHS	Minor
10	487+404	RHS	Minor
11	487+483	LHS	Minor
12	489+400	RHS	Minor
13	491+250	LHS	Minor
14	492+900	BHS	Minor
15	494+650	LHS	Minor
16	496+340	RHS	Minor
17	496+369	LHS	Minor
18	497+364	LHS	Minor
19	498+350	RHS	Minor
20	498+550	RHS	Minor
21	500+494	LHS	Minor
22	503+194	LHS	Minor
23	505+125	RHS	Minor

S.No.	Chainage (Km.)	Side	Type
24	506+401	RHS	Minor
26	512+746	LHS	Minor
26	513+395	RHS	Minor
27	513+966	LHS	Minor
28	514+960	BHS	Minor
29	522+480	LHS	Minor
30	523+892	RHS	Minor

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the Concession Agreement 1 no. of Pedestrian Underpass, 2 nos. of Light Vehicular Underpass, 1 no of Grade separator and 9 nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB) Road Under Bridge

One ROB is constructed and one RUB is retaining as per provisions of Schedule B of the CA.

2.9 Carriageway Details

Summary of Carriageway Details is given below:

Table 2.8: Summary of Carriageway Details

S.No.	Description	Flexible (Kms.)	Rigid (Kms.)
1	Service Roads	8.860	---
2	Slip Roads	19.100	---
3	4 Lane Rigid Pavement	---	59.190
4	Total Length	27.960	59.190
TYPE OF ALIGNMENT			
5	Widening	---	35.353
6	Realignment	---	10.707
7	Flyover approaches	---	13.13
8	Total Length of the Project	---	59.190

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.9: Summary of Structures

S.No.	Description	Major Bridges	Minor Bridges	Pipe Culverts	Box/Slab Culverts	Underpass	Grade separator	RUB/ ROB
1	Retained							1(RUB)
2	Widening	2	10	45	12			
3	Reconstruction			9	3			
4	New		5	11	12	VUP-09	1	1(ROB)

S.No.	Description	Major Bridges	Minor Bridges	Pipe Culverts	Box/Slab Culverts	Underpass	Grade separator	RUB/ ROB
						LVUP-02 PUP-01		
5	Improvement							
	Total	**2**	**15**	**65**	**27**	**12**	**1**	**2**

2.11 Toll Plazas

- One Toll Plaza is provided on the project road at Km. 510+865, which comprises of Eight lanes.
- The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m.
- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 8 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of the CA bus shelters are provided at 28 locations. Details are provided below.

Table 2.10: List of Bus shelters

S.No.	Chainage (Km.)	Side	S.No.	Chainage (Km.)	Side
1	472+850	LHS	1	472+850	RHS
2	477+830	LHS	2	477+415	RHS
3	478+570	LHS	3	478+850	RHS
4	479+940	LHS	4	480+350	RHS
5	485+100	LHS	5	485+120	RHS
6	487+290	LHS	6	487+190	RHS
7	489+450	LHS	7	489+200	RHS
8	498+797	LHS	8	498+797	RHS
9	505+250	LHS	9	505+170	RHS
10	506+572	LHS	10	506+197	RHS
11	508+147	LHS	11	507+885	RHS
12	509+947	LHS	12	510+207	RHS
13	513+417	LHS	13	513+480	RHS
14	514+727	LHS	14	514+727	RHS

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

Bus Stop at Km. 489+450

Bus Stop at Km. 498+797

Km. 466+000

Km. 467+200

Km. 524+723

Km. 508+800

Figure 2.20: Representative Photographs of Project Facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following Table 3.1. Few representative photographs are presented below.

Table 3.1: Road Inventory

S.No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	59.190 Kms.
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	39 Nos.
6	Toll Plazas	At Km. 510+865
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	28 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

3.3 Pavement Condition

Pavement condition survey was carried out on the project road. The criteria adopted for the classification of condition of the pavement is as per of IRC 83-2018.

Table 3.2: Pavement condition summary

Chainage From (Km.)	Chainage To (Km.)	Length (Kms.)	Condition
465+500	524+690	59.190	Good

Km. 474+004

Km. 475+623

Km. 517.889

Km. 521+775

Figure 3.1: Representative Photographs of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guidelines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 02 Nos. of Major Bridges, 16 Nos. of Minor Bridges,1 No of ROB, 12 Nos. of Underpasses (02-LVUP, 09-VUP & 01-PUP), 01 Nos. of Grade separator, 65 Nos. of Pipe culverts and 28 Nos. of Slab/ Box culverts are there along this project road.

Table 4.1: List of Structures

S.No.	Type of Structure	Numbers
1	Major bridges	02
2	Minor Bridge	16
3	VUP	09
4	LVUP	02
5	PUP	01
6	Grade separator	01
7	ROB	01
8	Pipe culverts	65
9	Slab/ Box Culverts	28

The Super Structure of Major bridges is of RCC Girder/ Solid slab resting on RCC wall type Piers and Abutments with open foundation. The Super Structure of Minor bridges is of RCC solid slab/RCC Girder and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 1.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.3 Details of Major Bridges

The total length of the Major bridge at Km. 485+730 is 186.0m with 8 spans. The superstructure consists of RCC/PSC I Girder. Each Pier and Abutment is regular RCC wall type. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC crash barriers have been provided on both sides of the deck.

The total length of the Major bridge at Km. 493+285 is 120.0m with 4 spans. The Superstructure consists of PSC I Girder. Each Pier is regular RCC circular type Abutment is of RCC wall type structure. Open foundations have been constructed for all Piers and Abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

Table 4.2: List of Major Bridge

S.No.	Chainage (Km.)	Span (Nos.x m)	Total Length of Bridge (m)
1	485+730	2x16.5+6x25.5	186.0
2	493+285	4 x 30.0	120.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning drainage spouts are to be carried out

Km. 485+730

Km. 493+285

Figure 4.1: Representative Photographs of Overall view of the major bridge

4.4 Details of Road Over Bridge (ROB)

The total length of the ROB at Km 471+516 is 181m with 5 spans. The superstructure consists of PSC Girder & Composite girder. Each pier and whereas abutment is regular RCC wall type abutment. Pile foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal/pot ptfe type. RCC railings have been provided on both sides of the deck.

Table 4.3: Details of ROB

S.No.	Chainage (Km.)	Span (Nos. X m)	Total Length of Structures (m)
1	471+516	1x30+1x46+2x37+1x31	181.000

4.5 Details of Minor Bridges

There are 16 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are of tar paper/ elastomeric bearings. RCC crash barriers are provided for most of the structures.

Table 4.4: Inventory of Minor Bridges

S.No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	465+694	1x9.0	9.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
2	486+333	2x5	10.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous

S.No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
				wearing coat.
3	487+508	2x4	8.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
4	492+957	2x7.498	15.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
5	493+146	2x6.62	13.600	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
6	494+908	5x5.7	11.400	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
7	496+447	6x5.5	33.0	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
8	498+461	3x6.7	13.400	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
9	501+114	1x7	7.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
10	503+867	2x4.5	9.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
11	506+324	3X7.0	21.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
12	508+587	2x6.62	13.200	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
13	509+467	1x6	6.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
14	509+764	2x5.375	10.700	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
15	513+568	4x6	24.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.
16	514+512	1x8	8.000	It has RCC Box structure. It has RCC crash barrier/Railing, bituminous wearing coat.

Km. 487+508

Km. 501+114

Figure 4.2: Representative photographs of Minor Bridges.

4.6 Details of Underpass

There are 12 Underpasses (02-LVUP, 09-VUP & 01-PUP) and one Grade Separator in the project stretch. The type of superstructure for underpass/Flyover is RCC/PSC I Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are Tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.5: Inventory of Underpass/Flyovers

S.No.	Chainage (Km.)	Types	Span (Nos.Xm.)	Total Length of Bridge (m)	Description
1	466+365	LVUP	1x10.5	10.500	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	468+026	VUP	2x12	24.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	474+004	VUP	1x12	12.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
4	476+24	VUP	1x10.5	10.500	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5	477+589	VUP	1x12	12.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6	482+200	VUP	2x12	24.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	492+205	VUP	1x12	12.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	501+942	VUP	1x12	12.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	507+659	VUP	1x12	12.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	514+960	PUP	1x7.0	7.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	517+059	VUP	2x12	24.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	523+004	VUP	2x12	24.000	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
13	524+723	Grade Separat or	2x30	60.000	It has RCC/PSC Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.

PUP at Km. 466+365

VUP at Km. 468+026

VUP at Km. 482+200

VUP at Km. 524+723

Figure 4.3: Representative photographs of underpasses

4.7 Details of Culverts:

The culverts observed along the project road are mainly of two types viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent way cleaning is required. In general, the condition of all the structures is found satisfactory. Details of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.7.1. Slab/Box Culverts

There are 28 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.6: List of Slab/Box Culverts

S.No.	Chainage (Km.)	Span (m)	Vent Size (m)
1	0+137	1 x 5.7 x 6.06	6.060
2	466+374	1 x 2 x 2.1	2.100
3	466+830	1 x 6 x 4.1	4.100
4	468+722	1 x 4 x 2.5	2.500
5	469+960	1 x 4 x 2.3	2.300
6	470+924	1 x 6 x 6	6.000
7	475+623	1 x 3.5 x 3.75	3.750
8	484+799	1 x 5 x 3.6	3.600

S.No.	Chainage (Km.)	Span (m)	Vent Size (m)
9	488+350	1 x 4 x 1.9	1.900
10	490+354	1 x 4 x 3.8	3.800
11	491+471	1 x 3 x 1.15	1.150
12	499+390	1 x 3 x 1.5	1.500
13	501+590	1 x 3 x 1.5	1.500
14	502+433	1 x 5 x 1.8	1.800
15	502+513	1 x 4 x 2.6	2.600
16	504+073	1 x 2 x 1.7	1.700
17	504+329	1 x 4.5 x 3.27	3.270
18	505+878	1 x 4.5 x 3.32	3.320
19	512+201	1 x 4.2 x 3.16	3.160
20	514+600	1 x 5.3 x 4.024	4.024
21	517+899	1 x 2.5 x 2.75	2.750
22	519+164	1 x 2.5 x 2.18	2.180
23	519+421	1 x 4.7 x 3.03	3.030
24	519+784	1 x 2.0 x 2.26	2.260
25	520+430	1 x 1.8 x 2.1	2.100
26	520+915	1 x 3 x 4.02	4.020
27	521+098	1 x 2 x 2.17	2.170
28	521+775	1 x 5.1 x 3.373	3.373

4.7.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

4.7.3. General Description of the Pipe Culverts

There are 65 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.7: List of Pipe Culverts

S.No.	Chainage (Km.)	No. of RowsXDia(m)	S.No.	Chainage (Km.)	No. of RowsXDia(m)
1	0+081	2x1.2	33	489+25	1x0.9
2	0+164	2x1.2	34	490+06	1x0.9
3	0+566	2x1.2	35	491+67	1x1.2
4	468+06	1x1.2	36	493+952	1x1.2
5	472+649	1x1.2	37	494+31	1x1.2
6	473+32	2x0.9	38	495+38	1x1.2
7	473+645	2x1.2	39	495+668	2x1.2
8	474+957	1x1.2	40	495+887	1x0.9
9	475+119	2x0.9	41	497+354	1x1.2
10	475+977	1x0.9	42	497+865	1x1.2

S.No.	Chainage (Km.)	No. of RowsXDia(m)
11	476+439	1x0.9
12	476+706	2x1.2
13	477+092	1x0.9
14	477+306	1x0.9
15	477+561	1x0.9
16	477+713	1x1.2
17	478+01	2x1.2
18	478+154	2x1.2
19	478+45	2x1.2
20	478+974	2x0.9
21	479+164	1x1.2
22	479+572	2x0.9
23	480+054	1x0.9
24	481+047	2x1.2
25	481+643	1x0.9
26	482+904	2x1.2
27	483+229	2x1.2
28	483+546	1x0.9
29	484+39	4x1
30	484+69	1x0.9
31	485+263	1x0.9
32	485+424	1x0.9

S.No.	Chainage (Km.)	No. of RowsXDia(m)
43	497+994	1x0.9
44	500+786	1x1.2
45	501+06	1x1.2
46	501+98	1x1.2
47	506+843	1x1.2
48	507+091	2x1.2
49	508+277	2x0.9
50	510+623	3x1.2
51	511+482	1x0.9
52	513+89	1x1.2
53	514+142	4x1.2
54	515+669	1x1.2
55	516+135	1x0.9
56	516+914	2x1.2
57	517+435	4x1.2
58	518+518	1x0.9
59	520+579	1x0.9
60	522+016	2x1.2
61	522+279	4x1.2
62	522+503	1x0.9
63	522+559	1x1.2
64	523+656	1x1.2
65	524+207	2x1.2

4.7.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 501+060

Km. 501+060

Km. 489+250

Km. 524.207

Figure 4.4: Representative photographs of Pipe Culverts

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. REVIEW OF PAVEMENT DESIGN

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, pavement condition and CA provisions.

5.2 Pavement design crust thickness

The Pavement Design shall be carried out in accordance with Indian Roads Congress guidelines. The pavement is designed in accordance with IRC: 58 -2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for highways", IRC: SP 84 -2014, IRC: 15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5.1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	7 %
Two-way commercial traffic volume per day	3622
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	270
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	36
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	580

As per schedule D, **(Annexure-I),** clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl: 5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC: 37. "Guidelines for the Design of Flexible Pavements".

Table 5.2: Flexible Pavement for service road

S.No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	8 %
2	Design Life (Years)	15 years for non-bituminous
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	60 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement for Service Roads – Proposed on or before 2027 and 2033.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following Table 6.2.

Table 6.2: Details of Road Furniture

S.No.	Item Description		Status	Condition
1	Sign Boards	• Chevron Signs • Village sign boards • Information Boards • Other Sign Boards • Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per	Good

S.No.	Item Description		Status	Condition
			site requirement	
3	Metal Beam Crash Barriers	At High embankments & Bridge Approaches	Available as per site requirement	Good
4	Median Kerb	Along the Project Highway	Provided as per IRC SP:84-2014	Good
5	Road studs & Solar Blinkers	Along the Project Highway	Provided as per IRC SP:84-2014	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Km. 482+020

Km. 482+200

Km. 496+477

Km. 505+878

Figure 6.1: Representative photographs during Road Safety Audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plaza on the project road at Km510+865. The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed at the front of each island to prevent out of control approaching vehicles crashing into the toll booth. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 7 Nos. toll booths are provided in toll plaza.

Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment Toll Plaza and Control Room

S.No	Particulars	Quantity
1	Toll plaza Building	1
2	Toll Booths	7
3	Electrical Room	1
4	Generator Room	
5	Generators	1
6	ETC RFID Transiver near pay axis mounted on canopy	12
7	Electronic Enclosure	8
8	Lane Controller with industrial PC	8
9	AVC including sensor loop detector	10
10	Used fare display with mounting pole	10
11	Automatic Barrier Gate	9
12	Overhead Lane Status	10
13	Customized Industrial Grade Keyboard	8
14	Thermal receipt Printer	8
15	Barcode Reader with Stand	8
16	Violation light & alarm (on Existing Pole) and Foot switch in Booth	1
17	Booth CCTV camera with Voice Recording	10
18	Intercom slave Unit in booth	8
19	Medium speed weight in Motion	10
	Control Room	
1.	Plaza Servers in Hot standby Configuration	1
2.	Static Weight Bridge	2
3.	Network Printer	1
4.	8 port Network switches (Layer 1)	12

S.No	Particulars	Quantity
5.	28 Port Network Switch(Layer 2)	2
6.	Internet router for Connection to the CCH	1
7.	UPS system as require for Complete Hybrid ETC Toll Plaza System	3
8.	55" LED Display for CCTV Monitoring	1
9.	Network Video Recorder (NVR) for CCTV recording	1
10.	CCTV Cameras for plaza building surveillance (server from, control room, Cash Up Room Admin)	5
11.	Intercom Master Unit in Control room-10 Channel (For<=8 Lanes)	1

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S.No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	1 No.
2	Ambulance	1 No.
3	Crane	1 No.

Figure 7.1: Photographs of Toll Plaza at Km. 511+000

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model which allows the payment of 40% of the Project cost during construction period based on progress milestones set forth by Authority to Concessionaire and Payment of 60% to the Concessionaire Biannually with the Interest during the balance concession period.

8.2 Payment during Construction

As per the provisions of Article 23 of the Concession Agreement, 40% of the Bid Project Cost adjusted with Price Index in accordance with Clause 23.2.3 of the CA, shall be paid during the Construction Period. Amount payable during construction period shall be paid in five equal installments upon achieving the following Project Milestones.

Table 8.1: Schedule of Payment Milestones

S.No.	Project Milestone No	Criteria for releasing the Payment
1	Project Milestone I	On Achievement of 10% of Physical Progress
2	Project Milestone II	On Achievement of 30% of Physical Progress
3	Project Milestone III	On Achievement of 50% of Physical Progress
4	Project Milestone IV	On Achievement of 75% of Physical Progress
5	Project Milestone V	On Achievement of 90% of Physical Progress

During the Operation Period, remaining 60% of the balance Completion Cost shall be paid in 30 Annuities each Annuity payable biannually. Each Annuity amount shall be based on the percentages of the balance Completion Cost mentioned in 23.6.3 of the Concession Agreement. During the Operation Period following payment components are payable.

- Annuity Payment as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- Interest on the balance amount to be paid at an interest rate equal to the applicable Bank Rate Plus 3%.
- O&M Payment as a lump sum amount as per Clause 23.7.1 of the Concession Agreement.

Details of Annuity payments are as below.

Table 8.2: Schedule of Annuity Payments

S.No.	Following the COD	% of Completion Cost remaining to be paid on COD	Annuity Due date	Annuity Paid date
1	Annuity No 1	2.10%	18.05.2020	21-May-20
2	Annuity No 2	2.17%	18.11.2020	3-Dec-20
3	Annuity No 3	2.24%	18.05.2021	
4	Annuity No 4	2.31%	18.11.2021	
5	Annuity No 5	2.38%	18.05.2022	
6	Annuity No 6	2.45%	18.11.2022	
7	Annuity No 7	2.52%	18.05.2023	
8	Annuity No 8	2.60%	18.11.2023	

S.No.	Following the COD	% of Completion Cost remaining to be paid on COD	Annuity Due date	Annuity Paid date
9	Annuity No 9	2.68%	18.05.2024	
10	Annuity No 10	2.76%	18.11.2024	
11	Annuity No 11	2.84%	18.05.2025	
12	Annuity No 12	2.93%	18.11.2025	
13	Annuity No 13	3.02%	18.05.2026	
14	Annuity No 14	3.11%	18.11.2026	
15	Annuity No 15	3.20%	18.05.2027	
16	Annuity No 16	3.30%	18.11.2027	
17	Annuity No 17	3.40%	18.05.2028	
18	Annuity No 18	3.50%	18.11.2028	
19	Annuity No 19	3.61%	18.05.2029	
20	Annuity No 20	3.72%	18.11.2029	
21	Annuity No 21	3.83%	18.05.2030	
22	Annuity No 22	3.94%	18.11.2030	
23	Annuity No 23	4.06%	18.05.2031	
24	Annuity No 24	4.18%	18.11.2031	
25	Annuity No 25	4.25%	18.05.2032	
26	Annuity No 26	4.25%	18.11.2032	
27	Annuity No 27	4.44%	18.05.2033	
28	Annuity No 28	4.71%	18.11.2033	
29	Annuity No 29	4.75%	18.05.2034	
30	Annuity No 30	4.75%	18.11.2034	

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. carrying out preventive and periodic maintenance of the Project road;
iii. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
iv. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
v. Functioning of the lighting system;
vi. Functioning of the Patrolling System

vii. Functioning of rescue and medical aid services
viii. Ambulance as and when required
ix. Functioning of the Project Facilities
x. Administrative, Operational and Maintenance Base Camp
xi. Truck Lay byes
xii. Pickup Bus stops / Bus Bays
xiii. protection of the environment and provision of equipment and materials therefor;
xiv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xv. complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are four lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement as well as rigid pavement are in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute
2nd Periodic Maintenance	2034	Planned to execute

The details of Routine Maintenance and Periodic/Major maintenance are enclosed in **ANNEXURE 3**

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sandstorms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction
c. Construction of Diversions
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

Further it is to be noted that during O&M period, the roughness value shall not exceed 2750 mm/Km in accordance with schedule k (a)(ii), on review of documents, no NCRs were noticedpertinment to riding quality.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 3.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	2.009	2.122		2.80	6.93
2021	2.069	2.185		2.88	7.14
2022	2.131	2.251		2.97	7.35
2023	2.195	2.318		3.06	7.57
2024	2.261	2.388		3.15	7.80
2025	2.328	2.459		3.24	8.03
2026	2.398	2.533		3.34	8.27
2027	2.470	2.609	22.89	3.44	31.41
2028	2.544	2.688		3.54	8.78
2029	2.621	2.768		3.65	9.04
2030	2.699	2.851		3.76	9.31
2031	2.780	2.937		3.87	9.59
2032	2.864	3.025		3.99	9.88
2033	2.950	3.116	29.53	4.11	39.70
2034	3.038	3.209		4.23	10.48
2035	1.998	2.110		2.78	6.89
Total	**39.355**	**41.569**	**52.42**	**54.81**	**188.15**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 4.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Certificate is enclosed as **ANNEXURE 5**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of Scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the HAI are provided in **ANNEXURE 7**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices

- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the % of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance:

As per clause 26.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Copies of Insurance Policies are enclosed as **ANNEXURE 6**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of Property
			From	To	
Fire Industrial All Risk Policy	The Oriental Insurance Co Ltd	171200/11/2021/227	22.11.2020	21.11.2021	Roads, including service Roads, structures, Bridges, underpasses etc.
Standard Fire & Special Perils Policy	The Oriental Insurance Co Ltd	171200/11/2021/228	26.11.2020	25.11.2021	Four Laning of Wardha-Butibori section
Electronic Equipment Insurance Policy	Oriental Insurance Company Ltd	171200/44/2021/36	08.09.2020	07.09.2021	Electronic equipment provided for Road and Bridges stretch Wardha to Butibori
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Co Ltd	3114203384108600000	02.05.2020	01.05.2021	All Categories employees of DBL & Sub-Contractor engaged in DBL

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. Major structural defects were not noticed. General condition of Culverts is good. Vegetation growth is observed in vent ways of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

One Toll Plaza is constructed at Km. 510+865 and the same is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 84-2014. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance is scheduled in the year 2027.

12.7 Epilogue:

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Condition of Structures

S.No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	465+694	Minor Bridge	Good	Good	Good	-	Good	Good	-
2	486+333	Minor Bridge	Good	Good	Good	-	Good	Good	-
3	487+508	Minor Bridge	Good	Good	Good	-	Good	Good	-
4	492+957	Minor Bridge	Good	Good	Good	-	Good	Good	-
5	493+146	Minor Bridge	Good	Good	Good	-	Good	Good	-
6	494+908	Minor Bridge	Good	Good	Good	-	Good	Good	-
7	496+447	Minor Bridge	Good	Good	Good	-	Good	Good	-
8	498+461	Minor Bridge	Good	Good	Good	-	Good	Good	-
9	501+114	Minor Bridge	Good	Good	Good	-	Good	Good	-
10	503+867	Minor Bridge	Good	Good	Good	-	Good	Good	-
11	506+324	Minor Bridge	Good	Good	Good	-	Good	Good	-
12	508+587	Minor Bridge	Good	Good	Good	-	Good	Good	-
13	509+467	Minor Bridge	Good	Good	Good	-	Good	Good	-
14	509+764	Minor Bridge	Good	Good	Good	-	Good	Good	-
15	513+568	Minor Bridge	Good	Good	Good	-	Good	Good	-
16	514+512	Minor Bridge	Good	Good	Good	-	Good	Good	-
17	485+730	Major Bridge	Good	Good	Good	-	Good	Good	-
18	493+285	Major Bridge	Good	Good	Good	-	Good	Good	-
19	468+026	VUP	Good	Good	Good	-	Good	Good	-
20	474+004	VUP	Good	Good	Good	-	Good	Good	-
21	477+589	VUP	Good	Good	Good	-	Good	Good	-
22	482+200	VUP	Good	Good	Good	-	Good	Good	-
23	492+205	VUP	Good	Good	Good	-	Good	Good	-
24	501+942	VUP	Good	Good	Good	-	Good	Good	-

S.No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
25	507+659	VUP	Good	Good	Good	-	Good	Good	-
26	517+059	VUP	Good	Good	Good	-	Good	Good	-
27	523+004	VUP	Good	Good	Good	-	Good	Good	-
28	466+365	PUP	Good	Good	Good	-	Good	Good	-
29	476+240	PUP	Good	Good	Good	-	Good	Good	-
30	514+960	PUP	Good	Good	Good	-	Good	Good	-
31	471+516	ROB	Good	Good	Good	-	Good	Good	-
32	524+723	Grade separator	Good	Good	Good	-	Good	Good	-

Annexure 2: Condition of Culverts

Box Culverts

S.No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	0+137	Good	Good	Fair	Good	Good
2	466+374	Good	Good	Fair	Good	Good
3	466+830	Good	Good	Fair	Good	Good
4	468+722	Good	Good	Fair	Good	Good
5	469+960	Good	Good	Fair	Good	Good
6	470+924	Good	Good	Fair	Good	Good
7	475+623	Good	Good	Fair	Good	Good
8	484+799	Good	Good	Fair	Good	Good
9	488+350	Good	Good	Fair	Good	Good
10	490+354	Good	Good	Fair	Good	Good
11	491+471	Good	Good	Fair	Good	Good
12	499+390	Good	Good	Fair	Good	Good
13	501+590	Good	Good	Fair	Good	Good
14	502+433	Good	Good	Fair	Good	Good
15	502+513	Good	Good	Fair	Good	Good
16	504+073	Good	Good	Fair	Good	Good
17	504+329	Good	Good	Fair	Good	Good
18	505+878	Good	Good	Fair	Good	Good
19	512+201	Good	Good	Fair	Good	Good
20	514+600	Good	Good	Fair	Good	Good
21	517+899	Good	Good	Fair	Good	Good
22	519+164	Good	Good	Fair	Good	Good
23	519+421	Good	Good	Fair	Good	Good
24	519+784	Good	Good	Fair	Good	Good
25	520+430	Good	Good	Fair	Good	Good
26	520+915	Good	Good	Fair	Good	Good
27	521+098	Good	Good	Fair	Good	Good
28	521+775	Good	Good	Fair	Good	Good

Hume Pipe Culverts

S.No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+081	Good	Good	Good	-
2	0+164	Good	Good	Good	-
3	0+566	Good	Good	Good	-
4	468+060	Good	Good	Good	-
5	472+649	Good	Good	Good	-
6	473+320	Good	Good	Good	-

S.No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
7	473+645	Good	Good	Good	-
8	474+957	Good	Good	Good	Good
9	475+119	Good	Good	Good	Good
10	475+977	Good	Good	Good	Good
11	476+439	Good	Good	Good	Good
12	476+706	Good	Good	Good	-
13	477+092	Good	Good	Good	-
14	477+306	Good	Good	Good	Good
15	477+561	Good	Good	Good	Good
16	477+713	Good	Good	Good	Good
17	478+010	Good	Good	Good	Good
18	478+154	Good	Good	Good	Good
19	478+450	Good	Good	Good	Good
20	478+974	Good	Good	Good	Good
21	479+164	Good	Good	Good	Good
22	479+572	Good	Good	Good	Good
23	480+054	Good	Good	Good	Good
24	481+047	Good	Good	Good	Good
25	481+643	Good	Good	Good	Good
26	482+904	Good	Good	Good	Good
27	483+229	Good	Good	Good	Good
28	483+546	Good	Good	Good	-
29	484+390	Good	Good	Good	-
30	484+690	Good	Good	Good	Good
31	485+263	Good	Good	Good	-
32	485+424	Good	Good	Good	Good
33	489+250	Good	Good	Good	Good
34	490+060	Good	Good	Good	-
35	491+670	Good	Good	Good	-
36	493+952	Good	Good	Good	-
37	494+310	Good	Good	Good	Good
38	495+380	Good	Good	Good	Good
39	495+668	Good	Good	Good	Good
40	495+887	Good	Good	Good	-
41	497+354	Good	Good	Good	-
42	497+865	Good	Good	Good	-
43	497+994	Good	Good	Good	Good
44	500+786	Good	Good	Good	Good
45	501+060	Good		Good	Good
46	501+980	Good	Good	Good	Good

S.No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
47	506+843	Good		Good	Good
48	507+091	Good	Good	Good	Good
49	508+277	Good	Good	Good	Good
50	510+623	Good	Good	Good	Good
51	511+482	Good	Good	Good	Good
52	513+890	Good	Good	Good	Good
53	514+142	Good	Good	Good	Good
54	515+669	Good	Good	Good	Good
55	516+135	Good	Good	Good	Good
56	516+914	Good	Good	Good	Good
57	517+435	Good	Good	Good	Good
58	518+518	Good	Good	Good	Good
59	520+579	Good	Good	Good	Good
60	522+016	Good	Good	Good	Good
61	522+279	Good	Good	Good	Good
62	522+503	Good	Good	Good	Good
63	522+559	Good	Good	Good	Good
64	523+656	Good	Good	Good	Good
65	524+207	Good	Good	Good	Good

Annexure 3: Operation & Maintenance cost

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate (Rs)	Amount (Rs)	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	57.790	12	4	350	9,70,872	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	1.4	24	4	350	47,040	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km.	59.19	52	1	1939	59,68,009	01 Nos of Labour
4	Watering in Avenue plants	Once in Week	Km.	57.79	52	58	1939	58,26,850	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km.	57.79	12	12	21000	2,52,000	02 Nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km.	41.433	2	10	350	2,90,031	10 Nos of labour per KM (70% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	93	2	3	650	3,62,700	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km.	57.79	4	2	350	1,61,812	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	28	12	2	350	2,35,200	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	5.00	12	60	350	12,60,000	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	18	2	4	350	50,400	04 Nos of Labour for removal of vegetation/Structure
13	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm.	15	1	350	124	6,50,535	2.5% of CW area considered 22.0x1000x2.5%
								1,60,75,449	

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate (Rs)	Amount (Rs)	Remarks
	EQUIPMENT SUPPLY								
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.		12	1	400000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	57.790	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.		12		500000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	57.790	12	3	12000	34,674	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos.		12		4,00,000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos.	57.790	12	4	2500	1,15,580	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month
9	Toll plaza AMC	Yearly	Nos.		12	1	100000	12,00,000	100000/month
								29,50,254	
1	Patrolling vehicle	Monthly	Nos.	12		1	300000	300000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Ambulance	Monthly	Nos.	12		1	240000	240000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1 Ambulance/toll plaza)

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate (Rs)	Amount (Rs)	Remarks
3	Tow away trucks and Crane	Monthly	Nos.	12		1	400000	400000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos.	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
								10,60,000	
							Routine Maintenance Cost (Rs.)	**2,00,85,703.00**	

Incidental cost for 1 year

S.No.	Item		Unit	No	Frequency	Quantity	Rate (Rs)	Amount (Rs)	Remarks
1	Road marking	Half yearly	Sqm.	1	1	2646	516	13,65,336	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	192	168	32,256	2% of Flexible Pavement (changed quantities to only Service road portion)
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1775.7	225	11,98,598	10% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	4	83	4000	13,28,000	5 % of Total sign boards per half year (considered 1650 Nos)
5	MBCB	Monthly	RMT.			1250	2400	30,00,000	5% of Total qty per year - (considered 2400 per number)

S.No.	Item		Unit	No	Frequency	Quantity	Rate (Rs)	Amount (Rs)	Remarks
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	59.19	4	15	2250	1,35,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	59.19	1	2367.6	250	5,91,900	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	1244	1	37	55000	20,35,000	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	2663.55	4000	1,06,54,200	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT.	7321		219.636	3985	8,75,249	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**2,12,15,539**	

Operational Expenses

S.No.	Particulars	Amount
1	Man Power	₹ 93,00,000
2	Fuel for Generator & Vehicles	₹ 92,76,000
3	Electricity	₹ 79,20,000
4	Stationary	₹ 1,00,000
5	Replacement of Electrical Fixtures	₹ 7,77,215
6	Refurbishment of Toll Plaza Equipment	₹ 6,00,000
Total Amount		₹ 2,79,73,215

Major Maintenance Summery

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-11-2019					
1st Major Maintenance - Highway	01-06-2026	18,42,83,544	6.50	3.0%	**22,02,18,835**	**22.02**
1st Major Maintenance - Structures	01-06-2026	72,51,708	6.50	3.0%	**86,65,791**	**0.87**
2nd Major Maintenance - Highways	01-06-2032	19,49,15,944	12.50	3.0%	**26,80,09,423**	**26.80**
2nd Major Maintenance - Structures	01-06-2032	1,98,52,260	12.50	3.0%	**2,72,96,857**	**2.73**
				Total	**₹ 52,41,90,906**	**52.42**

Major Maintenance BOQ

BoQ Item No.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	amount
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.							
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	3,19,658.33	14.00	44,75,217	3,19,658	14.00	44,75,217
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	9,589.75	7,682.00	7,36,68,460	9,590	7,682.00	7,36,68,460
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	88,785.75	250.00	2,21,96,438	88,786	250.00	2,21,96,438
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	5,81,630.00	130.00	7,56,11,900	5,81,630	130.00	7,56,11,900
5	Earthen shoulder @ service roads	cum	2,798.00	250.00	6,99,500	2,798	250.00	6,99,500
	Total				**17,66,51,514**			**17,66,51,514**

BoQ Item No.	DESCRIPTION	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt		380.00		27,980	380.00	1,06,32,400
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	8,017.50	516.00	41,37,030	8,018	516.00	41,37,030
3	Road Studs	Nos	4,660.00	750.00	34,95,000	4,660	750.00	34,95,000
	Total			-	**76,32,030**			**1,82,64,430**
	Grand Total				**18,42,83,544**			**19,49,15,944**

Annexure 4: Letter of Award

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

NHAI/Tech/02/SFC/War- But /2016/ 97364 **28th March 2017**

To,

M/s Dilip Buildcon Limited
Plot No. 5, inside Govind Narayan Singh Gate
Chuna Bhatti, Kolar Road
Bhopal – 462 016
Phone No.: 09300948396
Fax: 0755 4029998
Email: db@dilipbuildcon.co.in; dilipb_99@rediffmail.com

(Kind Attention: Mr. Kundan Kumar Das, AGM – Business Development)

Subject: Four Laning of **Wardha-Butibori** Section of NH-361 from km 465.500 to km 524.690 (design length 59.190 km) under NH (O) in the State of Maharashtra on Hybrid Annuity Mode – **Letter of Award – Reg.**

Ref: 1. Your Proposal submitted on 23.02.2017
2. Opening of Financial proposal on 22.03.2017

Sir,

With Reference to NHAI's Request for Proposal for "Four Laning of **Wardha-Butibori** Section of NH-361 from km 465.500 to km 524.690 (design length 59.190 km) under NH (O) in the State of Maharashtra on Hybrid Annuity Mode" and considering you proposal in this regard submitted on 23.02.2017 vide reference no. (i), NHAI hereby accepts your proposal quoting Bid Project Cost of **Rs. 1065.51 crore (Rupees One Thousand Sixty Five Crore and Fifty One Lakh Only)** and first year O&M of **Rs. 3.00 Crore (Rupees Three Crore Only)** as included in Appendix- 1B of your document and declares you as the "Selected Bidder" as per the provisions of RFP Documents.

2. In accordance with the clause 3.8.4 of the RFP document, you are requested to sign the duplicate copy of the LOA and return the same as your acknowledgement within 7 (Seven) days of the receipt of the LOA. Thereafter you are required to execute the concession Agreement within 45 (Forty five) days from the date of issue of LOA as specified in Clause 1.3 of RFP.

3. Further, As per RFP document, you are required to incorporate a Special Purpose Vehicle solely for the purpose of domiciling the project (the "Concessionaire"). The Concessionaire For due and faithful performance of its obligations during the Concession Period shall furnish a Performance Security by way of irrecoverable and unconditional Bank guarantee of **Rs 53.28 Crores (Rupees Fifty Three Crore Twenty Eight Lakh only)** within a period of the 30 days from the date of signing of the Concession Agreement. Till the time the Concessionaire provides NHAI with the performance Security the Bid Security shall remain in full Force and Effect (refer Clause 4.1.2 and Clause of Article 9 of RFP).

4. You are required to comply with all the terms and conditions set forth in the RFP Documents. In case of any default on your part, you shall be liable for action as stated in the Bid Documents.

(Ashish Asati)
General Manager (Tech)
(Maharashtra Division)

Annexure 5: Provisional Certificate

LION ENGINEERING CONSULTANTS
"Contributing in Building the Infrastructure of the Nation"

Letter No. LION/IE-0217/2019/NHAI-DBL-WB/7394 **Date: 20.11.2019**

To,
The Authorized Signatory,
DBL Wardha Butibori Highways Private Limited,
Reg. Office: Plot No.5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal-462016 (MP).
Email- db@dilipbuildcon.co.in, dbl.butibori@gmail.com

Sub : Four Laning of Wardha - Butibori Section of NH-361 from Km.465.500 to Km 524.690 (Design Length-59.190 Km) under NH (O) in the State of Maharashtra on Hybrid Annuity Mode.
Issuance of Provisional Completion Certificate under Clause 14.3 of Concession Agreement. Reg.

Ref:
1. Concession Agreement dtd: 09.06.2017.
2. Concessionaire Lr. No. WBHPL/IE/D&D/2019/1378; dtd: 20.07.2019.
3. Concessionaire Lr. No. WBHPL/IE/D&D/2019/1408; dtd: 02.08.2019.
4. Inspection of IE dated: 07.08.2019 & 09.08.2019.
5. This office Lr. No. LION/IE0217/2019/NHAI-DBL-WB/6875; dtd: 14.08.2019.
6. Concessionaire Lr. No. WBHPL/IE/D&D/2019/1428; dtd: 22.08.2019.
7. Inspection of IE dated 22.08.2019.
8. Concessionaire Lr. No. WBHPL/IE/D&D/2019/1436; dtd: 26.08.2019
9. Concessionaire Lr. No. DBL/WBHPL/IE/2019/1506; dtd 04.10.2019.
10. PD Letter No. NHAI/PIU/YTL/NH-361/WB/RSC/2278; dtd: 14.10.2019.
11. Inspection of IE date: 21.10.2019 and 22.10.2019.
12. This office Lr. No. LION/IE0217/2019/NHAI-DBL-WB/7263; dtd: 23.10.2019.
13. Inspection of IE date: 12.11.2019.
14. RO-Nagpur Lr. No. NHAI/RO-NAG/4/7/W-B/IE/PCOD/2019-20/2104 dtd: 15.11.2019
15. Inspection of IE date: 19.11.2019.

Dear Sir,

The Concession Agreement for the above project was signed between M/s DBL Wardha Butibori Highways Private Limited (hereinafter referred as "Concessionaire") and National Highways Authority of India (hereinafter referred as "Authority") on 09.06.2017 and the Appointed Date was declared as 30.11.2017.

2. As per clause 14.3.2 of the Concessionaire Agreement wherein mentioned "The *Parties hereto expressly agree that a Provisional Certificate under this clause 14.3 may, upon request of the Concessionaire to this effect, be issued for operating part of the Project, if the Concessionaire has completed construction of 100% of the Site made*

Corporate office : " LION TOWER ", Plot No. 97, Elegant Estate, Near Mother Teresa School, Behind Petrol Pump, Kolar Road, Bhopal - 462042 (M.P.)
Tele / Fax : +91 755 2879499 E-mail : corporate@liongroup.in, info@liongroup.in
Website : www.liongroup.in

LION GROUP
Serve Society is Our Vision

part, and the rights and obligations of the Concessionaire for and in respect of such completed part of the Project shall be construed accordingly".

3. Hence, in view of above and according to clause 14.3.2 of the CA, the status of work in Pre-COD sections in accordance to schedule-B, C & D of CA is herein under:

S.No.	Section (km)		Side	Length (km)	Remark
	From	To			
Existing Carriage Way					
1	465+500	467+525	BHS	2.025	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
2	472+900	507+200	BHS	34.300	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
3	508+320	514+660	BHS	6.340	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
4	515+260	524+690	BHS	9.430	This section is considered in Pre-COD. Balance work highlighted in ***Punch List-A***
4-lane operational length (km) considered for Pre-COD				**52.095**	
Total length of Project Highway (km)				59.190	

4. As per NHAI Policy circular dated 21.12.2015, the Independent Engineer vide letter no. 7253; dtd: 23.10.2019, has submitted the proposal regarding concurrence for issuance of Provisional Completion Certificate under clause 14.3 of the Concession Agreement.

5. Further, the RO-Nagpur has inspection project highway on 12.11.2019 and vide letter no 2104; dtd: 15.11.2019 has issued requisite concurrence to IE with instructions to ensure balance items of list-C and compliance of observation of Safety Consultant.

6. Further, the Concessionaire has confirmed compliance and the Independent Engineer has inspected project highway on 19.11.2019 and observed that all the pending works are now satisfactorily completed by the Concessionaire.

7. In view of above, the Independent Engineer is of opinion that you are now eligible for issuance of provisional completion certification in accordance with article 14 of CA. *Hence, the Independent Engineer is herewith issuing* ***Provisional Completion Certificate*** *(enclosed in* ***Appendix-I****) in pursuant to clause 14.3 of the Concession Agreement along with followings.*

   a. The Project Highway has been constructed as per scope defined under Schedule B & C, in conformity with the technical specifications and standards set forth in Schedule-D of the Concession Agreement. The detailed summary against each item of the Schedule B & C is shown in ***Annexure-I***. The List of minor outstanding works of Pre-COD section (forming "PUNCH LIST-A") is attached as ***Appendix-II***. As per clause 14.4.1 of the Concession Agreement, the works in PUNCH LIST-A have to be completed by the Concessionaire within 90 days of issuance of Provisional Certificate.
   Also, the list of outstanding works for section is not considered in Pre-COD, annexed as LIST-B of ***Appendix-II***.

   b. The Concessionaire has carried out all the tests successfully in accordance with clause 2 of schedule-I & clause 14.1 of the CA in presence of Independent Engineer and the representative of Authority. The Concessionaire vide letter no: DBL/WBHPL/IE/2019/1506; dtd:04.10.2019, has submitted test reports as

BHOPAL

Page 2 of 4

annexed in ***Annexure-II (a), Annexure-II (b), Annexure-II (c), Annexure-II (d), Annexure-II (e)*** .

c. The Environmental Audit as per the provisions of clause 2.9 of Schedule-I, has been conducted by Environmental Expert and found that Concessionaire has complied with the Applicable Law and Permits and the same confirms to Good Industry Practice. The Concessionaire vide letter no: DBL WBHPL/IE/2019/1430 ; dtd: 24.08.2019, has submitted Environmental Audit Report which annexed as ***Annexure-II (f)***.

d. As directed by PD-Yavatmal vice letter no. 2278; dtd: 14.11.2019, the Safety Consultant M/s Design Aid has carried out Safety Audit during Pre-COD stage as per IRC SP-88-2009 and submitted Safety Audit report vide mail dtd: 06.11.2019 enclosed as ***Annexure-II (g)*** cortaining their observations to enhance safety on Pre-COD section of Project Highway. Further, the Concessionaire vide letter no. 1547; dtd: 11.11.2019, has submitted compliance report for the same. IE during visit 19.11.2019, has inspected project highway and observed that the Concessionaire has successfully complied all observations of the Safety Consultants pertaining to Safety of Road Users.

e. The Independent Engineer has issued total 11 nos. of Non-Conformance Reports during the construction period and the Concessionaire has been satisfactorily complied and rectified all deficiencies highlighted in NCRs issued by the Independent Engineer. Accordingly, all NCRs were closed by the Independent Engineer. Copy of all NCRs with summary is annexed as ***Annexure-V***.

f. The Concessionaire has achieved Project Mile Stone-I, I & III well in advance before schedule date in accordance with Schedule-G of CA. **(Refer *Annexure-III*).**

g. The Concessionaire has submitted the consolidated Change of Scope proposal for works completed / under progress / to be taken up and all COS proposals were reviewed by the Independent Engineer as per Article-16 of the Concession Agreement. The summary & Status of COS proposals with all correspondences are enclosed as ***Annexure-IV***.

h. The Concessionaire has mobilised incident management vehicles i.e. Ambulance, Patrolling Vehicle & Crane at toll plaza. It is pertinent to mention herein that the Concessionaire has undertaken to mobilise incident management vehicle as per NHAI policy circular no. 12.19; dtd: 20.03.2018 within period of 90 days from issuance of Pre-COD.

i. The Concessionaire has applied for electrical connections at all such locations where work is in progress by the Electricity Department. However, Concessionaire has undertaken for requisite lightening at completed section through DG set. **(refer Annexure-VI)**

j. The integration of toll equipment checked and found in order. The toll plaza is now ready for operation as per IHMCL Guidelines. However, the Concessionaire has uncertaken to ensure followings till & at time of handing over toll plaza to toll operation agency (appointed by NHAI):

   i. To calibrate Static Weigh Bridge (SWB) & Medium Speed Weigh in Motion (MS WIM) by Weight & Measurement Department.

   ii. To keep watch and ward of equipment and system installed at the Toll Plazas. To conduct all requisite tests as per NHAI Policy/Guidelines, once it introduced by the Authority.

k. As per clause 17.3.1 of the Concession Agreement, the Concessionaire vide letter no: WBHPL/IE/ 2019/1422; dtd: 17.08.2019 has submitted Maintenance Manual which has been reviewed by IE. **(Refer Annexure-VII)**

l. After issuance of Provisional Certificate, the Concessionaire shall ensure following with immediate effect:

   i. As per clause 17.1.2 of the Concession Agreement "The Concessionaire shall remove promptly from the Project Highway all surplus construction machinery and material, waste materials (including hazardous materials and waste water), rubbish and other debris (including without limitation, accident debris) and keep the Project Highway in a clean, tidy and orderly condition and in conformity with Applicable Laws, Applicable

Page 3 of 4

Permits and Good Industry Practice. For Avoidance of doubt, it is to be agreed that the debris and material excavated shall be carried out and deposited at a place to decide in consultation with Authority/Independent Engineer"

ii. In pursuant to Article-17 of the Concession Agreement, the Concessionaire, during the O&M Period, shall operate and maintain the project highway in accordance with Concession Agreement, applicable laws and applicable permits, and confirm to specification & standards and good industry practices.

iii. In pursuant to clause 10.5 of the Concession Agreement, "The Concessionaire, during Concession Period, shall protect the site from any and all occupations, encroachment or Encumbrance and shall not place or create nor permit any Contractor or other person claiming through or under the Concessionaire to place or create any Encumbrance or security interest over all or any part of the site or project assets or on any rights of the Concessionaire therein or under this Agreement, save and except as otherwise expressly set forth in the Concession Agreement."

iv. As per clause 17.16 of the Concession Agreement, "The Concessionaire shall not undertake or permit any form of commercial advertising, display or hoarding at any place on the site.

v. The Concessionaire shall ensure traffic regulation on the Project in accordance with Applicable Laws, and subject to the supervision and control of the State authorities [or a substitute thereof] empowered in this behalf under Applicable Laws.

vi. All obligations pertaining to operation & maintenance of the project highway as per relevant provisions of the Concession Agreement.

Therefore, in the view of the above and as per the provisions of clause 14.3 of the Concession Agreement, the Independent Engineer herewith issuing Provisional Completion Certificate to the Concessionaire (annexed as ***Appendix-I)*** with effective from 20.11.2019.

Thanking you and assuring our best services at all times, we remain

Thanking You,
Yours sincerely,
For & On Behalf of M/s Lion Engineering Consultants,

(Sushil Nimbark)
Sr. Chief General Manager (Tech/BD) cum Authorized Representative

Encl:
1. Appendix-I and II.
2. Annexure-I to VII.

Copy for information:
1. The Regional Officer, Narang Tower 1st Floor, Opposite to Office of Dy. Commissioner of Police Traffic (Nagpur City), Palm Road, Civil Lines. Nagpur-440001 Maharashtra Email: ronagpur@nhai.org
2. The Project Director, (K/a to Shri Prashant D. Mendhe), Project Implementation Unit (PIU), National Highways Authority of India (NHAI), Chandan Niveas, Plot No..13, Kolhe Layout Part-02, Dharwa Road, Yavatmal, Maharashtra-445001. Email- yavatmal@nhai.org nhaiyavatmal@gmail.com
3. The Team Leader, M/S Lion Engineering Consultants, Wardha (M.H.) for information Email: lecmhwardhabuttibori@gmail.com
4. The Executive Director, M/S LEC-Bhopal (MP), Email: ed@liongroup.in

Page 4 of 4

PROVISIONAL CERTIFICATE

1. We, M/S Lion Engineering Consultants, Bhopal, acting as the Independent Engineer under and in accordance with the Concession Agreement dated 09th June-2017, for development and operation of the Four Laning of the Wardha-Butibori section of NH-361 from km 465.500 to km 524.690 (design length 59.190 km) under NH(O) in the State of Maharashtra on design, build, operate and transfer (the "Hybrid Annuity") basis through *DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED*, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken for the project section of Existing NH-361 from Km. 465+500 to km 467+525, km 472+900 to km 507+200, km 508+320 to km 514+660 and km 515+260 to km 524+690 of the Project to determine compliance thereof with the provisions of the Agreement.

2. Construction Works forming part of the project/section of the project that were found to be incomplete and/or deficient have been specified in the **Punch list-A** appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. Some of the incomplete works (**LIST-B**) have been delayed as a result of reasons attributable to Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons not attributable to the Concessionaire. We are satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the section Km. 465+500 to km 467+525, km 472+900 to km 507+200, km 508+320 to km 514+660 and km 515+260 to km 524+690 of the project, pending completion thereof.

3. In view of the foregoing We are satisfied that the Section from Km. 465+500 to km 467+525, km 472+900 to km 507+200, km 508+320 to km 514+660 and km 515+260 to km 524+690 of the Project can be safely and reliably placed in commercial service of the users thereof, and in terms of the Agreement, the section of the Project is hereby provisionally declared fit for entry into operation on this the 20th day of November 2019.

ACCEPTED, SIGNED, SEALED AND DELIVERED
For and on behalf of
CONCESSIONAIRE by:

(Kundan Kumar Das, Authorized Signatory)
(Plot No.5, Inside Govind Narayan,
Singh Gate Chuna Bhatti, Kolar Road,
Bhopal (MP)-462016)

SIGNED, SEALED AND DELIVERED
For and on behalf of
INDEPENDENT ENGINEER By:

(Sushil Nimbark, Sr. CGM-
Authorized Representative)
(Plot No.97, Elegant State, Near
Mother Teresa School,
Kolar Road, Bhopal (MP)-462042)

APPENDIX-II		
Name of Project- "Four Laning of Wardha-Butibori Section of NH-361 from Km 465.500 to km 524.690 (design length 59.190 km) under NH (O) in the State of Maharashtra on Hybrid Annuity Mode".		
PUNCH LIST A		
(Work To Be Completed In 90 Days After Issuance Of Provisional Completion Certificate)		
Sr. No.	Work	Status of Work
1	Median Plantation	In Progress
2	Turfing	In Progress
3	Geo green Blanket	In Progress
4	Highway Lightning	In Progress
5	Rain water harvesting structures as per IRC:SP-42 & MOEF Guideline	Not Started
6	Submission of as built drawings	To be submitted
7	Avenue Plantation as per IRC:SP-21	In Progress
8	Boundary pillars, km/hectometer/5th km stone to be provided as per IRC provisions	In Progress
9	Landscaping & other finishing work in toll plaza campus.	In Progress
10	Numbering of structures.	In Progress
11	Highway Mini-Nest cum Toilet Block at Toll Plaza	In Progress
12	Installation of Static Weigh-Bridge	In Progress
13	Finishing work in building block of truck lay bye.	In Progress
14	2 Nos Residential quarters at toll plaza	In Progress
15	Tree guard for Avenue plantation	In Progress
16	Communication System and Advance Traffic Management Syastem (ATMS) as per clause 12.11 & 12.12 of IRC:SP-84	In Progress
17	Clearing of ROW	In Progress
18	Construction of Earthen Drain	In Progress
19	Slope Protection Work & Bed Work for Cross drainage structures	In Progress
20	Down take pipe at RE wall approach portial for drain off MCW rain water.	In Progress
21	Overlaying in existing road stretche of bypasses (Salod, Selop & Kelzar)	In Progress
22	One more coat of Kerb Painting	To be started

DEL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED

LIGHT ENGINEERING CONSULTANTS BHOPAL

APPENDIX-II

Name of Project- "Four Laning of Wardha-Butibori Section of NH-361 from Km 465.500 to km 524.690 (design length 59.190 km) under NH (O) in the State of Maharashtra on Hybrid Annuity Mode".

LIST-B

(Balance works are not forming part of Pre-COD)

Sr. No.	Details of work	Reason for not consider in Pre-COD	Balance work
1	Km 470+500 to km 472+130	Delay in GAD Approval of ROB from Railway Authorities	ROB A1-P1, P1-P2, P2-P3 span slab, construction of approach RE wall and other Miscellaneous works as per CA.
2	km 507+200 to km 508+320 (Selcoh Village)	Delay in handing over of land	Construction of Left hand side VUP, Construction of approach RE wall, and partially both side service road, Bus Bay and other Miscellaneous works as per CA.
3	km 514+660 to km 515+260 (Asola Village)	Land Not Available	Construction of Left hand side PUP, Construction of approach RE wall, both side service road, Bus Bay and other Miscelaneous works as per CA.
4	Km 467+525 to Km 470+500	Stretch is not operational	Minor finishing works are balance
5	Km 472+130 to Km 472+900	Stretch is not operational	Minor finishing works are balance
6	Construction of Highway Mini-nest at both side of Toll plaza	COS work	Construction of Highway Mini-Nest is in progress

DBL WARDHA BUTIBORI HIGHWAYS PRIVATE LIMITED

(CIN No. : U45309MP2017PTC043184)

Date:19.11.2019

AUTHORIZATION

NOW KNOW YE ALL AND THESE PRESENT WITHNESSTH THAT pursuant to this Authorization executed by Mr. Bharat Singh Director, DBL Wardha Butibori Highways Private Limited. (hereinafter referred to as "the Company") in favour of Mr. Kundan Kumar Das, S/o Mr. B.Das, presentlyresiding at MIG – 127, Sector 3 – D, Saket Nagar, Bhopal – 462024 (M.P), who is working as Authorized Signatory/Representative with the Company (hereinafter referred to as "the authorization holder") for the project of **Four Laning of Wardha-Butibori Section of NH-361 from Km465.500 to Km 524.690 (design length 59.190 km) under NH (O) in the state of Maharashtra on Hybrid Annuity Mode.** By virtue of resolution passed in the meeting of board of directors of Company held on dated 19th November 2019. I am authorized to delegate any or all acts things and deeds mentioned in the board resolution and hereby authorize Mr. Kundan Kumar Das, to represent the Company to cause, to be done all or any of the following acts, deed, matter and things on behalf of the Company in the matter mentioned as under

a. To appear, represent, depose and record statement, make and move application in capacity of Authorized Signatory/Representative, for and on behalf of the company and authorized to make sign, execute verify and register various applications, papers, documents, statements, agreements and certificates on company's behalf and authority todeposit amount incidental thereto and as may be required to submit before the lawful authority such as Mining, Revenue, Collectorate , PWD, MoRT&H, NHAI, Railway, Forest, Other Administrative Office(s) & Other Government Department (individually "Authority" and "collectively 'Authorities") incidental to the project.

b. Authority to collect and/or submit Provisional Certificate/Completion Certificate or produce/receive the Provisional Certificate/Completion Certificate, documentary evidence, measurement book, bill payment and/or to receive from the departments having authority in relation to the project viz. PWD, MoRT&H, NHAI, Collectorate, Mining, Forest & Other Government Department

Provided that this authorization shall cease to have effect or bind the Company from the date it is revoked or when the authorization holder will cease to be associated with the Company, whichever is earlier.

In witness whereof I Bharat Singh, Director for DBL Wardha Butibori Highways Private Limited. have executed these presents on this 19th day of the November 2019 at Bhopal
And I Kurdan Kumar Das authorization holder do hereby agree and accept the aforesaid.

Signed & delivered by

Bharat Singh
(Director)

Agreed & accepted

Kundan Kumar Das
(Authorized Signatory)

REGISTERED OFFICE : PLOT No. 5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL - 462016 M.P.
Ph. No. : 0755-4029996, Fax: 0755-4029999, E-mail : cb@dilipbuildcon.co.in

Annexure 6: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:08:53 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: 171200/44/2021/36	Prev Policy No	:
Cover Note No	: ER1700203536	Cover Note Dt	: 08/09/2020
Insured's Code	: 101443189	Issuing Office Code	: 171200
Insured's Name	: DBL Wardha Butibori Highways Pvt Ltd (GSTIN: 27AAGCD1481M1ZD)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: SLPL, Doctors Colony,Samaj Ekta Ghuhnirman Society, Somalwada, Nagpur, Nagpur, Maharashtra NAGPUR 440002	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	: 0265-2252274/0265-2357445/0265-2356033/

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000844 - 17/09/2020 GST INVOICE NO :2419487401 UIN :0

Gross Premium : 19,821 GST : 3,568 Stamp Duty : 1 Total : 23,389

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 4,40,48,544

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Wardha to Butibori

MAHARASHTRA - 440002

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		4,40,48,544

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

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This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 27, 2020 12:31:59 IST
Location: NOIDA
Reason: Signing Policy for OICL

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	: 171200/11/2021/227	Prev Policy No	: 171200/11/2020/449
Cover Note No	: 1700001712017	Cover Note Dt	: 22/11/2020
Insured's Name	: 101443189 - DBL Wardha Butibori Highways Pvt Ltd (GSTIN: 27AAGCD1481M1ZD)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P. WARDHA 442001	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 22/11/2020 TO MIDNIGHT OF 21/11/2021

Collection No & Dt : DC_I_IND 3214001185 - 26/11/2020 GST INVOICE NO :2419662549 UIN :0

Gross Premium : 64,77,790 GST : 11,66,002 Stamp Duty : .5 Total : 76,43,792

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	Go Digit General Insurance Limited	20.00
3	BAJAJ ALLINZE GEN INSURANCE	20.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Maintenance of Roads, Bridges
Four lanning of Wardha - Butibori Section of NH-361 from Km.465+500 to Km.524+690 (Design Length 59.190) under NH(O) in the in the State of Maharashtra on Hybrid Annuity mode

Deductible :

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Bridges	Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges) , Underpasses, Culverts, drainages, Utilities, Slabs Box, Causeways, Machineries(Full desc.-As per annexure)	218,74,62,313
Roads	Roads Incl Service Road,	

Place :
Date : 26/11/2020

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

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In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

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This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 27, 2020 12:52:09 IST
Location: NOIDA
Reason: Signing Policy for OICL

STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	: 171200/11/2021/228	Prev Policy No	: 171200/11/2020/450
Cover Note No	: -	Cover Note Dt	:
Insured's Name	: 101443180 - DBL Wardha Butibori Highways Pvt Ltd (GSTIN: 27AAGCD1481M1ZD)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0027R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P. WARDHA 442001	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2430054 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address Tel/Fax/Email	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007

Period of Insurance : FROM 00:00 ON 26/11/2020 TO MIDNIGHT OF 25/11/2021

Collection No & Dt : DC_I_IND 3214001185 - 26/11/2020 GST INVOICE NO :2410004477 UIN :0

Gross Premium : 5,03,404 GST : 1,01,413 Stamp Duty : .5 Total : 6,04,817

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	20.00
3	Go Digit General Insurance Limited	20.00

RISK DETAILS

1 Location of the Risk : Four lanning of Wardha - Butibori Section of NH-361 from Km.465+500 to Km.524+690
(Design Length 59.190) under NH(O) in the in the State of Maharashtra on Hybrid Annuity Mode

MAHARASHTRA
WARDHA
442001
WARDHA

Risk Description : Roads

SCHEDULE OF PREMIUM

TOTAL PREMIUM	5,03,404.00
ADD :IGST	1,01,413.00

Place :
Date : 26/11/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

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May 06, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203384135700000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203384135700000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office:
1st Floor,HDFC House, 165 - 166 Backbay Reclamation,
H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address:
D-301, 3rd Floor, Eastern Business District (Magnet Mall),
LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203384135700000 Employees Compensation Insurance

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)	Business	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		Phone		E Mail		Policy Issuance Date	06/05/2020

Period of Insurance	From Date & Time	02/05/2020 00:01 AM	To Date & Time	01/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹. Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹. Unlimited

EC-13-0005
3114203384135700000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 7: Change of scope

S. No	Description	Value of COS Approved (Rs in Crores)	Status of the work at site	Status of COS
1	Change in the Span arrangement of the ROB resulting increasing in length of the ROB at Km.471+516 as per the GAD approved by the Railway Authorities.	17.44 Cr approved by NHAI Competent Authority	Completed	Ref: NHAI letter No150990 dated 13.03.2020
2	Additional Minor Bridge at Km.465+700 for Canal Crossing. Minor Bridge is nor proposed in Schedule B	0.43 Cr approved by NHAI Competent Authority	Completed	Ref: NHAI letter No150990 dated 13.03.2020
3	Additional Box Culvert at Km.0+150 on Ramp 2. Minor Bridge is nor proposed in Schedule B	0.602 Cr Recommended by the IE	Completed	IE has resubmitted the proposal to the Authority vide letter No.6464 dated 13.06.2019, complying the comments made by the Authority. Proposal is under scrutiny with the Authority.
4	Highway Mini nest	1.51 Cr approved by NHAI Competent Authority	Completed	Ref: NHAI letter No.1646 dated 19.09.2019
5	Implementation of Hybrid ETC & installation of Medium Speed Weigh in Motion	0.42 Cr approved by NHAI Competent Authority	Completed	Ref: NHAI letter No.2243 dated 30.11.2019

Annexure 8: Project Photos

60
km/h

60
km/h

SHREM FINANCIAL PRIVATE LIMITED

Four Laning of Mahagaon to Yavatmal section of NH-361 from Km.320.580 to Km.400.575 (Package-II) in the State of Maharashtra under NHDP Phase IV on Hybrid Annuity Mode

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Laning of Mahagaon to Yavatmal section of NH-361 from Km.320.580 to Km.400.575 (Package-II) in the State of Maharashtra under NHDP Phase IV on Hybrid Annuity Mode

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Mahagaon-Yavatmal	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
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DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL MAHAGAON YAVATMAL HIGHWAYS PRIVATE LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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RUKY PROJECTS PRIVATE LIMITED
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www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
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CHAPTER 1. INTRODUCTION

1.1 General

DBL MAHAGAON YAVATMAL HIGHWAYS PRIVATE LIMITED (herein after referred to as the "Concessionaire"), had augmented the existing two-lane road Section of NH 361 from Mahagaon to Yavatmal in the state of Maharashtra, in accordance with the provisions of the Concession Agreement (CA) executed with National Highways Authority of India (herein after referred to as the "Authority") on 9th June 2017.

Project road starts at Km. 320+580 located near Mahagaon and ends at Km. 400+575 near Yavatmal on NH-361. The design length of the Project is 79.995 Km. The Project Highway passes through the urban stretches of Amboda, Lonbhel, Kolwan, Bhamb, Arjuna, Hivari and Kinhi located along the Project Corridor. Project location map is provided at **Figure 1.1.**

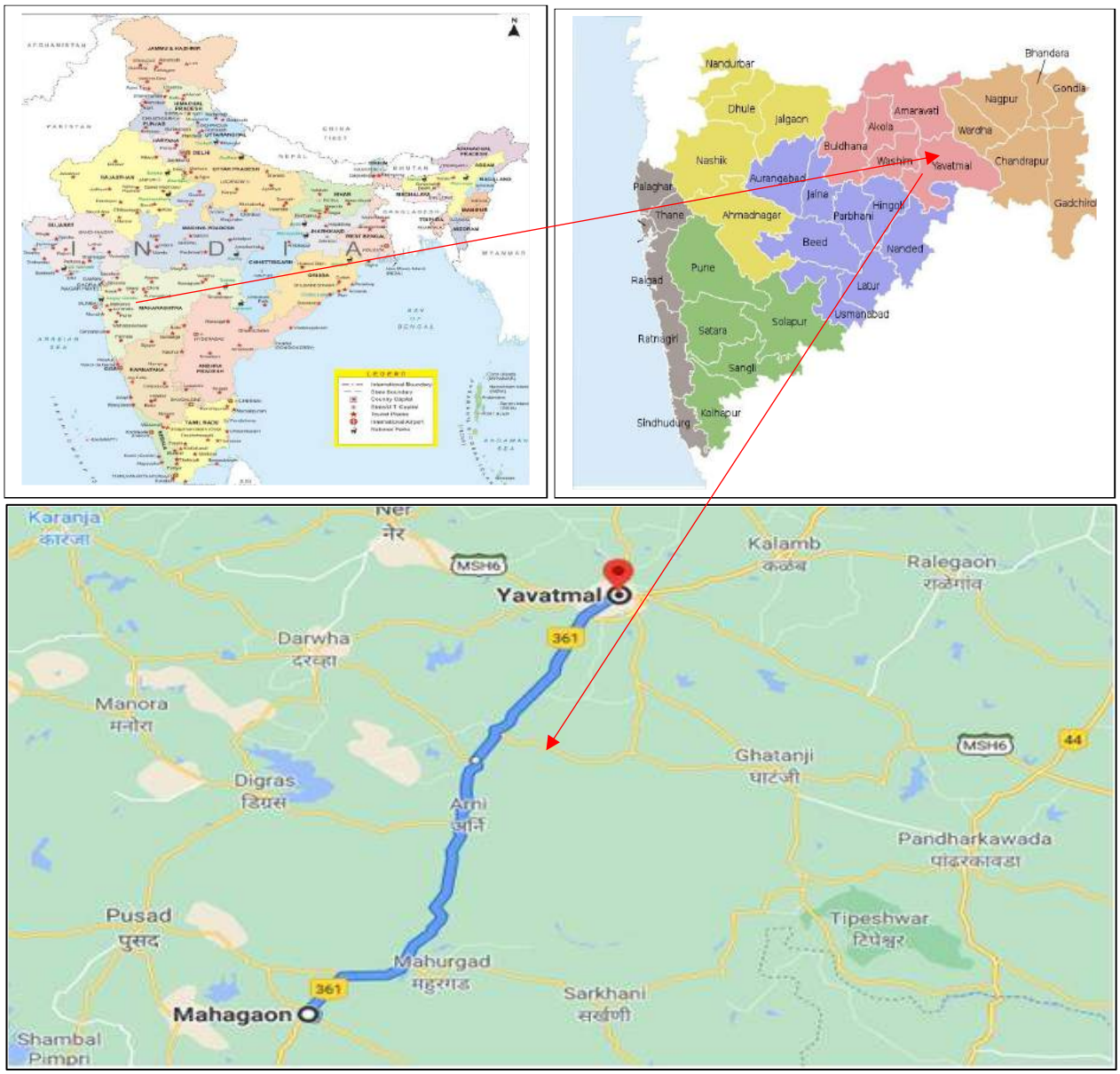

Figure 1.1: Project Location Map

SHREM INFRAVENTURE PVT. LTD. (SIPL) acquired DBL MAHAGAON YAVATMAL HIGHWAYS PRIVATE LIMITED vide agreement dated 26 March 2018.

SHREM FINANCIAL PVT. LTD (SFPL). appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Four Laning of Mahagaon to Yavatmal Section of NH-361 from Km.320.580 to Km.400.575 (Design Length79.995) in the State of Maharashtra under NHDP-IV on Hybrid Annuity Mode.
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	DBL Mahagaon Yavatmal Highways Private Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	28.03.2017
7	Date of Agreement	09.06.2017
8	Design Length as per Schedule B of CA	79.995 Kms.
9	Actual Length Constructed	72.089 Kms.
10	Project Lane Configuration	Four Lane
11	Bid Project Cost	1160.64
12	EPC Cost	857.76Cr
13	Nature of contract	Hybrid Annuity Mode
14	Toll collected by	The Authority
15	Concession Period	15 years from the Commercial Operation Date (**COD**)
16	Appointed date	28.02.2018
17	Concession End Date	22.05.2035
18	Construction Period	910 days from the Appointed Date
19	Schedule Completion Date	27.02.2020
20	Date of issuance of Provisional Certificate (COD)	23.05.2020
21	Bonus on early completion	Applicable as per Cl.23.5 of CA
22	Date of issuance of Completion Certificate	---
23	Annuity Amount	As per Cl.23.4 and Cl.23.6.3 of CA
24	Total Number of Annuities payable during concession period	30 Nos.
25	First Annuity Payment Date	23.11.2020
26	Total Number of Annuity Payments received as on January 2021	1 No.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of Main Carriageway with Rigid Pavement (Considering both sides)	79.995 Kms.	---	79.995 Kms.
2	Total Length of Main Carriageway with Flexible Pavement (Considering both sides)	---	---	---
3	Total length of Service Roads	14.59 Kms.	0.750 Km.	15.340 Kms.
4	Total length of Slip Roads	10.54 Kms.	---	10.54 Kms.
5	No of Toll Plazas	1 No.	---	1 No.
6	No of Bus Bays with Bus Shelters	38 Nos.	---	38 Nos.
7	Number of Truck Lay Bays	1 No.	---	1 No.
8	No of Rest Areas	1 No.	---	1 No.
9	No of Major Junctions	0 Nos.	---	7 Nos.*
10	No of Minor Junctions	50 Nos.	---	45 Nos.*
11	No of Vehicular underpasses	5 Nos.	---	5 Nos.
12	No of Light Vehicular underpasses	5 Nos.	---	5 Nos.
13	No of Small Vehicular Underpass	Nil	1 No	1 No
14	No of Pedestrian underpasses	3 Nos.	---	3 Nos.
15	No of Subways	Nil	---	Nil
16	No of Flyovers	Nil	---	Nil
17	No of Major Bridges	2 Nos.	---	2 Nos.
18	No of Minor Bridges	47 Nos.	---	39 Nos.
19	No of Hume Pipe Culverts	137Nos.	---	133Nos.*
20	No of Box / Slab Culverts	24 Nos.	---	24 Nos.

*As per site requirement 7 Major junctions are developed. 5 Minor junctions are not developed as per site condition.

* Four minor bridges closely are merged and constructed as 2 no of minor bridges. 6 Minor bridges are not constructed due to LA problem.

*4 Pipe culverts are not constructed due to LA Problem

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

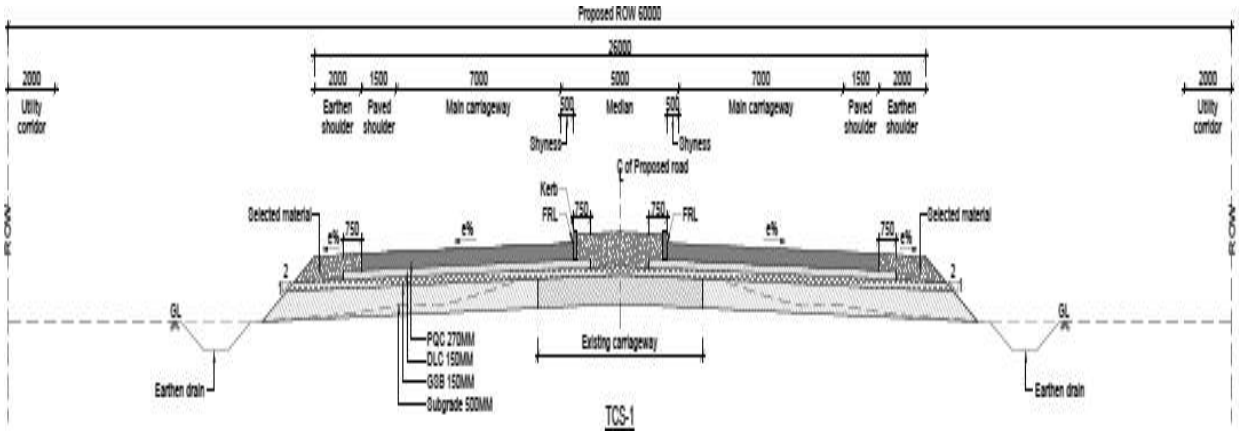

Figure 2.1: TCS-1 Typical Cross Section Of 4-Laning by Concentric Widening With 4.0m Raised Median

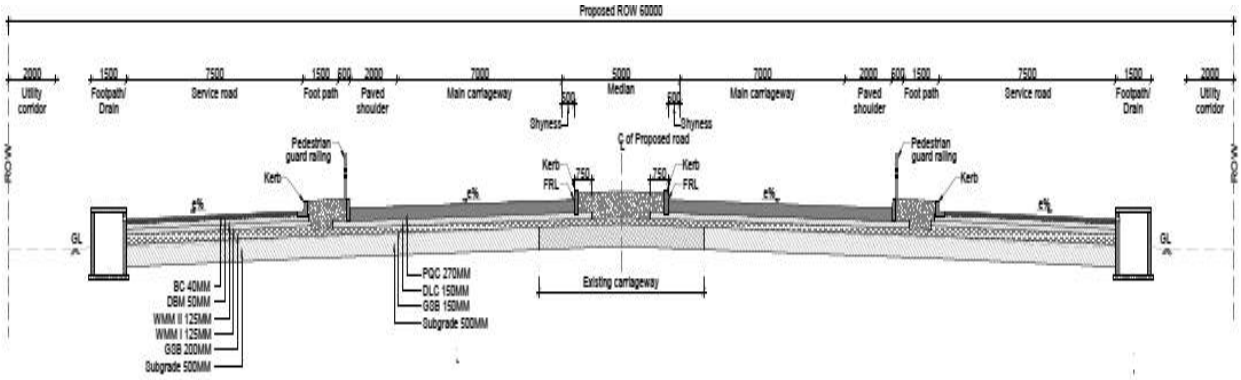

Figure 2.2: TCS-2 Built-Up Section-Plain /Rolling Terrain with Service Roads

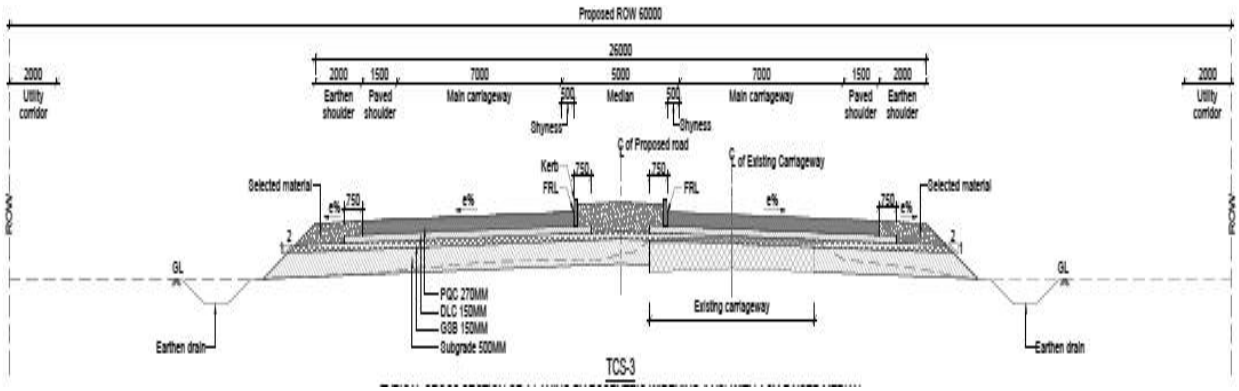

Figure 2.3: TCS-3 (Typical Cross Section Of 4-Laning By Eccentric Widening (LHS) With 4.0m Raised Median

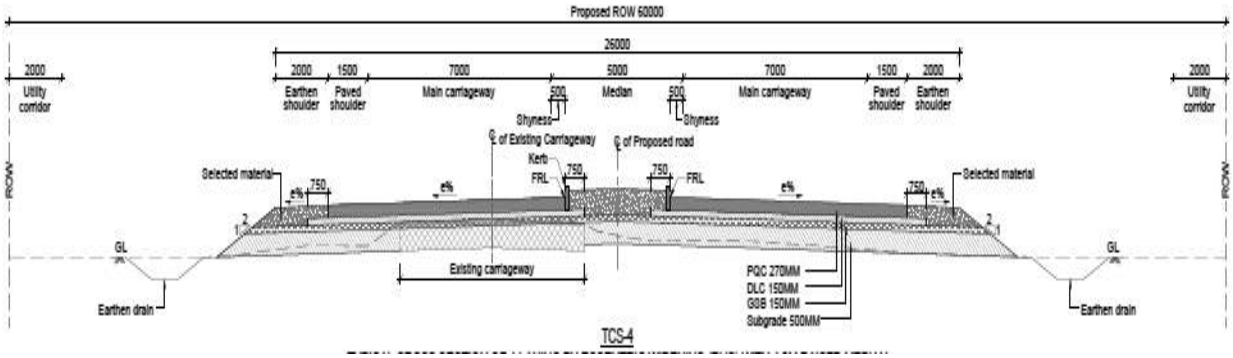

Figure 2.4: TCS-4 Typical Cross Section Of 4-Laning By Eccentric Widening (RHS) With 4.0m Raised Median

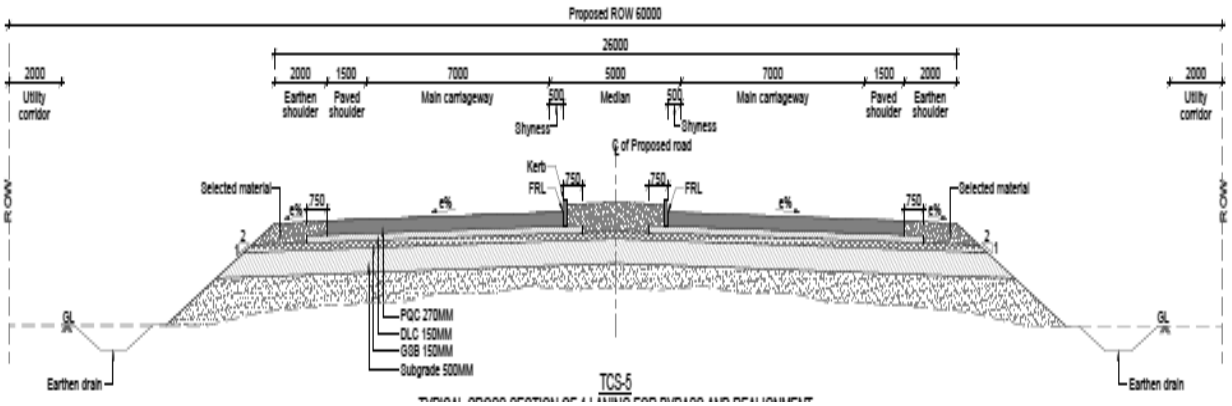

Figure 2.5: TCS-5 Typical Cross Section Of 4-Laning for Bypass and Realignment

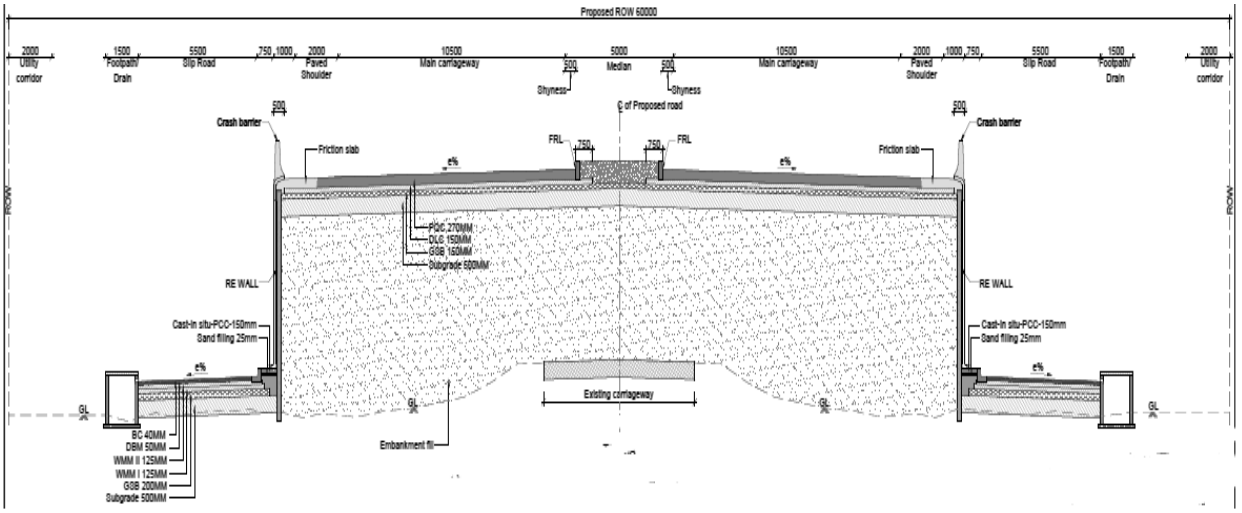

Figure 2.6: TCS-6A Typical Four Lane Underpass Cross Section with Slip Roads in the Existing Road

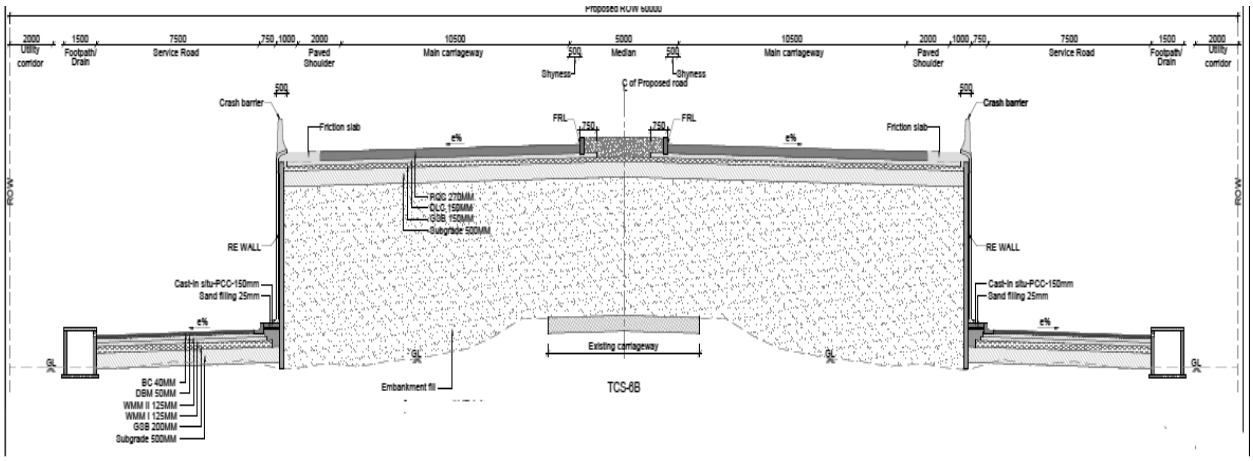

Figure 2.7: TCS-6B Typical Four Lane Underpass Cross Section with Service Roads in The Existing Road

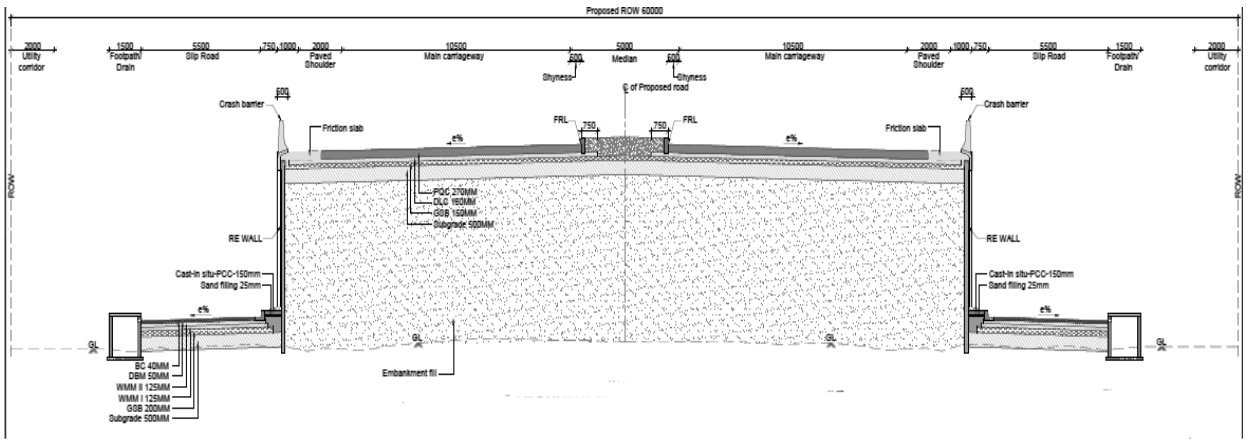

Figure 2.8: TCS-6C Typical Four Lane Underpass Cross Section With Slip Roads In Bypass & Realignment

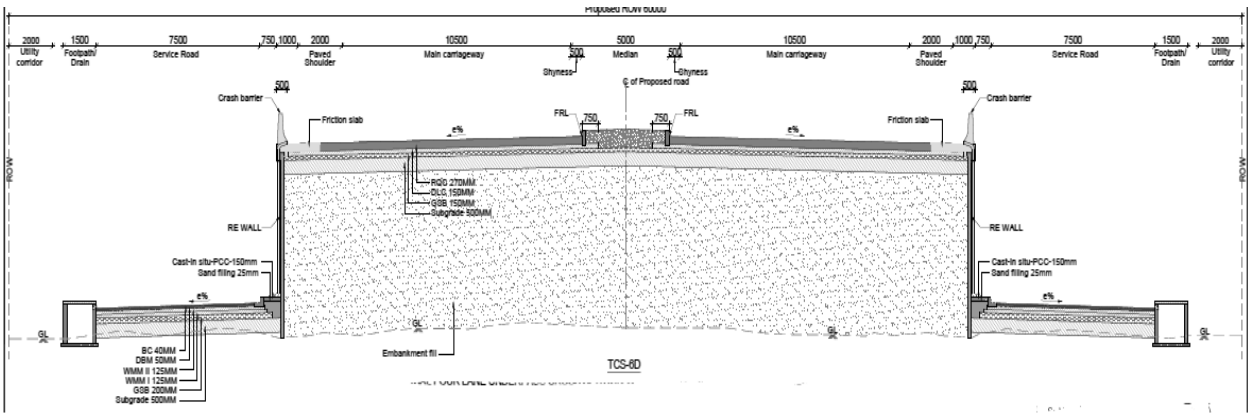

Figure 2.9: TCS-6D Typical Four Lane Underpass Cross Section with Service Roads in Bypass & Realignment

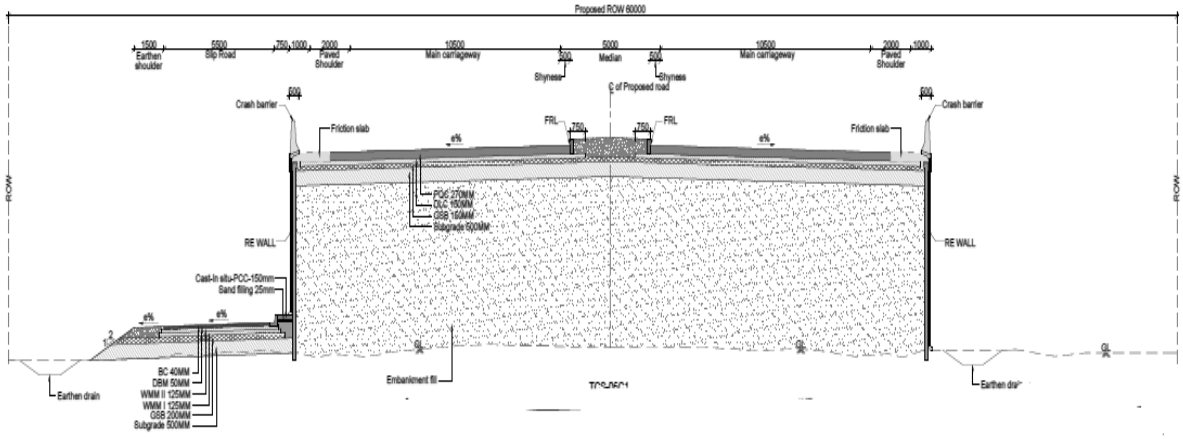

Figure 2.10:TCS-6C1 Typical Four Lane Underpass Cross Section with Slip Roads in Bypass & Realignment

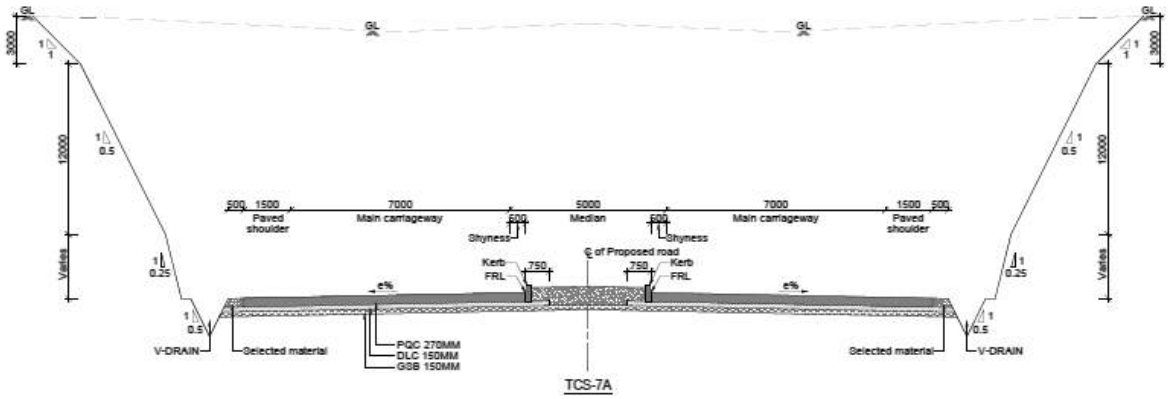

Figure 2.11:TCS-7A Typical Cross Section of 4-Lane Carriageway (Both Side Cutting)

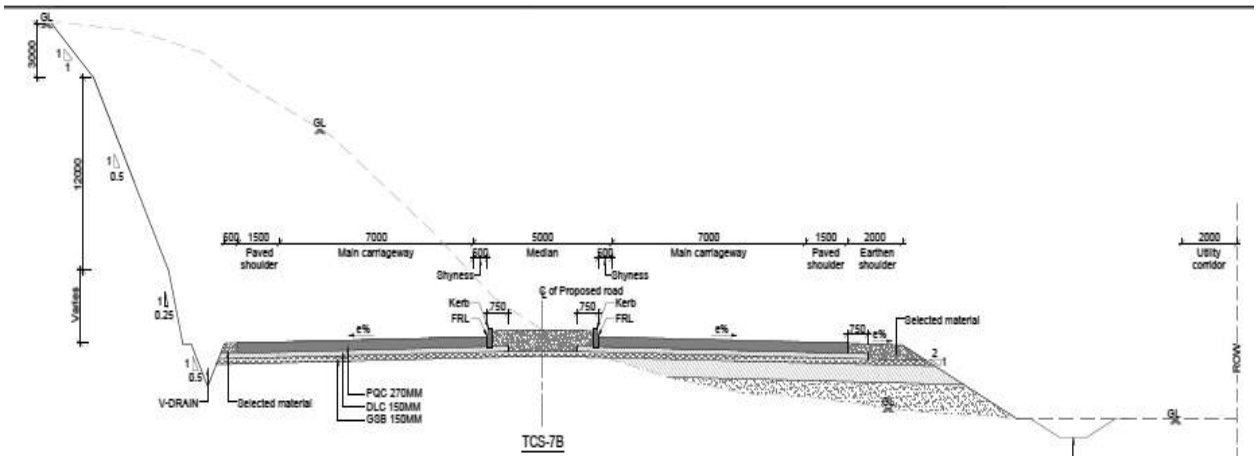

Figure 2.12:TCS-7B Typical Cross Section of 4-Lane Carriageway (One Side Cutting)

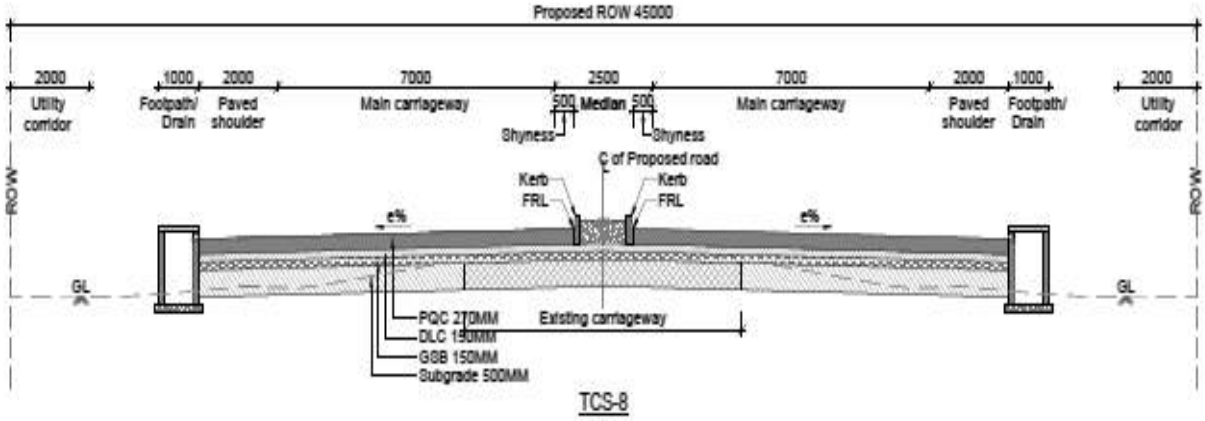

Figure 2.13: TCS-8 Typical cross section of 4-laning by concentric widening With 1.5m raised median for restricted row

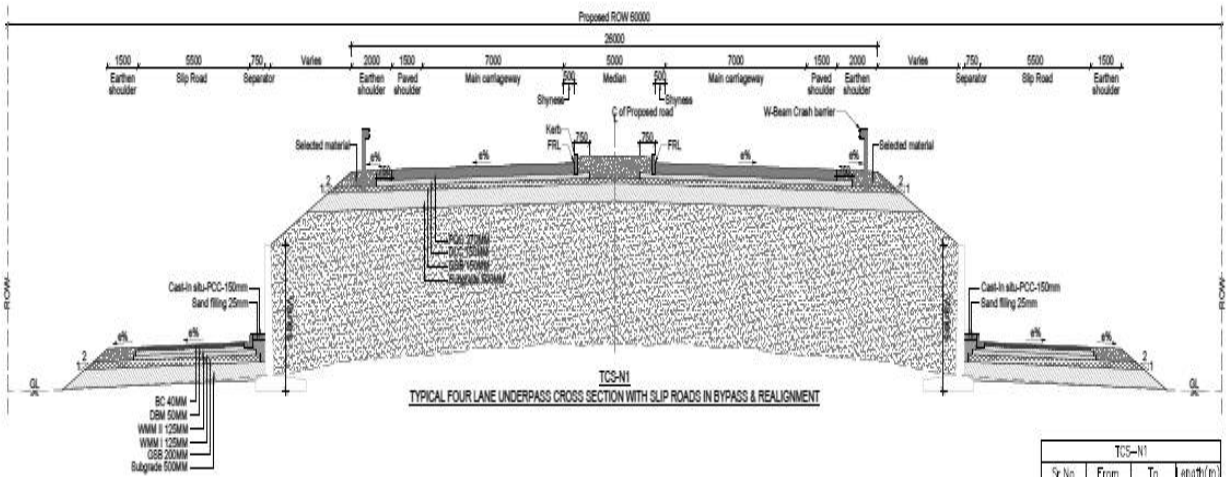

Figure 2.14: TCS-N1 Typical Four Lane Underpass Cross Section with Slip Roads in Bypass & Realignment

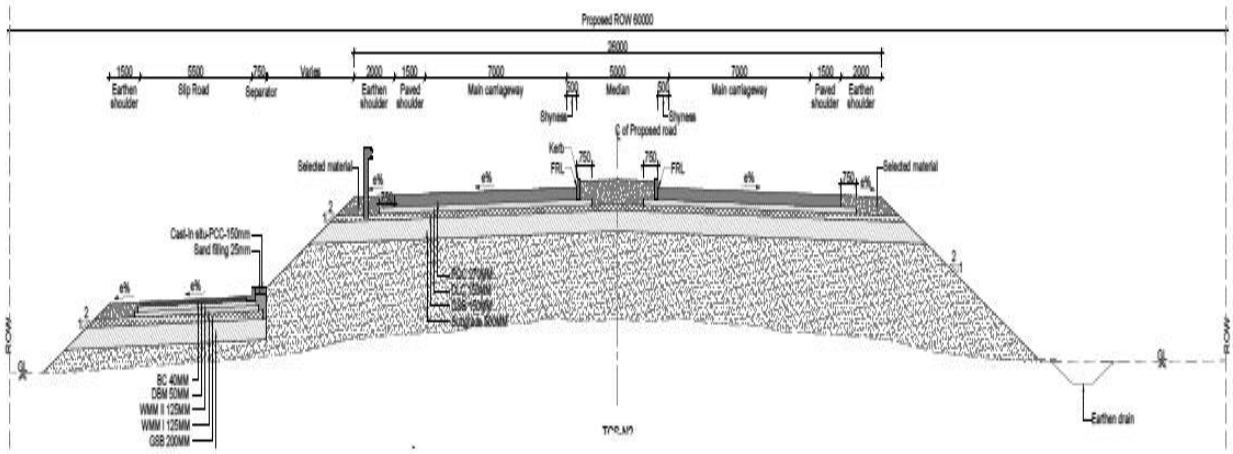

Figure 2.15: TCS-N2 Typical Four Lane Underpass Cross Section with Slip Roads in Bypass & Realignment

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Length (Kms.)	TCS TYPE
1	320+580	320+940	0.360	3
2	320+940	322+250	1.310	4
3	322+250	323+630	1.380	6B
4	323+630	324+440	0.810	4
5	324+440	326+220	1.780	3
6	326+220	327+310	1.090	6A
7	327+310	329+470	2.160	4
8	329+470	329+980	0.510	5
9	329+980	330+160	0.180	4
10	330+160	330+870	0.710	5
11	330+870	331+610	0.740	6C
12	331+610	331+960	0.350	5
13	331+960	332+070	0.110	4
14	332+070	332+260	0.190	5
15	332+260	333+910	1.650	4
16	333+910	334+810	0.900	6A
17	334+810	337+060	2.250	3
18	337+060	337+230	0.170	4
19	337+230	337+400	0.170	5
20	337+400	337+690	0.290	3
21	337+690	338+280	0.590	1
22	338+280	339+240	0.960	4
23	339+240	339+340	0.100	3
24	339+340	339+870	0.530	4
25	339+870	341+260	1.390	3
26	341+260	341+530	0.270	5
27	341+530	341+880	0.350	3
28	341+880	342+030	0.150	5
29	342+030	343+090	1.060	4
30	343+090	343+200	0.110	3
31	343+200	343+540	0.340	4
32	343+540	344+200	0.660	5
33	344+200	344+230	0.030	7B
34	344+230	345+200	0.970	7A
35	345+200	345+740	0.540	4
36	345+740	346+020	0.280	5
37	346+020	346+740	0.720	4
38	346+740	347+010	0.270	5

S. No.	From (Km.)	To (Km.)	Length (Kms.)	TCS TYPE
39	347+010	347+460	0.450	4
40	347+460	347+620	0.160	5
41	347+620	348+380	0.760	3
42	348+380	349+540	1.160	6B
43	349+540	349+750	0.210	2
44	349+750	350+440	0.690	4
45	350+440	350+740	0.300	4
46	350+740	351+460	0.720	4
47	351+460	353+010	1.550	3
48	353+010	354+500	1.490	4
49	354+500	354+750	0.250	5
50	354+750	355+320	0.570	4
51	355+320	355+520	0.200	3
52	355+520	356+720	1.200	4
53	356+720	356+930	0.210	3
54	356+930	357+140	0.210	4
55	357+140	357+890	0.750	6B
56	357+890	358+640	0.750	3
57	358+640	359+620	0.980	5
58	359+620	360+170	0.550	6C
59	360+170	360+360	0.190	6C1
60	360+360	360+570	0.210	5
61	360+570	361+000	0.430	N1
62	361+000	361+410	0.410	5
63	361+410	361+780	0.370	4
64	361+780	362+040	0.260	5
65	362+040	362+660	0.620	4
66	362+660	363+080	0.420	5
67	363+080	363+290	0.210	6A
68	363+290	363+810	0.520	6C
69	363+810	363+970	0.160	6A
70	363+970	364+980	1.010	1
71	364+980	365+570	0.590	4
72	365+570	368+960	3.390	3
73	368+960	369+460	0.500	4
74	369+460	370+110	0.650	5
75	370+110	371+210	1.100	6A
76	371+210	371+790	0.580	5
77	371+790	376+320	4.530	3
78	376+320	377+360	1.040	5
79	377+360	377+710	0.350	N2

S. No.	From (Km.)	To (Km.)	Length (Kms.)	TCS TYPE
80	377+710	378+260	0.550	5
81	378+260	379+030	0.770	4
82	379+030	379+200	0.170	5
83	379+200	379+440	0.240	4
84	379+440	379+900	0.460	5
85	379+900	380+010	0.110	4
86	380+010	380+400	0.390	5
87	380+400	380+480	0.080	4
88	380+480	380+940	0.460	3
89	380+940	382+100	1.160	6B
90	382+100	384+790	2.690	3
91	384+790	385+570	0.780	4
92	385+570	387+150	1.580	5
93	387+150	387+270	0.120	3
94	387+270	387+520	0.250	5
95	387+520	387+790	0.270	4
96	387+790	388+000	0.210	5
97	388+000	388+530	0.530	3
98	388+530	389+080	0.550	5
99	389+080	389+380	0.300	5
100	389+380	389+540	0.160	5
101	389+540	389+740	0.200	3
102	389+740	390+250	0.510	5
103	390+250	390+500	0.250	3
104	390+500	390+580	0.080	5
105	390+580	391+070	0.490	5
106	391+070	391+185	0.115	8
107	391+185	391+385	0.200	8
108	391+385	391+465	0.080	8
109	391+465	392+470	1.005	5
110	392+470	393+500	1.030	4
111	393+500	393+770	0.270	5
112	393+770	393+870	0.100	6D
113	393+870	394+980	1.110	6B
114	394+980	395+240	0.260	3
115	395+240	395+360	0.120	5
116	395+360	395+810	0.450	5
117	395+810	395+920	0.110	5
118	395+920	396+060	0.140	3
119	396+060	396+430	0.370	5
120	396+430	396+710	0.280	3

S. No.	From (Km.)	To (Km.)	Length (Kms.)	TCS TYPE
121	396+710	396+770	0.060	1
122	396+770	397+360	0.590	3
123	397+360	398+120	0.760	6B
124	398+120	400+060	1.940	3
125	400+060	400+575	0.515	2

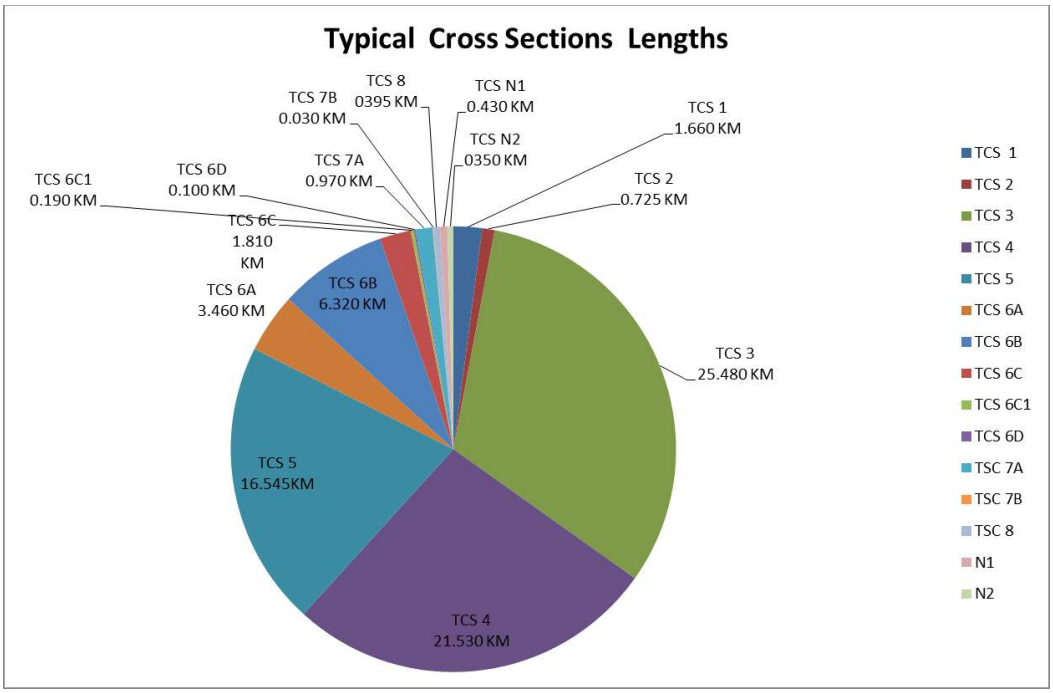

Figure 2.16: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of water from the Carriageway and to avoid accumulation of drainage from the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are constructed in open and rural areas.

2.4 Service Roads

Service Roads and Slip Roads are provided as per the provisions of Schedule B of the Concession Agreement. The details are provided below.

Table 2.3: List of Service Road locations

S. No.	From (Km.)	To (Km.)	Side	Length (Kms.)	Remarks
1	322+240	323+620	BHS	2.760	40m on LHS is not constructed due to LA Problem*
2	348+340	349+710	BHS	2.740	270m on LHS is not constructed

S. No.	From (Km.)	To (Km.)	Side	Length (Kms.)	Remarks
					due to LA Problem*
3	357+100	357+850	BHS	1.500	
4	380+740	381+900	BHS	2.320	
5	393+620	394+830	BHS	2.420	
6	397+200	397+960	BHS	1.520	230m on RHS is not constructed due to LA Problem*
7	399+910	400+575	BHS	1.330	
			Total	**14.590**	

Note: * SRPL confirmed upon handing over of land uncompleted service roads shall be completed by the EPC Contractor at his cost and risk as provided under the EPC Agreement.

Table 2.4: List of Slip Road locations

S. No.	From Chainage (Km.)	To Chainage (Km.)	Side	Length (Kms.)
1	326+210	327+300	BHS	2.180
2	330+860	331+600	BHS	1.480
3	333+900	334+800	BHS	1.800
4	359+580	360+130	BHS	1.100
5	362+790	363+680	BHS	1.780
6	369+900	371+000	BHS	2.200
			Total	**10.540**

2.5 Realignment

As per the provisions of Schedule B of the Concession Agreement Realignment is provided at the following locations.

Table 2.5: Realignment stretches

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)
1	329+460	329+970	0.510
2	330+150	331+950	1.800
3	332+060	332+250	0.190
4	337+220	337+390	0.170
5	341+250	341+520	0.270
6	341+870	342+020	0.150
7	343+530	344+540	1.010
8	345+730	346+010	0.280
9	346+730	346+970	0.240
10	347+420	347+580	0.160
11	354+460	354+710	0.250
12	358+600	361+400	2.800

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)
13	361+540	361+810	0.270
14	362+360	362+790	0.430
15	363+000	363+520	0.520
16	369+250	371+580	2.330
17	376+110	378+060	1.950
18	378+830	379+000	0.170
19	379+240	379+700	0.460
20	379+810	380+200	0.390
21	381+000	381+500	0.500
22	385+390	386+970	1.580
23	387+090	387+340	0.250
24	387+610	387+820	0.210
25	388+350	389+360	1.010
26	389+560	390+070	0.510
27	390+320	390+885	0.565
28	391+280	392+300	1.020
29	393+350	393+620	0.270
30	395+080	395+760	0.680
31	395+900	396+270	0.370
		Total	**21.315**

2.6 Intersections

The details of the Major & Minor junctions are provided in Schedule B of the Concession Agreement. As per site condition 7 nos. of Major Junctions and 45 nos. of Minor Junctions are developed. Details are given below.

Table 2.6: List of Major Junctions

S. No.	Design Chainage (Km.)	Type of Junction	Side
1.	334+300	Y-Junction	RHS
2.	349+020	T-Junction	LHS
3.	357+525	Y-Junction	RHS
4.	370+733	X-Junction	LHS
5.	370+734	X-Junction	RHS
6.	381+502	X-Junction	BHS
7.	394+411	Y-Junction	RHS

Table 2.7: List of Minor Junctions

S. No.	Design Chainage (Km.)	Type of Junction	Side
1	321+799	T-Junction	LHS
2	322+702	Y-Junction	RHS
3	325+000	Y-Junction	LHS
4	325+600	Y-Junction	RHS

S. No.	Design Chainage (Km.)	Type of Junction	Side
5	325+861	Y-Junction	LHS
6	326+810	Y-Junction	LHS
7	328+750	X-Junction	LHS
8	328+758		RHS
9	337+900	Y-Junction	RHS
10	338+174	Y-Junction	LHS
11	339+865	Y-Junction	LHS
12	341+292	X-Junction	LHS
13	341+288		RHS
14	343+144	Y-Junction	RHS
15	352+286	T-Junction	LHS
16	352+426	T-Junction	RHS
17	352+979	T-Junction	LHS
18	353+314	Y-Junction	RHS
19	354+081	Staggered	RHS
20	355+262	Y-Junction	LHS
21	355+815	T-Junction	LHS
22	356+778	Y-Junction	RHS
23	365+964	X-Junction	LHS
24	365+953		RHS
25	366+127	T-Junction	LHS
26	367+484	Staggered	LHS
27	367+534		RHS
28	368+712	T-Junction	RHS
29	369+346	T-Junction	LHS
30	369+600	Y-Junction	LHS
31	371+725	Y-Junction	LHS
32	371+908	Y-Junction	LHS
33	373+118	Y-Junction	RHS
34	375+986	T-Junction	RHS
35	376+094	Y-Junction	LHS
36	376+580	Y-Junction	RHS
37	377+344	X-Junction	BHS
38	378+300	Y-Junction	RHS
39	382+032	Staggered	RHS
40	391+575	Y-Junction	LHS
41	392+781	T-Junction	RHS
42	398+913	T-Junction	LHS
43	399+052	Y-Junction	RHS
44	400+138	T-Junction	LHS
45	400+377	Y-Junction	LHS

2.7 Grade Separated Structures and underpasses

As per the provisions of Schedule B of the CA 3 Nos. of Pedestrian Underpass, 5 Nos. of Light Vehicular Underpass, 1 No of small vehicular underpass and 5 Nos. of Vehicular Underpass structures are provided in the Project Corridor. Details are provided in **Chapter 4**.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Carriageway and Pavement Details

Summary of Carriageway is given below:

Table 2.8: Summary of Carriageway and Pavement Details

S. No.	Description	Flexible (Km.)	Rigid (Km.)
1	Service Roads	14.590	
2	Slip Roads	10.540	
3	4 Lane Paved shoulder		79.995
4	Total Length	21.130	79.995
TYPE OF ALIGNMENT			
5	Widening		49.745
6	Realignment		16.545
7	Flyover approaches		12.210
8	Cutting Section		1.495
9	Total Length of the Project		79.995

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.9: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Underpasses
1	Retained					
2	Widening		21	51	3	
3	Reconstruction		11	46	13	
4	New	2	15	40	8	1 No. PUP 3 Nos. VUP 10 Nos. LVUP
5	Improvement					
	Total	**2**	**47**	**137**	**24**	**14**

2.11 Toll Plazas

- Toll Plaza is located on the project road at Km. 382+920, which comprises of eight lanes.
- The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m.

- Between each toll lane of the toll plaza, traffic islands are constructed to accommodate tollbooth.
- Protective barriers of reinforced concrete and traffic impact attenuators are placed in the front of each island to prevent out of control approaching vehicles crashing into the tollbooth.
- The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement.
- Total 7 Nos. toll booths are provided in toll plaza.
- Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/Bus shelters/Truck Lay bye

As per provisions of Schedule C of CA bus shelters are provided at 38 locations. Details are provided below.

Table 2.10: List of Bus shelters

S. No.	Location at Km.	S.No.	Location at Km.
1	323+000	20	323+100
2	331+360	21	331+140
3	334+450	22	334+550
4	337+750	23	338+000
5	340+750	24	340+950
6	342+850	25	342+800
7	349+300	26	349+310
8	352+060	27	354+400
9	357+620	28	356+900
10	361+300	29	361+400
11	362+235	30	362+950
12	364+900	31	364+980
13	366+130	32	366+280
14	368+600	33	368+750
15	370+400	34	370+700
16	375+700	35	375+650
17	381+100	36	381+150
18	393+100	37	392+800
19	395+070	38	395+120
Truck lay bye			
1	384+300	LHS	

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Median plantation and Avenue plantation on both sides of the Project Corridor is provided all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza, Bus bays and Truck Lay byes and is functional.

Mini Nest at Km.383+400

Truck Lay bye at Km.384+300

Rest area at Km.385+300

Weigh Bridge at Km.383+200

Km.391+800

Junction at Km.392+800

Figure 2.17: Photos of Project facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Four lane length	79.995 km
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	52 Nos.
6	Toll Plaza	At Km.382+920
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	38 Nos.
10	Truck lay bye	1 No.
11	Highway Lighting	Provided as per requirement
12	Avenue plantation	Provided

3.3 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition

As per the provisions of Schedule B, the Concessionaire has constructed the Main Carriageway with Rigid Pavement and Service & Slip Roads with Flexible Pavement. Pavement Design submitted by the Concessionaire was reviewed and found in accordance with the provisions of IRC:37 and IRC 58. Design parameters are provided below. CBR considered for Flexible Pavement was 13% and Effective CBR for

Rigid pavement was 7%. Based on CBR values, axle loads and Traffic the crust designed is satisfactory. The crust details are given below.

Table 3.2: For Rigid pavement –Main carriage way

1	PQC	270mm
2	DLC	150mm
3	GSB	150mm
5	Sub Grade	500mm

Table 3.3: Flexible Pavement-Service Roads

1	BC	40mm
2	DBM	60mm
3	WMM	250mm
4	GSB	200mm
5	Sub Grade	500mm

- Based on the review on Designs submitted by the Concessionaire, the above crust is safe for project.

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19. The summary of Pavement condition is given below.

Table 3.4: Pavement condition summary

From (Km)	To (Km)	Length (Kms.)	Condition
320+580	400+575	79.995	Good

Km. 320+000

Km. 389+100

Km.391+613

Km.391+800

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990**.**

4.2 Inventory of Structures

The list of structures along this project highway.

Table 4.1 : List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	02 Nos.
2	Minor Bridge	39 Nos.
3	Underpasses	14 Nos.
4	Pipe culverts	133 Nos.
5	Slab/Box Culverts	24 Nos.

The major bridges of superstructure provided is RCC Solid slab resting on RCC wall type piers and abutments with open foundation. The minor bridges of superstructure are RCC solid slab/RCC Box type and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 1.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.3 Details of Major Bridges

The total length of the major bridge at Km 360+485 is 75.0m with 5 spans. The superstructure consists of RCC solid slab. Each pier and whereas abutment is regular RCC Circular type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric/Tar paper bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck.

The total length of the major bridge at Km 376+231 is 90.0m with 6 spans. The superstructure consists of RCC solid slab. Each pier and whereas abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric/Tar paper bearings. Expansion joints are of Strip seal type. RCC railings have been provided on both sides of the deck

Table 4.2: List of Major Bridge

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m.)
1	360+485	3 x 25.0	75.0
2	376+231	6 x 15.0	90.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Km.376+231

Figure 4.1: Representative photos of Major Bridges

4.4 Details of Minor Bridges

The details of minor bridges along the project stretch are listed. The type of superstructure for minor bridges is RCC solid slab/RCC Box type and the substructure is PCC/RCC conventional wall/Circular type, supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers and Railings are provided for most of the structures.

Table 4.3: List of Minor Bridge

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m.)	Description
1	321+151	2 x 6.5	13	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
2	323+321	3X7.0	21	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
3	324+256	1x6.0	6	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
4	325+915	3X7.0	21	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
5	326+082	3x12.5	37.5	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier/Railing, bituminous wearing coat, and Tar paper/Elastomeric Bearings and Strip seal expansion joints.
6	329+645	4 x 10.0	40	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
7	334+660	3x8.33	24.99	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
8	336+400	3x4.0	12	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
9	336+549	2x4.7	9.4	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
10	337+468	2X10.0	20	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
11	339+168	1X7.0	7	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
12	340+225	1X8.0	8	It has RCC Box structure. It has RCC Crash

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m.)	Description
				barrier/Railing, bituminous wearing coat.
13	340+315	3X9.7	29.1	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier/Railing, bituminous wearing coat, and Tar paper/Elastomeric Bearings and Strip seal expansion joints.
14	343+468	2x13.5	27	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier/Railing, bituminous wearing coat, and Tar paper/Elastomeric Bearings and Strip seal expansion joints.
15	347+403	2X10.0	20	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
16	359+399	3x7.0	21	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
17	359+848	3x7.0	21	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
18	362+868	1x13.5	13.5	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
19	365+373	2x4.5	9	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
20	371+557	2x12.5	25	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier/Railing, bituminous wearing coat, and Tar paper/Elastomeric Bearings and Strip seal expansion joints.
21	373+609	2x8.9	17.8	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
22	373+704	3x3.0	9	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
23	375+165	2x4.5	9	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
24	377+321	2x10.5	21	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
25	378+593	1x10.0	10	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
26	381+804	2x6.9	13.8	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
27	383+748	3x3.7	11.1	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
28	384+960	2x6.0	12	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
29	386+480	4x10.0	40	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
30	387+247	3x5.0	15	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
31	389+553	2x8.0	16	It has RCC Box structure. It has RCC Crash

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m.)	Description
				barrier/Railing, bituminous wearing coat.
32	390+816	1x20.0	20 (skew)	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
33	391+043	3x6.6	19.8	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
34	391+255	3x4.2	12.6	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
35	393+111	2x6.0	12	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
36	393+810	2x7.5	15	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
37	394+722	2x5.1	10.2	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
38	395+290	1x7.5	7.5	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.
39	399+903	2x9.0	18	It has RCC Box structure. It has RCC Crash barrier/Railing, bituminous wearing coat.

Km.386+480

Km.393+111

Figure 4.2: Representative photos of Minor Bridges.

4.5 Details of Underpasses

The details of Underpasses in the project stretch are listed below. The type of superstructure for underpass is RCC Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures

Table 4.4: List of Underpasses

S. No.	Chainage (Km.)	Type of Structure	Span	Total Length of Bridge (m.)	Description
1	322+870	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
2	326+810	VUP	1x12.0	12.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.

S. No.	Chainage (Km.)	Type of Structure	Span	Total Length of Bridge (m.)	Description
3	334+300	VUP	1x22.4	22.4	It has RCC Girder type & wall type abutment. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints.
4	349+020	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
5	357+525	PUP	1x7.0	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
6	360+165	VUP	1x12.0	12.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
7	360+350	LVUP	1x7.0	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
8	360+600	LVUP	1x7.0	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
9	363+500	VUP	1x12.0	12.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
10	370+733	VUP	1x12.0	12.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
11	377+344	PUP	1x7.0	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
12	381+502	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
13	394+411	PUP	1x7.0	7.0	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.
14	397+753	LVUP	1x10.5	10.5	It has RCC Box structure. It has RCC Crash barrier, bituminous wearing coat.

Km. 334+300

Km.360+165

Km.394+411

Km. 397+753

Figure 4.3: Representative photos of Underpasses

4.6 Details of Culverts:

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 2.**

4.6.1. Slab/Box Culverts

The details of Slab/Box culvert in the project stretch are listed below.

Table 4.5: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m.)	Vent Size (m.)
1	334+222	1x1.5x1.6	1.6
2	334+938	1x1.5x2.47	2.47
3	342+374	1x4.0x4.1	4.1
4	342+591	1x1.5x1.5	1.5
5	342+910	1x1.5x1.5	1.5
6	347+643	1x1.5x2.47	2.47
7	356+411	1x5.5x3.4	3.4
8	376+408	1x5.8x5	5
9	377+770	1x6x2.8	2.8
10	378+387	1x4.5x3.8	3.8
11	379+460	1x2x1	1
12	379+770	1x4x4	4
13	380+197	1x5.1x5.7	5.7
14	382+250	1x5.0x2.2	2.2
15	388+247	1x4x3.7	3.7
16	388+472	1x4x4.6	4.6
17	390+436	2x3.0x3.0	3.0
18	391+613	1x5x4.3	4.3

S. No.	Chainage (Km.)	Span (m.)	Vent Size (m.)
19	392+175	1x2x3.0	3.0
20	397+141	1x4.1x1.6	1.6
21	397+510	1x5.2x2.8	2.8
22	398+082	1x4.5x3.7	3.7
23	398+481	1x5.0x4.6	4.6
24	398+868	1x5.0x4.8	4.8

4.6.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.390+436

Km.391+613

Km.397+141

Km.398+481

Figure 4.4: Representative photos of Underpasses

4.6.3. General Description of the Pipe Culverts

The details of pipe culverts in the project stretch are as listed below.

Table 4.6: List of Pipe Culverts

S. No.	Chainage (Km.)	Span	S. No.	Chainage (Km.)	Span
1	320+765	2x1.2	68	353+838	1X0.9
2	320+892	2x1.2	69	354+230	1X1.2
3	321+417	3x1.2	70	354+915	1X1.2

S. No.	Chainage (Km.)	Span
4	321+814	1x1.2
5	322+142	2x1.2
6	322+418	1x0.9
7	322+620	2x1.2
8	322+658	1x1.2
9	322+775	2x1.2
10	323+101	2X1.0
11	323+885	1X1.2
12	324+514	2x1.0
13	324+918	1X1.2
14	325+012	1X1.2
15	325+024	1X1.0
16	325+258	2X1.2
17	325+475	1X1.2
18	325+720	1x1.2
19	326+320	3x1.2
20	326+550	1x1.2
21	326+560	2x1.2
22	326+790	1x1.2
23	327+254	2x1.2
24	327+604	2x1.2
25	327+795	2x1.2
26	327+917	1x1.2
27	328+916	1x1.2
28	329+235	2x0.9
29	329+904	3x1.2
30	332+200	1x1.2
31	332+542	2x1.2
32	332+846	1x0.9
33	332+996	1x1.0
34	333+110	1x1.2
35	333+724	1x1.2
36	335+495	1x0.9
37	335+719	2x1.2
38	335+870	1x1.2
39	336+023	2x1.2
40	336+936	1x1.2
41	338+406	2x1.2
42	338+600	1x1.2

S. No.	Chainage (Km.)	Span
71	355+140	1X1.2
72	355+411	1X0.9
73	355+959	2X0.9
74	356+511	1X1.2
75	357+390	1X1.0
76	357+884	2X1.2
77	359+200	1X1.2
78	360+734	2X1.2
79	360+877	3X1.2
80	360+923	1X1.2
81	361+186	2X1.2
82	361+323	2X1.2
83	361+677	2X1.0
84	361+910	2X1.0
85	362+118	2X0.8
86	362+306	2X0.8
87	362+414	2X1.2
88	362+705	1X1.2
89	362+745	1X1.2
90	363+167	3X1.0
91	363+730	1X1.2
92	364+239	1X1.2
93	364+854	2X1.2
94	365+121	7X1.2
95	366+630	1X1.2
96	367+037	5X1.2
97	367+210	1X1.2
98	367+657	3X1.2
99	368+916	3X1.2
100	369+562	1X1.2
101	371+683	2X1.2
102	371+848	1X1.2
103	372+109	2X1.2
104	372+351	1X1.0
105	372+468	1X0.9
106	373+230	2X1.2
107	373+987	3X1.2
108	374+042	1X1.2
109	375+272	1X1.2

S. No.	Chainage (Km.)	Span
43	339+454	6x1.2
44	339+714	1x1.2
45	341+270	1x1.2
46	341+298	1x1.2
47	341+621	1x1.2
48	341+908	1x1.2
49	342+258	1x1.2
50	343+930	1x1.2
51	344+080	1x1.2
52	345+627	2x1.2
53	346+321	1x1.2
54	346+643	2x1.2
55	347+805	1x1.0
56	347+958	1x1.2
57	348+622	4x1.2
58	348+730	1x1.2
59	349+409	1x1.0
60	349+659	1x1.0
61	349+918	2x1.0
62	350+200	1x1.2
63	350+970	2x0.9
64	351+372	1x0.9
65	351+687	1x0.9
66	352+581	2x1.2
67	352+777	2X1.2

S. No.	Chainage (Km.)	Span
110	376+790	2X1.2
111	377+040	1X1.2
112	379+100	1X1.2
113	379+400	1X1.0
114	380+671	2X1.0
115	382+740	1X1.2
116	384+018	1X1.0
117	385+702	1X1.2
118	386+080	2X1.2
119	387+650	1X1.2
120	387+933	1X1.2
121	388+920	1X1.2
122	389+900	1X1.2
123	389+965	1X1.2
124	390+228	2X1.2
125	390+259	1X1.2
126	391+434	1X1.2
127	391+926	1X1.2
128	395+130	2X1.2
129	395+760	1X1.2
130	395+942	1X1.2
131	396+29	1X1.2
132	399+434	1X1.2
133	399+488	1X1.2

4.6.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

Km.384+018

Km.387+933

Figure 4.5: Representative photos of Pipe Culverts

CHAPTER 5. REVIEW OF PAVEMENT DESIGN

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The Pavement Design shall be carried out in accordance with Indian Roads Congress guidelines. The pavement is designed in accordance with IRC: 58 -2015 "Guidelines for the Design of Plain Jointed Rigid Pavements for highways", IRC: SP 84 -2014, IRC: 15-2011 "Construction Concrete Road (FOURTH REVISION)" and relevant clauses of schedule B of the EPC agreement. Pavement crust thickness for main carriageway as per pavement design report summarized below.

Table 5.1: Rigid Pavement Design for Main carriageway

Description	Design/Adopted Parameters
CBR of sub grade	6 %
Two way commercial traffic volume per day	1053
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	270
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	36
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	580

As per schedule D, (Annexure-I), clause 2, pavements for Slip road/Service road shall be flexible pavement and designed as per provision of design manual IRC: SP: 84:2014. The design traffic in case of service road shall be ten million standard axles as per Cl:5.5.5 of IRC: SP: 84:2014. The crust composition shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements".

Table 5.2: Flexible Pavement for service road

S. No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	9 %
2	Design Life (Years)	15 years for non-bituminous
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC for service roads. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed for Service road on or before 2028.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety audit

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Existing Road Safety items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments & Bridge Approaches	Available as per site requirement	Good
4	Median kerb	Along the Project Highway	Provided as per IRC SP:84-2014	Good
5	Road studs & Solar Blinkers	Along the Project Highway	Provided as per IRC SP:84-2014	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

The Concessionaire is maintaining the safety features in good condition from time to time in accordance with the provisions of Schedule K of the Concession Agreement.

Km. 392+800

Km.389+553

Km.360+165

Km.393+111

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly necessary during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General:

There is one toll Plaza on the project road at Km. 382+920. The width of each toll lane is provided 3.2 m, except for the lane for over dimensioned vehicles, where it is 4.5 m. between each toll lane of the toll plaza, traffic islands is constructed to accommodate tollbooth. Protective barriers of reinforced concrete and traffic impact attenuators is placed at the front of each island to prevent out of control approaching vehicles crashing into the toll booth. The canopy is provided for weather protection to toll operators, drivers and facilities. The canopy is designed aesthetically pleasing with cylindrical support columns located at traffic island so that there is no restriction on visibility and traffic movement. Total 7 Nos. toll booths are provided in toll plaza.

Toll Plaza is updated to ETC Lane system as per the Change of Scope Order issued to the Concessionaire.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at Toll Plaza and Control Room

S .No.	Materials Description	Quantity
LANE ITEMS		
1	ETC RFID Readers	10
2	ETC RFID Readers (DETC: Physical installed)	2
3	Automatic Lane Barrier Gate (Exit)	10
4	User Fare Display (UFD)	10
5	AVC (V3.0)_ with RX & TX	10
6	AVC Incident Capture Camera with pole	10
7	Licence Plate Image Capture Camera	9
8	Traffic Light	8
9	Traffic Light (DETC: Physically Installed)	6
10	OHLS(Over Head Lane Signal)	8
11	OHLS (DETC: Physically Installed)	2
12	Vehicle Separator	14
13	MSWIN (1500 mm)	8
14	MSWIN (1750 mm)	2
15	WIM Panel	10
16	WIM Indicator	10
17	Electronic Enclosure	10
18	Handheld Reader	2
19	Handheld Reader Router	1
20	SWB (Static Weight Bridge)	2
21	SWB: Indicator, Printer	4
22	SURVEILLANCE ITEMS	

S .No.	Materials Description	Quantity
23	PTZ camera(both side)	2
24	Building Surveillance Camera(Night vision)	3
25	**SOFTWARE ITEMS**	
26	Lane Module Application	10
27	Plaza Module Application	2
28	CCH Integration	1
29	Antivirus (Symantec Endpoint Protection)	14
30	Chain way RFID Hand Held Reader	1
31	Chain way RFID Hand Held Reader	1
32	D-Link Wireless Router	1
33	Required Cabling & Implementation	1
E	**BOOTH ITEMS**	
26	Monitor LEDLG, 18.5"/47	10
27	Customized Keyboard	8
28	Qwerty Keyboard	2
29	Thermal Printer (TM-88V)_Epson	8
3)0	Barcode Scanner	8
31	Manual Booth Controller	10
32	Doom Camera(IP Based)_Hikvision	10
33	Smart Card Reader	8
34	Intercomm Slave	8
A) SERVER ROOM ITEMS		
1	Server Rack 42U, with Fan and 6, point power Manager, Cable Manager	1
2	Lenovo Think system Server SR 550(7x04S2FB00)	1
3	Server Monitor (LG, 18.5", 47 cm)	1
4	Keyboard, Mouse for TMS Server	1
5	Network Patch Panel (24 Port)_D-Link	1
6	Network Switch (24 Port)_D-Link	1
B) CONTROL ROOM ITEMS		
7	Monitor (Lenovo "18.5" Inch)	3
8	Control Room Workstation(Lenovo, 13, 4GB RAM, 1TB HOD) for POS, Audit & CCH Server	3
9	Key board, Mouse (Lenovo/Dell)	3
10	43" LED TV Samsung	1
11	NVR(HIKVISION, 32 CH 3 TB)	1
12	NVR Mouse	1
13	Master Intercom - (NIM - 20B)	1
14	PTZ CONTROL KEYBOARD-JOYSTICK	1
15	POS ETC RFID READER	1

S .No.	Materials Description	Quantity
16	Thermal Printer	1
C) UPS ROOM ITEMS		
17	10KVA ON LINE UPS	2
18	6KVA ONLINE UPS	1

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza
1	Patrol Vehicle	1 No
2	Ambulance	1 No.

Toll Plaza at Km.382+920

Toll Building at Km.382+920

Figure 7.1: Photographs of Toll Plaza

CHAPTER 8. SCHEDULE OF ANNUITY PAYMENTS

8.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model which allows the payment of 40% of the Project cost during construction period based on progress milestones set forth by Authority to Concessionaire and Payment of balance 60% to the Concessionaire Bi annually with the Interest during the balance concession period.

8.2 Payment during Construction

As per the provisions of Article 23 of the Concession Agreement, 40% of the Bid Project Cost adjusted with Price Index in accordance with Clause 23.4 of the CA, shall be paid during the Construction Period. Amount payable during construction period shall be paid in five equal installments upon achieving the following Project Milestones.

Table 8.1 : Schedule of Payment Milestones

S. No.	Payment Milestone No	Criteria for releasing the Payment
1	Payment Milestone I	On Achievement of 10% of Physical Progress
2	Payment Milestone II	On Achievement of 30% of Physical Progress
3	Payment Milestone III	On Achievement of 50% of Physical Progress
4	Payment Milestone IV	On Achievement of 75% of Physical Progress
5	Payment Milestone V	On Achievement of 90% of Physical Progress

During the Operation Period, remaining 60% of the balance Completion Cost shall be paid in 30 Annuities each Annuity payable biannually. Each Annuity amount shall be based on the percentages of the balance Completion Cost mentioned in 23.6.3 of the Concession Agreement. During the Operation Period following payment components are payable.

- Annuity Payment as per the Annuity Payment Schedule provided in 23.6.3 of the Concession Agreement.
- Interest on the balance amount to be paid at an interest rate equal to the applicable Bank Rate Plus 3%
- O&M Payment as a lump sum amount as per Clause 23.7.1 of the Concession Agreement.

8.3 Schedule of Annuity Payments

Details of Annuity payments are as below.

Table 8.2 : Schedule of Annuity Payments

S. No.	Following the COD	% of Completion Cost remaining to be paid on COD	Due date for Payment	Date of Payment
1	Annuity 1	2.10%	18.11.2020	7-Dec-20
2	Annuity 2	2.17%	23.06.2021	
3	Annuity 3	2.24%	18.11.2021	
4	Annuity 4	2.31%	23.06.2022	
5	Annuity 5	2.38%	18.11.2022	
6	Annuity 6	2.45%	23.06.2023	

S. No.	Following the COD	% of Completion Cost remaining to be paid on COD	Due date for Payment	Date of Payment
7	Annuity 7	2.52%	18.11.2023	
8	Annuity 8	2.60%	23.06.2024	
9	Annuity 9	2.68%	18.11.2024	
10	Annuity 10	2.76%	23.06.2025	
11	Annuity 11	2.84%	18.11.2025	
12	Annuity 12	2.93%	23.06.2026	
13	Annuity 13	3.02%	18.11.2026	
14	Annuity 14	3.11%	23.06.2027	
15	Annuity 15	3.20%	18.11.2027	
16	Annuity 16	3.30%	23.06.2028	
17	Annuity 17	3.40%	18.11.2028	
18	Annuity 18	3.50%	23.06.2029	
19	Annuity 19	3.61%	18.11.2029	
20	Annuity 20	3.72%	23.06.2030	
21	Annuity 21	3.83%	18.11.2030	
22	Annuity 22	3.94%	23.06.2031	
23	Annuity 23	4.06%	18.11.2031	
24	Annuity 24	4.18%	23.06.2032	
25	Annuity 25	4.25%	18.11.2032	
26	Annuity 26	4.25%	23.06.2033	
27	Annuity 27	4.44%	18.11.2033	
28	Annuity 28	4.71%	23.06.2034	
29	Annuity 29	4.75%	23.06.2034	
30	Annuity 30	4.75%	18.11.2035	

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Carrying out preventive and periodic maintenance of the Project road;
iii. Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
iv. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
v. Functioning of the lighting system;
vi. Functioning of the Patrolling System
vii. Functioning of rescue and medical aid services

viii. Ambulance as and when required
ix. Functioning of the Project Facilities
x. Administrative, Operational and Maintenance Base Camp
xi. Truck Lay byes
xii. Pickup Bus stops / Bus Bays
xiii. Protection of the environment and provision of equipment and materials therefor;
xiv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xv. Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement as well as rigid pavements are in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	2027	Planned to execute
2nd Periodic Maintenance	2034	Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

Further it is to be noted that during O&M period, the roughness value shall not exceed 2750mm/Km in accordance with Schedule K(a)(ii).Based on documents renewed, no NCRS were noticed pertinent to riding quality.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports.The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 3.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	2.521	4.026		4.42	10.96
2021	2.596	4.147		4.55	11.29
2022	2.674	4.271		4.69	11.63
2023	2.754	4.399		4.83	11.98
2024	2.837	4.531		4.97	12.34
2025	2.922	4.667		5.12	12.71
2026	3.010	4.807		5.28	13.09
2027	3.100	4.951	30.97	5.43	44.46
2028	3.193	5.100		5.60	13.89
2029	3.289	5.253		5.77	14.31
2030	3.387	5.410		5.94	14.74
2031	3.489	5.573		6.12	15.18
2032	3.594	5.740		6.30	15.63
2033	3.701	5.912	36.54	6.49	52.64
2034	3.813	6.089		6.68	16.59
2035	3.927	6.272		6.88	17.08
2036	0.576	0.920		1.01	2.51
Total	**51.382**	**82.067**	**67.51**	**90.07**	**291.03**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 of the CA provides the scope of work, which includes the following.

- Operation and Maintenance of the Project Highway on the Site set forth in Schedule A and as specified in Schedule B together with provision of Project Facilities as specified in Schedule C, and in conformity with the Specifications and Standards set forth in Schedule D;
- collection of Fee from the Users of the Project; subject and in accordance with the provisions of the Concession Agreement;
- performance and fulfillment of all other obligations of the Contractor in accordance with the provisions of this Agreement and matters incidental thereto or necessary for the performance of any or all of the obligations of the Contractor under this Agreement

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE - 4**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 30 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date

- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 30% of the Total Project Cost.

10.6 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE - 5**.

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the NHAI are provided in **Annexure 7**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (**The "Maintenance Requirements").**

10.13 Maintenance Manual (Clause 17.3)

No later than 90 (ninety) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 2% (two percent) of the performance security, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Payment of Bid Project Cost (Article 23)

The Authority agrees to pay 40% of the Bid Project Cost in five installments against the achievement of Project Milestones specified in Clause 23.4 of the Concession Agreement and the amount shall be adjusted with Price index.

Remaining balance completion cost shall be paid as per the % of balance completion cost biannually from the date of COD. Percentage of amounts payable for each Annuity is specified in 23.6.3 of the Concession Agreement.

10.18 Change in Law (Article 35)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance:

As per clause 26.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 6.** Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table:11-1 Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Property covered
			From	To	
Employees Compensation Insurance	HDFC ERGO General Insurance Co Ltd	3114203384088500000	2.5.2020	1.5.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project
Standard Fire & Special Perils Policy	The Oriental Insurance Co Ltd	171200/11/2021/406	12.02.2021	04.10.2021	Fire Basic cover, STFI cover, Earth Quake cover
Fire Industrial All Risk Policy	The Oriental Insurance Co Ltd	171200/11/2021/405	12.02.2021	04.10.2021	Toll Plaza Building & Booths, TMS, HTMS, Office & IT Equipment, Road Furniture and Rigid Pavement etc.

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

Toll plaza was constructed at Km.382+920 and is operational. Bus bays and truck lay byes are in good condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza, bus bay and truck lay bye locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

12.6 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time-to-time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2027.

12.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Condition of Bridges

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	321+151	Minor Bridge	Good	Good	Good	-	Good	Good	-
2	323+321	Minor Bridge	Good	Good	Good	-	Good	Good	-
3	324+256	Minor Bridge	Good	Good	Good	-	Good	Good	-
4	325+915	Minor Bridge	Good	Good	Good	-	Good	Good	-
5	326+082	Minor Bridge	Good	Good	Good	-	Good	Good	-
6	329+645	Minor Bridge	Good	Good	Good	-	Good	Good	-
7	334+660	Minor Bridge	Good	Good	Good	-	Good	Good	-
8	336+400	Minor Bridge	Good	Good	Good	-	Good	Good	-
9	336+549	Minor Bridge	Good	Good	Good	-	Good	Good	-
10	337+468	Minor Bridge	Good	Good	Good	-	Good	Good	-
11	339+168	Minor Bridge	Good	Good	Good	-	Good	Good	-
12	340+225	Minor Bridge	Good	Good	Good	-	Good	Good	-
13	340+315	Minor Bridge	Good	Good	Good	-	Good	Good	-
14	343+468	Minor Bridge	Good	Good	Good	-	Good	Good	-
15	347+403	Minor Bridge	Good	Good	Good	-	Good	Good	-
16	359+399	Minor Bridge	Good	Good	Good	-	Good	Good	-
17	359+848	Minor Bridge	Good	Good	Good	-	Good	Good	-
18	362+868	Minor Bridge	Good	Good	Good	-	Good	Good	-
19	365+373	Minor Bridge	Good	Good	Good	-	Good	Good	-
20	371+557	Minor Bridge	Good	Good	Good	-	Good	Good	-
21	373+609	Minor Bridge	Good	Good	Good	-	Good	Good	-
22	373+704	Minor Bridge	Good	Good	Good	-	Good	Good	-
23	375+165	Minor Bridge	Good	Good	Good	-	Good	Good	-

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
24	377+321	Minor Bridge	Good	Good	Good	-	Good	Good	-
25	378+593	Minor Bridge	Good	Good	Good	-	Good	Good	-
26	381+804	Minor Bridge	Good	Good	Good	-	Good	Good	-
27	383+748	Minor Bridge	Good	Good	Good	-	Good	Good	-
28	384+960	Minor Bridge	Good	Good	Good	-	Good	Good	-
29	386+480	Minor Bridge	Good	Good	Good	-	Good	Good	-
30	387+247	Minor Bridge	Good	Good	Good	-	Good	Good	-
31	389+553	Minor Bridge	Good	Good	Good	-	Good	Good	-
32	390+816	Minor Bridge	Good	Good	Good	-	Good	Good	-
33	391+043	Minor Bridge	Good	Good	Good	-	Good	Good	-
34	391+255	Minor Bridge	Good	Good	Good	-	Good	Good	-
35	393+111	Minor Bridge	Good	Good	Good	-	Good	Good	Fair
36	393+810	Minor Bridge	Good	Good	Good	-	Good	Good	Fair
37	394+722	Minor Bridge	Good	Good	Good	-	Good	Good	-
38	395+290	Minor Bridge	Good	Good	Good	-	Good	Good	-
39	399+903	Minor Bridge	Good	Good	Good	-	Good	Good	-
40	360+485	Major Bridge	Good	Good	Good	Good	Good	Good	-
41	376+231	Major Bridge	Good	Good	Good	Good	Good	Good	-
42	326+810	VUP	Good	Good	Good	-	Good	Good	-
43	334+300	VUP	Good	Good	Good	-	Good	Good	-
44	360+165	VUP	Good	Good	Good	-	Good	Good	-
45	363+500	VUP	Good	Good	Good	-	Good	Good	-
46	370+733	VUP	Good	Good	Good	-	Good	Good	Fair
47	357+525	PUP	Good	Good	Good	-	Good	Good	Fair
48	377+344	PUP	Good	Good	Good	-	Good	Good	-

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
49	394+411	PUP	Good	Good	Good	-	Good	Good	-
50	322+870	LVUP	Good	Good	Good	-	Good	Good	-
51	349+020	LVUP	Good	Good	Good	-	Good	Good	-
52	381+502	LVUP	Good	Good	Good	-	Good	Good	-
53	397+753	LVUP	Good	Good	Good	-	Good	Good	-
54	360+350	LVUP	Good	Good	Good	-	Good	Good	-
55	360+600	LVUP	Good	Good	Good	-	Good	Good	-

Annexure 2: Condition of Culverts

Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	320+765	Good	Good	Good	-
2	320+892	Good	Good	Good	-
3	321+417	Good	Good	Good	-
4	321+814	Good	Good	Good	-
5	322+142	Good	Good	Good	-
6	322+418	Good	Good	Good	-
7	322+620	Good	Good	Good	-
8	322+658	Good	Good	Good	-
9	322+775	Good	Good	Good	-
10	323+101	Good	Good	Good	Good
11	323+885	Good	Good	Good	Good
12	324+514	Good	Good	Good	Good
13	324+918	Good	Good	Good	Good
14	325+012	Good	Good	Good	-
15	325+024	Good	Good	Good	-
16	325+258	Good	Good	Good	Good
17	325+475	Good	Good	Good	Good
18	325+720	Good	Good	Good	Good
19	326+320	Good	Good	Good	Good
20	326+550	Good	Good	Good	Good
21	326+560	Good	Good	Good	Good
22	326+790	Good	Good	Good	Good
23	327+254	Good	Good	Good	Good
24	327+604	Good	Good	Good	Good
25	327+795	Good	Good	Good	Good
26	327+917	Good	Good	Good	Good
27	328+916	Good	Good	Good	Good
28	329+235	Good	Good	Good	Good
29	329+904	Good	Good	Good	Good
30	332+200	Good	Good	Good	-
31	332+542	Good	Good	Good	-
32	332+846	Good	Good	Good	Good
33	332+996	Good	Good	Good	-
34	333+110	Good	Good	Good	-
35	333+724	Good	Good	Good	Good
36	335+495	Good	Good	Good	-
37	335+719	Good	Good	Good	-
38	335+870	Good	Good	Good	-

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
39	336+023	Good	Good	Good	Good
40	336+936	Good	Good	Good	Good
41	338+406	Good	Good	Good	Good
42	338+600	Good	Good	Good	-
43	339+454	Good	Good	Good	-
44	339+714	Good	Good	Good	-
45	341+270	Good	Good	Good	Good
46	341+298	Good	Good	Good	Good
47	341+621	Good	Good	Good	Good
48	341+908	Good	Good	Good	Good
49	342+258	Good	Good	Good	Good
50	343+930	Good	Good	Good	Good
51	344+080	Good	Good	Good	Good
52	345+627	Good	Good	Good	Good
53	346+321	Good	Good	Good	Good
54	346+643	Good	Good	Good	Good
55	347+805	Good	Good	Good	Good
56	347+958	Good	Good	Good	Good
57	348+622	Good	Good	Good	Good
58	348+730	Good	Good	Good	Good
59	349+409	Good	Good	Good	Good
60	349+659	Good	Good	Good	Good
61	349+918	Good	Good	Good	Good
62	350+200	Good	Good	Good	Good
63	350+970	Good	Good	Good	Good
64	351+372	Good	Good	Good	Good
65	351+687	Good	Good	Good	Good
66	352+581	Good	Good	Good	Good
67	352+777	Good	Good	Good	Good
68	353+838	Good	Good	Good	Good
69	354+230	Good	Good	Good	Good
70	354+915	Good	Good	Good	Good
71	355+140	Good	Good	Good	Good
72	355+411	Good	Good	Good	Good
73	355+959	Good	Good	Good	Good
74	356+511	Good	Good	Good	Good
75	357+390	Good	Good	Good	Good
76	357+884	Good	Good	Good	Good
77	359+200	Good	Good	Good	Good
78	360+734	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
79	360+877	Good	Good	Good	Good
80	360+923	Good	Good	Good	Good
81	361+186	Good	Good	Good	Good
82	361+323	Good	Good	Good	Good
83	361+677	Good	Good	Good	Good
84	361+910	Good	Good	Good	Good
85	362+118	Good	Good	Good	Good
86	362+306	Good	Good	Good	Good
87	362+414	Good	Good	Good	Good
88	362+705	Good	Good	Good	Good
89	362+745	Good	Good	Good	Good
90	363+167	Good	Good	Good	Good
91	363+730	Good	Good	Good	Good
92	364+239	Good	Good	Good	Good
93	364+854	Good	Good	Good	Good
94	365+121	Good	Good	Good	Good
95	366+630	Good	Good	Good	Good
96	367+037	Good	Good	Good	Good
97	367+210	Good	Good	Good	Good
98	367+657	Good	Good	Good	Good
99	368+916	Good	Good	Good	Good
100	369+562	Good	Good	Good	Good
101	371+683	Good	Good	Good	Good
102	371+848	Good	Good	Good	Good
103	372+109	Good	Good	Good	Good
104	372+351	Good	Good	Good	Good
105	372+468	Good	Good	Good	Good
106	373+230	Good	Good	Good	Good
107	373+987	Good	Good	Good	Good
108	374+042	Good	Good	Good	Good
109	375+272	Good	Good	Good	Good
110	376+790	Good	Good	Good	Good
111	377+040	Good	Good	Good	Good
112	379+100	Good	Good	Good	Good
113	379+400	Good	Good	Good	Good
114	380+671	Good	Good	Good	Good
115	382+740	Good	Good	Good	Good
116	384+018	Good	Good	Good	Good
117	385+702	Good	Good	Good	Good
118	386+080	Good	Good	Good	Good
119	387+650	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
120	387+933	Good	Good	Good	Good
121	388+920	Good	Good	Good	Good
122	389+900	Good	Good	Good	Good
123	389+965	Good	Good	Good	Good
124	390+228	Good	Good	Good	Good
125	390+259	Good	Good	Good	Good
126	391+434	Good	Good	Good	Good
127	391+926	Good	Good	Good	Good
128	395+130	Good	Good	Good	-
129	395+760	Good	Good	Good	-
130	395+942	Good	Good	Good	-
131	396+290	Good	Good	Good	-
132	399+434	Good	Good	Good	Good
133	399+488	Good	Good	Good	Good

Box/Slab Culverts

S.No	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	334+222	Good	Good	Good	Good	Good
2	334+938	Good	Good	Good	Good	Good
3	342+374	Good	Good	Good	Good	Good
4	342+591	Good	Good	Good	Good	Good
5	342+910	Good	Good	Good	Good	Good
6	347+643	Good	Good	Good	Good	Good
7	356+411	Good	Good	Good	Good	Good
8	376+408	Good	Good	Good	Good	Good
9	377+950	Good	Good	Good	Good	Good
10	378+387	Good	Good	Good	Good	Good
11	379+460	Good	Good	Good	Good	Good
12	379+770	Good	Good	Good	Good	Good
13	380+197	Good	Good	Good	Good	Good
14	382+250	Good	Good	Good	Good	Good
15	388+247	Good	Good	Good	Good	Good
16	388+472	Good	Good	Good	Good	Good
17	390+436	Good	Good	Good	Good	Good
18	391+613	Good	Good	Good	Good	Good
19	392+175	Good	Good	Good	Good	Good
20	397+141	Good	Good	Good	Good	Good
21	397+510	Good	Good	Good	Good	Good
22	398+082	Good	Good	Good	Good	Good
23	398+481	Good	Good	Good	Good	Good
24	398+868	Good	Good	Good	Good	Good

Annexure 3: Operation & Maintenance cost

ROUTINE MAINTENANCE COST

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	72.7	12	4	350	12,21,360	04 Nos. of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km	7.295	24	4	350	2,45,112	04 No. of Labour
3	Watering in Median Plants	Once in Week	Km	79.995	52	1	1939	80,65,736	01 No. of Labour
4	Watering in Avenue plants	Once in Week	Km	72.7	52	73	1939	73,30,196	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	72.7	12	12	21000	2,52,000	02 Nos. of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km	55.9965	2	10	350	3,91,976	10 Nos. of labour per KM (70% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	268	2	3	650	10,45,200	3 Nos. of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	79.995	4	2	350	2,23,986	02 Nos. of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	38	12	2	350	3,19,200	2 Nos./ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	2	12	60	350	5,04,000	02 Nos. of Labour for 30 days
11	Bridges	Half yearly	Nos.	77	2	4	350	2,15,600	04 Nos. of Labour for removal of vegetation/Structure

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
13	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	15	1	550	124	10,23,000	2.5% of CW area considered 22.0x1000x2.5%
								2,08,37,365	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos		12	1	400000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	79.995	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12	2	250000	5,00,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	79.995	12	4	12000	47,997	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos		12	1	4,00,000	4,00,000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	79.995	12	5	2500	1,59,990	Per Supervisor
8	Building Maintenance	Yearly			12	1	25000	3,00,000	25000/ month

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
9	Toll plaza AMC	Yearly	Nos		12	1	100000	12,00,000	100000/month
								30,07,987	
1	Patrolling vehicle	Monthly	Nos	12		2	300000	600000	(1500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
2	Ambulance	Monthly	Nos	12		1	240000	240000	(1200000 is the cost of vehicle, considering 20% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Tow away trucks and Crane	Monthly	Nos	12		1	400000	400000	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	5000	60000	5000 Per month for per set (Per set - Per toll plaza)
								13,60,000	
								2,52,05,351.96	

INCIDENTAL COST

S No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	23152.5	516	1,19,46,690	40 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm	1	1	255.243	168	42,881	2% of Flexible Pavement (changed quantities to only Service road portion)
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	1	1	19101	516	10% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	1	201.739	168	5 % of Total sign boards per year (Lumpsum of 200000)
5	MBCB	Monthly	Km	79.995	1	3	2399.85	225	5% of Total qty per year - (considered 5000 for km per month)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	79.995	1	2	122.5	4000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km				638	2500	10 % of total ROW fencing per year
8	Kerb	Yearly	Km	79.995	79.995	4	20	2250	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	4125		4			3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	79.995	1	3199.8	250	Considered 1% of the total volume in O & M period per year

S No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	Rmt	9150	4125	1	124	55000	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**4,02,57,515**	

Operational Expenses

S.No.	Particulars	Amount
1	Man Power	₹ 1,27,20,000
2	Fuel for Generator & Vehicles	₹ 1,30,32,000
3	Electricity	₹ 1,32,00,000
4	Stationary	₹ 1,00,000
5	Replacement of Electrical Fixtures	₹ 45,32,291
6	Refurbishment of Toll Plaza Equipment	₹ 6,00,000
	Total Amount	**₹ 4,41,84,291**

Abstract Summary of Major/Periodic Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	23-May-20					
1st Major Maintenance - Highway	22-May-27	24,64,61,285	7.00	3.0%	29,82,18,155	29.82
1st Major Maintenance - Structures	22-May-27	95,24,788	7.00	3.0%	1,15,24,993	1.15
2nd Major Maintenance - Highways	22-May-32	25,60,10,685	12.00	3.0%	34,81,74,532	34.82
2nd Major Maintenance - Structures	22-May-32	1,26,52,020	12.00	3.0%	1,72,06,747	1.72
				Total	**₹ 67,51,24,428**	**67.51**

Major Maintenance

S. No	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	3,15,872.50	14.00	44,22,215	3,15,872.50	14.00	44,22,215
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	12,634.90	7,682.00	9,70,61,302	12,634.90	7,682.00	9,70,61,302
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	1,67,988.45	250.00	4,19,97,113	1,67,988.45	250.00	4,19,97,113
4	Texturing of Rigid pavement (considering 25% for 7 years)	Sqm	7,67,787.50	130.00	9,98,12,375	7,67,787.50	130.00	9,98,12,375
5	Earthen shoulder @ service roads	cum	2,513.00	250.00	6,28,250	2,513.00	250.00	6,28,250
	Total				**24,39,21,254**	-	-	**24,39,21,254**

S. No	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Junctions, Traffic Signs Marking and Other Appurtenances			-		-	-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		25,130.00	380.00	95,49,400
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	1,884.75	516.00	9,72,531	1,884.75	516.00	9,72,531
3	Road Studs	Nos	2,090.00	750.00	15,67,500	2,090.00	750.00	15,67,500
	Total			-	**25,40,031**	-	-	**1,20,89,431**
	Grand Total				**24,64,61,285**	-		**25,60,10,685**

Annexure 4: Letter of Award

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

NHAI/Tech/01/EFC/Mahag.-Yavat./2014/MAH/97366 **28th March 2017**

To,

M/s Dilip Buildcon Limited
Plot No. 5, inside Govind Narayan Singh Gate
Chuna Bhatti, Kolar Road
Bhopal – 462 016
Phone No.: 09300948396
Fax: 0755 4029998
Email: db@dilipbuildcon.co.in; diliph_99@rediffmail.com

(Kind Attention: Mr. Kundan Kumar Das, AGM – Business Development)

Subject: Four laning of **Mahagaon to Yavatmal** (Package-II) section of NH-361 from km 320.580 to km 400.575 (Design Length 80.195) in the State of Maharashtra Under NHDP Phase – IV on Hybrid Annuity Mode –**Letter of Award – Reg.**

Ref: 1. Your Proposal submitted on 15.02.2017
2. Opening of Financial proposal on 22.03.2017

Sir,

With Reference to NHAI's Request for Proposal for "Four laning of **Mahagaon to Yavatmal** (Package-II) section of NH-361 from km 320.580 to km 400.575 (Design Length 80.195) in the State of Maharashtra Under NHDP Phase – IV on Hybrid Annuity Mode" and considering you proposal in this regard submitted on 15.02.2017 vide reference no. (i), NHAI hereby accepts your proposal quoting Bid Project Cost of **Rs. 1160.64 crore (Rupees Eleven Hundred Sixty Crore and Sixty Four Lakh Only)** and first year O&M cost of **Rs. 3.00 Crore (Rupees Three Crore Only)** as included in Appendix- 1B of your document and declares you as the "Selected Bidder" as per the provisions of RFP Documents.

2. In accordance with the clause 3.8.4 of the RFP document, you are requested to sign the duplicate copy of the LOA and return the same as your acknowledgement within 7 (Seven) days of the receipt of the LOA. Thereafter you are required to execute the concession Agreement within 45 (Forty five) days from the date of issue of LOA as specified in Clause 1.3 of RFP.

3. Further, As per RFP document, you are required to incorporate a Special Purpose Vehicle solely for the purpose of domiciling the project (the "Concessionaire"). The Concessionaire For due and faithful performance of its obligations during the Concession Period shall furnish a Performance Security by way of irrecoverable and unconditional Bank guarantee of **Rs 58.04 Crores (Rupees Fifty Eight Crore Four Lakh only)** within a period of the 30 days from the date of signing of the Concession Agreement. Till the time the Concessionaire provides NHAI with the performance Security the Bid Security shall remain in full Force and Effect (refer Clause 4.1.2 and Clause of Article 9 of RFP).

4. You are required to comply with all the terms and conditions set forth in the RFP Documents. In case of any default on your part, you shall be liable for action as stated in the Bid Documents.

(Ashish Asati)
General Manager (Tech)
(Maharashtra Division)

Annexure 5: Provisional Certificate

Schedule-J (Page 194)

"PROVISIONAL CERTIFICATE"

1. We, Artefact Projects Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.06.2017 **(the "Agreement"),** for development and operation of Four-Laning of the Mahagaon to Yavatmal Section of National Highway No. 361 (the **"Project Highway"**) on design , build, operate and transfer (the "DBOT Annuity or Hybrid Annuity") basis through DBL Mahagaon Yavatmal Highways Private Limited, hereby certify that the tests specified in Article 14 and Schedule-I of the Concession Agreement have been undertaken for the partial Project / section of **72.089 Km** of the Project to determine compliance thereof with the provisions of the Agreement.

2. Construction Works forming part of the Project/section of **72.089 Km** of the Project that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and all such works in the time and manner set forth in the Agreement. [Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons not attributable to the Concessionaire]. We are satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project/section of **72.089 Km** of the Project, pending completion thereof.

3. In view of the foregoing, We are satisfied that the partial Project/section of **72.089 Km** of the Project can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project/section of the Project is hereby provisionally declared fit for entry into commercial operation on this the 23rd day of May 2020.

ACCEPTED, SIGNED, SEALED AND DELIVERED
FOR AND ON **BEHALF** OF
CONCESSIONAIRE BY

Ramavtar Tyagi
Authorized Signatory
M/s DBL Mahagaon Yavatmal Highways (Pvt) Limited

SIGNED, SEALED AND DELIVERED

FOR AND ON **BEHALF** OF
INDEPENDENT ENGINEER

Siddharth Shah
Authorized Signatory
M/s Artefact Projects Limited

Annexure 6: Insurance

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203384088500000 **Employees Compensation Insurance**

Insured Name	DILIP BUILDCON LIMITED (PAN Number:AACCD6124B)				**Business**	OTHERS	
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.						
Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	06/05/2020

Period of Insurance	From Date & Time	02/05/2020 00:01 AM	To Date & Time	01/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹. Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203384088500000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) [illegible]

Registered & Corporate Office: 1st Floor, HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: [illegible] Telephone: [illegible]

HDFC ERGO General Insurance Company Limited

Details of Employees Covered

Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment
Road Paving, Tarring and Road Making-Road Paving, Tarring and Road Making-Road Paving, Tarring and Road Making_Road Paving, Tarring and Road Making_All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled, Unskilled, Engineers, Supervisors, Managers, Daily Labour Etc.	200	48000000.00	Four Laning of Mahagaon to Yavatmal (Package-II) Section of NH-361 from Km 320.580 to Km 400.575 (design length 80.195 km) in the state of Maharashtra Under NHDP Phase-IV on Hybrid Annuity Mode

Premium Details (₹)

Basic Premium	72111.00
Integrated Tax 18%	12880.00
Total Premium	86091.00

GST Registration No: 24AABCL5045N1ZE.The contract will be cancelled ab initio in case; the consideration under the policy is not realized.

List of Endorsements

Endt No	Description	Effective Date
EC_12_0003	Contractors Employees	02 May 2020
EC_12_0001	Medical Expenses	02 May 2020
WC-02-0008	Tariff Endorsement	02 May 2020
EC-13-0006	Insurance Contract	02 May 2020
EC-13-0005	Policy Schedule	02 May 2020
99901	Communicable Disease Exclusion- Wordings as per annexure attached	02 May 2020
	Warranted that there are no known losses and /or circumstances leading to losses (except for the claims and / or circumstances already reported to HDFC ERGO General Insurance Co. Ltd. This policy document is issued basis the information provided though request for quotation and/ or unsigned proposal form and / or other details provided by the insured / insurance intermediary and/ or though discussions	02 May 2020

3114203384088500000 Page 3 of 13

Reason: Signing

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	: **171200/11/2021/405**	**Prev Policy No**	:
Cover Note No	:	Cover Note Dt	:
Insured's Name	: 107457440 - DBL Mahagaon Yavatmal Highways Pvt. Ltd. (GSTIN: 27AAGCD1465M1ZD)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: SLPL DOCTOS COLONY, SAMAJ EKTA GRUHNIRMAN, SOMALWADA, NAGAPUR, NAGPUR, Nagpur, Maharashtra, NAGPUR 440002	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / Na	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 12/02/2021 TO MIDNIGHT OF 04/10/2021

Collection No & Dt : DC_I_INDCSH 3214001412 - 12/02/2021 GST INVOICE NO :2419835689 UIN :0

Gross Premium : 75,88,584 GST : 13,65,945 Stamp Duty : .5 Total : 89,54,529

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	IFFCO TOKIO GENERAL INSURANCE,	20.00
3	BAJAJ ALLINZE GEN INSURANCE	20.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Operation & maintenance of Roads, Bridges and any other property on the stretch Four Laning of Mahagaon to Yavatmal (PKG-II) Section of NH-361 from KM 320.580 to KM 400.575 9 Length 80.195 KM, In the state of Maharashtra under NHDP Phase-IV on hybrid annuity mode

Deductible :

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges) , Underpasses, Culverts, drainages,Utilities, Slabs Box, Causeways, Machineries Such as DG Sets, Transformers(Full descp as per annexure)		221,90,88,288

Place :
Date : 12/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

Attached to and forming part of policy number 171200/11/2021/405

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges) , Underpasses, Culverts, drainages,Utilities, Slabs Box, Causeways, Machineries Such as DG Sets, Transformers(Full descp as per annexure)		576,52,61,563

Cover Wise Details	Sum Insured	Premium
Fire Basic Cover	798,43,49,851	35,13,113.94
STFI Cover	798,43,49,851	22,35,617.96
Earth Quake	798,43,49,851	3,19,373.99

SECTION III : IAR-BREAKDOWN SECTION

Item Description	Identificaton No.	Year of Make
As per placement slip		

SMI Description	Sum Insured
Machinery Sum Insured	1,00,00,000

Cover Wise Details	Sum Insured	Premium
Breakdown Cover	1,00,00,000	2,000.00

SECTION II : IAR-FLOP SECTION

Type of Industry	: CONTINUOUS INDUSTRY	Basis of Indemnity	: TURNOVER BASIS
Indemnity Period	: 12 Months	Annual Gross Profit	: 1000000
Total Sum Insured	: 10,00,000	Time Exclusion	:

Cover Wise Details	Sum Insured	Premium
Fire LOP-Basic Cover	10,00,000	760.00

SCHEDULE OF PREMIUM

Fire Basic Cover	35,13,113.94
ADD :STFI Cover	22,35,617.96

Place :
Date : 12/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

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Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 2 of 4

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

Signer: ATUL JERATH
Date: Tue, Feb 16, 2021 18:02:01 IS
Location: NOIDA
Reason: Signing Policy for OICL

STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	: **171200/11/2021/406**	**Prev Policy No**	: -
Cover Note No	: -	Cover Note Dt	:
Insured's Name	: 107457440 - DBL Mahagaon Yavatmal Highways Pvt. Ltd. (GSTIN: 27AAGCD1465M1ZD)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: SLPL DOCTOS COLONY, SAMAJ EKTA GRUHNIRMAN, SOMALWADA, NAGAPUR, NAGPUR, Nagpur, Maharashtra, NAGPUR 440002	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / Na	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code :

Agent/Broker : **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**

Address Tel/Fax/Email : **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**

Period of Insurance : FROM 00:00 ON 12/02/2021 TO MIDNIGHT OF 04/10/2021

Collection No & Dt : DC_I_INDCSH 3214001412 - 12/02/2021 GST INVOICE NO :2419836092 UIN :0

Gross Premium : 5,25,390 GST : 94,570 Stamp Duty : .5 Total : 6,19,960

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	IFFCO TOKIO GENERAL INSURANCE,	20.00
3	BAJAJ ALLINZE GEN INSURANCE	20.00

RISK DETAILS

1 Location of the Risk : Four Laning of Mahagaon to Yavatmal (PKG-II) Section of NH-361 from KM 320.580 to KM 400.575 9 Length 80.195 KM, In the state of Maharashtra under NHDP Phase-IV on hybrid annuity mode

MAHARASHTRA
YAVATMAL
445205
YEOTMAL

Risk Description : Roads

Place :
Date : 12/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

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Signer: ATUL JERATH
Date: Tue, Feb 16, 2021 16:02:01 IST
Location: NOIDA
Reason: Signing Policy for OICL

Attached to and forming part of policy number 171200/11/2021/406

: 0265-2252274/0265-2357445/0265-2356033/

Block Description : 1

SMI Desc	Nature of Stock	Sum Insured
Toll Plaza Building and its assets & Toll Booths, TMS, HTMS, Office & IT Equipment, RoadFurniture, Fixtures, Electrical Poles, Lighting & Fittings, Signboard, Safety Barrier, concretebarrier(Full Desc as per annexure)		52,67,07,019

Cover Wise Details : Cover Name	Sum Insured	Premium
STFI Cover	52,67,07,019	1,47,477.97
Fire Basic Cover	52,67,07,019	2,31,751.00
Earth Quake Cover	52,67,07,019	21,068.00
Impact Damage Due To Insured's Own Rail/Road Vehicles, Fork Lifts, Cranes, Stackers And The Like And Articles Dropped Therefrom	52,67,07,019	20,226.00

SCHEDULE OF PREMIUM

TOTAL PREMIUM	5,25,390.00
ADD :IGST	94,570.00
STAMP DUTY	0.50
TOTAL AMOUNT	6,19,960.00

Total Sum Insured In Words : Indian Rupees Fifty-Two Crores Sixty-Seven Lakhs Seven Thousand Nineteen Only
Total Premium In Words : Indian Rupees Six Lakhs Nineteen Thousand Nine Hundred Sixty Only

Excess / Deductible :
The following minimum deductibles are applicable based on per Location Sum Insured of the policy.
(except dwelling with individual owners)

Sum Insured Band per Location (including endorsements, if any)	Material Damage	
	% Of Claim	Subject to Minimum deductible in INR.
Upto 10 Cr	5	10,000.00
Above 10 Cr and upto 100 Cr	5	25,000.00
Above 100 Cr and upto 1500 Cr	5	500,000.00
Above 1500 Cr and upto 2500 Cr	5	2,500,000.00
Above 2500 Cr	5	5,000,000.00

Place :
Date : 12/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 2 of 4

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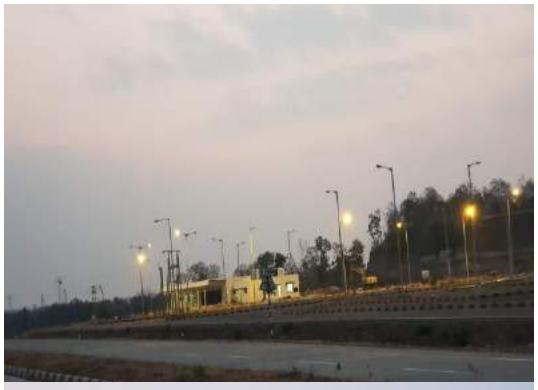
Annexure 7: Change of Scope

S. No	Description	Value of COS Approved (Rs in Crores)	Status of the work at site	Status of Approval
1	Service Road for PUP at Km.377.178	0.883	Completed	PD NAHI has forwarded the proposal to the RO NHAI seeking approval for issuance of Change of Scope Notice to the Concessionaire. Ref Letter: NHAI/PIU/YTL/COS/Pkg-II/2020/261 Dated 06.06.2020
2	SVUP at Km.360.360 and LVUP at 1km.360.500	7.59	Completed	RO NAHI has forwarded the proposal to the Competent Authority seeking approval for issuance of Change of Scope Order to the Concessionaire. Ref Letter: NHAI/RO-NAG/4/COS/MAH-YTL/2020/217 Dated 22.05.2020
3	Upgraded Ambulance	0.48	Provided	Proposal was Submitted by the Concessionaire vide letter No. DBL-MYHPL-HO/NHAI/Mahagaon Yavatmal/HAM/2019-20/51 Dated 03.01.2020
4	Highway mini nest	1.11	Completed	Approved vide letter No: NHAI/RO/NGP/4/4/M-Y/COS-1/Highway Nest/2019-20/3143 Dated:17.02.2020
Total		**10.063**		

Annexure 8: Project Photos



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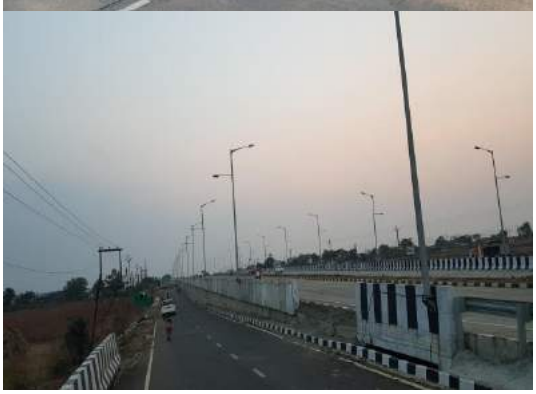
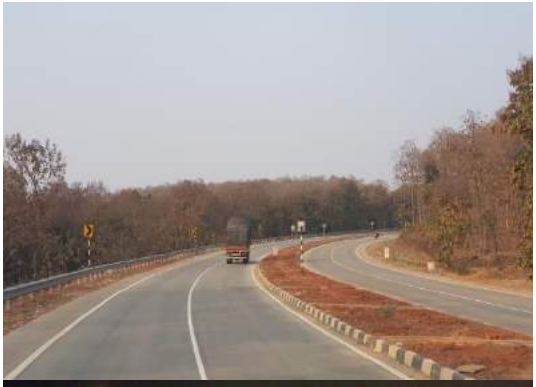


1 Project Name
Four-Laning of Mahagaon to Yavatmal From Km.320.580 to Km.400.575 Section of NH-361
2 Length of the Project
79.995 Km
3 Total Project Cost
1160.84 Crore
4 Client
National Highways Authority of India
5 Independent Engineer
Artefact Projects Ltd. Nagpur
6 Concessionaire Name
DBL Mahagaon Yavatmal Highways Pvt Ltd.

National Highways Authority Of India



SHREM FINANCIAL PRIVATE LIMITED

Four Lanning of Guna-Biora Section of NH-3 from Km.322.100 to Km.426.100 in the State of Madhya Pradesh under NHDP Phase IV to be executed on BOT(Toll) Mode on DBFOT Basis.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Four Lanning of Guna-Biora Section of NH-3 from Km.322.100 to Km.426.100 in the State of Madhya Pradesh under NHDP Phase IV to be executed on BOT(Toll) Mode on DBFOT Basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Guna-Biora	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **JALPA DEVI TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

JALPA DEVI TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing two lane road "Guna - Biora" (SH-15) in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with National Highways Authority of India (herein after referred to as the "Authority") on 21st September, 2015 by four laning on design, build, Finance, operate and transfer (BOT-Toll).

Project road starts at Km. 332+100 Near Guna (design chainage Km. 97+700) and ends at Km. 426+100 Near Biora (design chainage Km. 191+200) on NH-3. It is situated in central part of Madhya Pradesh and passes through settlements namely, Umariya, Ruthiyai and Binaganj. Project location map is provided at **Figure 1.1.**

SHREM TOLLWAYS PRIVATE LIMITED (STPL) acquired JALPA DEVI TOLLWAYS LIMITED vide agreement dated 18.07.2018.

SHREM FINANCIAL PVT LTD (SFPL) appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

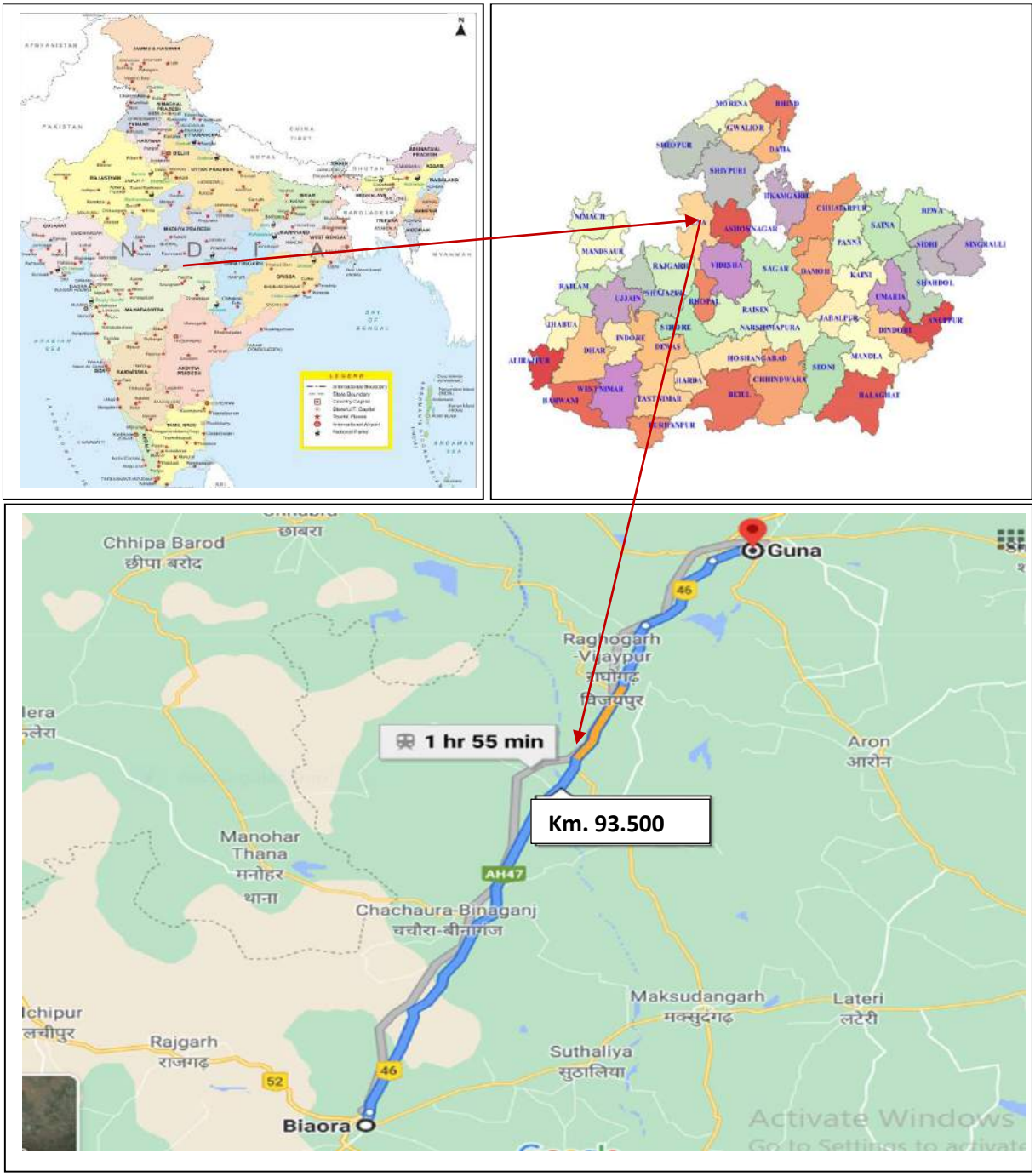

Figure 1.1: Project Location Map

1.2 The Project Data

Table 1.1: Project Data

S No.	Particulars	Details
1	Name of the project	Four Laning of Guna- Biora Section of NH-3 from Km. 332+100 to Km. 426+100 in the state of Madhya Pradesh under NHDP Phase IV to be executed on BOT(Toll) Mode on DBFOT
2	Road Type	National Highway
3	Name of the Authority	National Highways Authority of India
4	Name of the Concessionaire	Jalpa Devi Tollways Ltd
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	29.06.2015
7	Date of Agreement	21.09.2015
8	Design Length as per Schedule B of CA	93.5 Kms.
9	Actual Length Constructed	93.5 Kms.
10	Project Lane Configuration	Four lane with paved shoulder
11	EPC Cost	1012.90 Cr.
12	Nature of contract	BOT (Toll)
13	Toll collected by	The Concessionaire
14	Concession Period	26 years from the Appointed Date
15	Appointed date	07.09.2016
16	Concession End Date	06.09.2042
17	Construction Period	910 days from the Appointed Date
18	Schedule Completion Date	05.03.2019
19	Date of issuance of Provisional Certificate (Commercial Operation Date)	18.06.2018 for 90.0 Kms. length
20	Date of issuance of Completion Certificate	15.09.2018

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest FWD/BI test report

- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per Schedule B of CA	As per COS	As per Site
1	Total Length (Four lane)	93.5 Kms.		93.5 Kms.
2	Realignment/Bypass	06/02 Nos.		06/02 Nos.
3	Toll Plaza	02 Nos.		02 Nos.
4	Bus Bays / Bus Shelters	22 Nos.		22 Nos.
5	Truck Lay Bays	2 Nos.		2 Nos.
6	Rest Area	1 Nos.	-1 Nos.	Nil
7	Major Junction	07 Nos.		07 Nos.
8	Minor Junctions	34 Nos.		34 Nos.
9	ROB	Nil		Nil
10	Level Crossing	Nil		Nil
11	Major Bridges	04 Nos.		04 Nos.
12	Minor Bridges	34 Nos.		34 Nos.
13	Flyovers	02 Nos.		02 Nos.
14	VUP/PUP/CUP	12 Nos.		12 Nos.
15	Box/ Slab Culverts	18 Nos.		18 Nos.
16	Pipe Culverts	73 Nos.		77 Nos.
17	FOB	2 Nos.		2 Nos.
18	Tunnels	2 Nos.		2 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire followed the Typical Cross Section shown below and TCS Schedule as given in Table 2.2 below as per Schedule B of CA during the Construction.

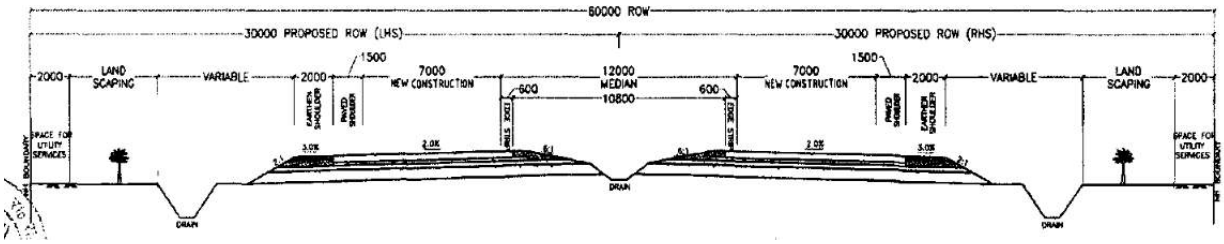

Figure 2.1: Typical Cross Section for new construction without service road (TCS-1)

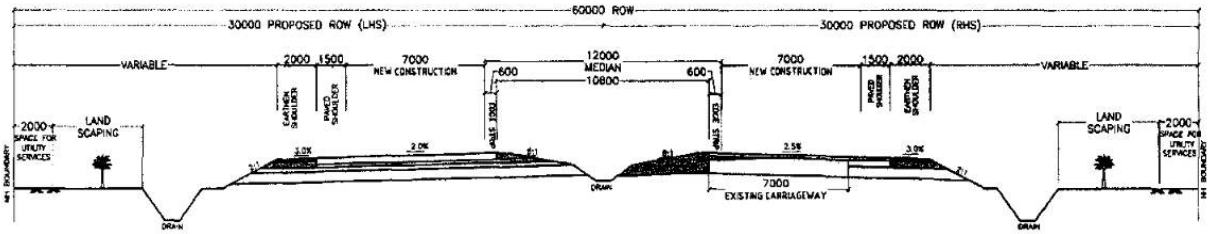

Figure 2.2: Typical Cross Section for left side widening without service road (TCS-3)

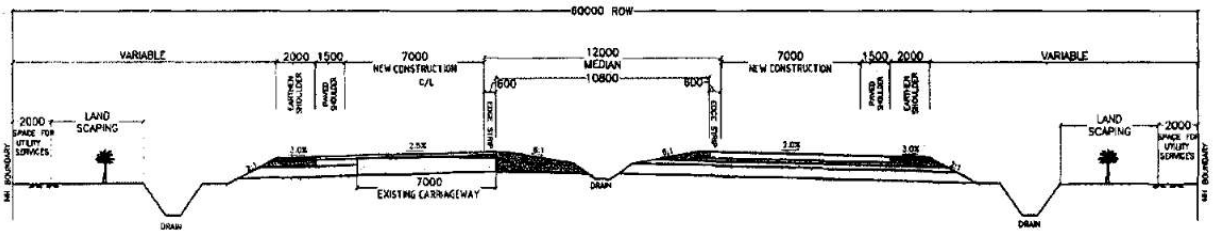

Figure 2.3: Typical Cross Section for right side widening without service road (TCS-4)

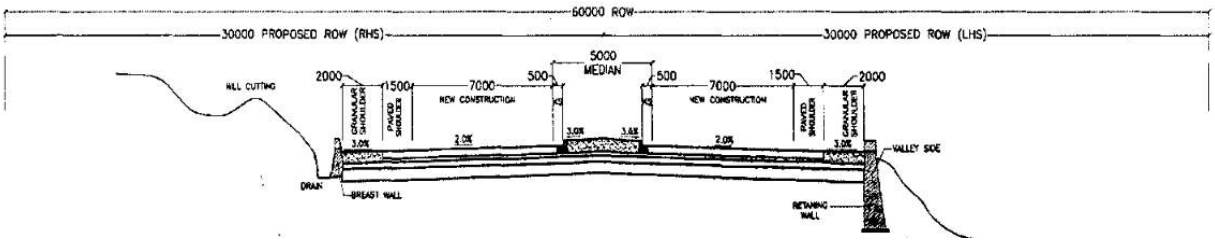

Figure 2.4: Typical Cross Section for ghat section (TCS-5)

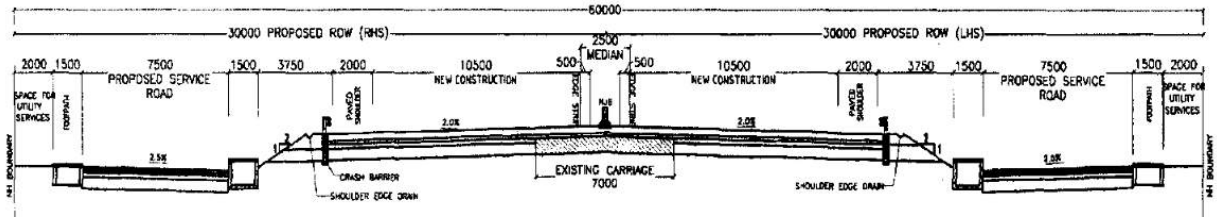

Figure 2.5: Typical Cross Section for concentric widening with both side service road with PUP (TCS-6)

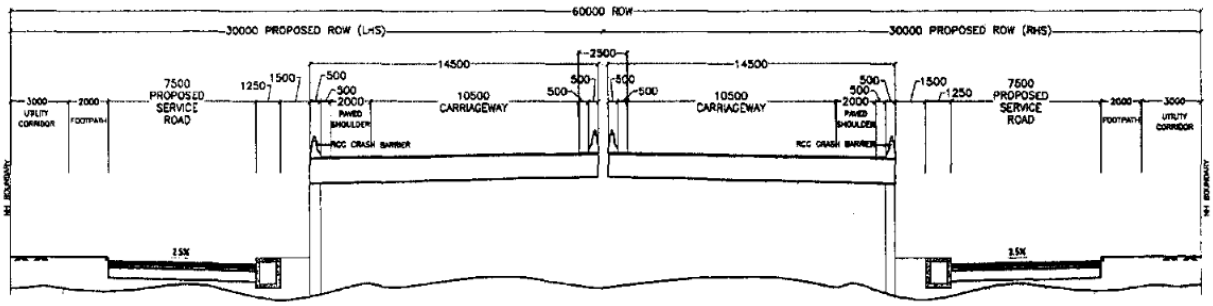

Figure 2.6: Typical Cross Section for right side widening without service road (TCS-9)

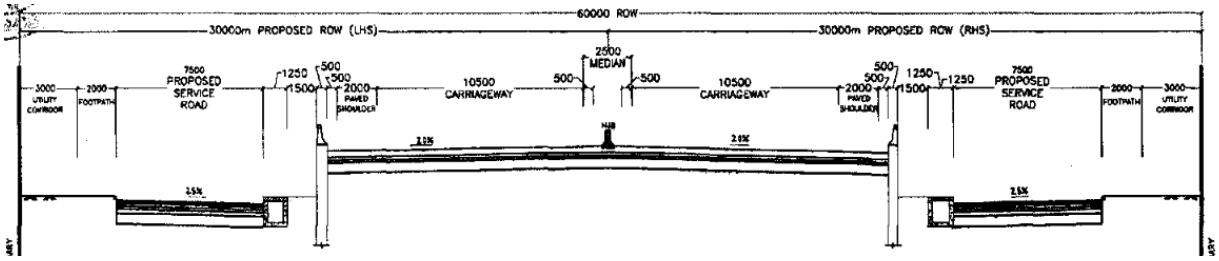

Figure 2.7: Typical Cross Section for CUP/PUP with both side service road 2.5m median (TCS-9A)

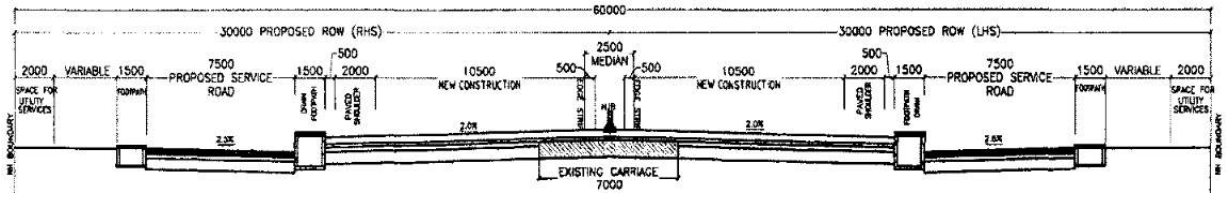

Figure 2.8: Typical Cross Section for concentric widening with both side service road (TCS-11)

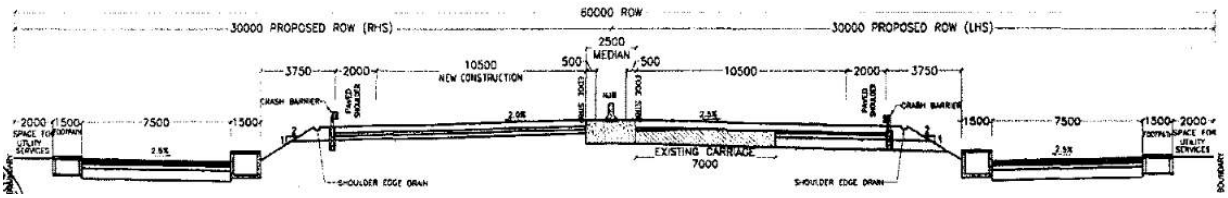

Figure 2.9: Typical Cross Section for left widening with both side service road (TCS-13)

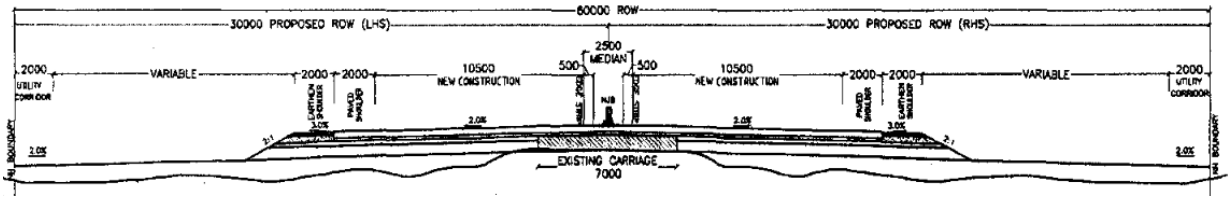

Figure 2.10: Typical Cross Section for concentric widening without service road (TCS-14)

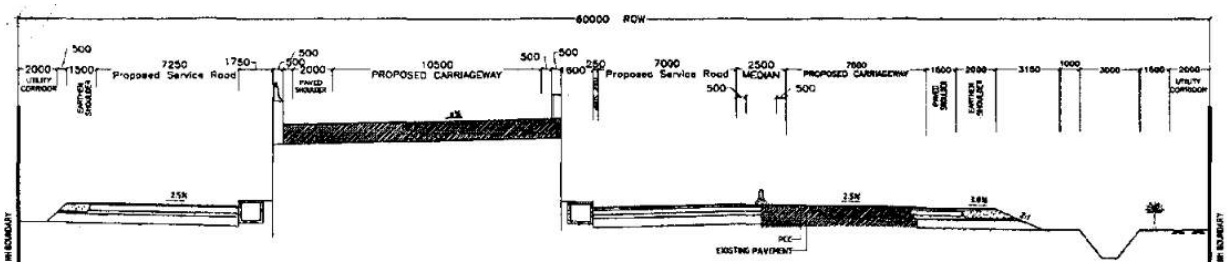

Figure 2.11: Typical Cross Section for 3 lane flyover left side widening with service road (TCS-18)

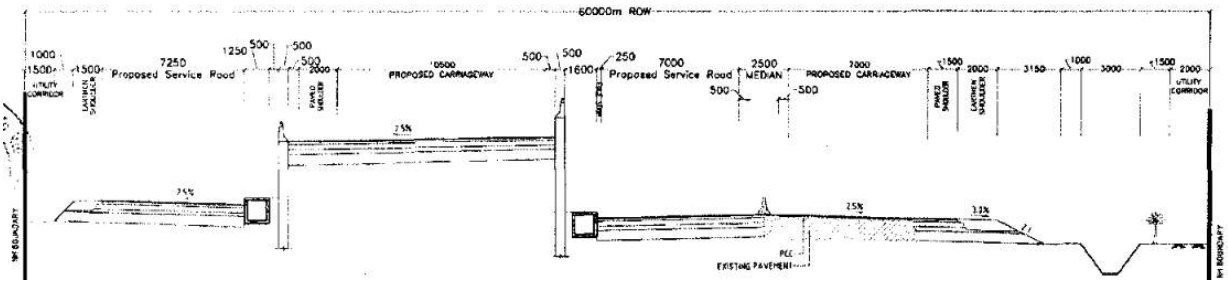

Figure 2.12: Typical Cross Section for 3 lane flyover left side widening with service road (TCS-18A)

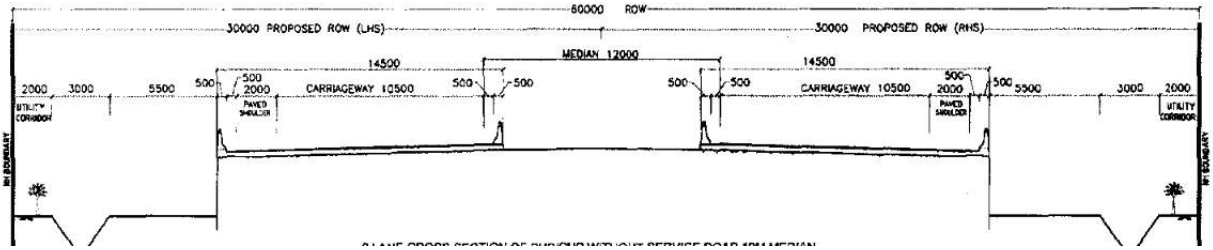

Figure 2.13: Typical Cross Section for 6 lane of PUP/CUP without service road (TCS-19)

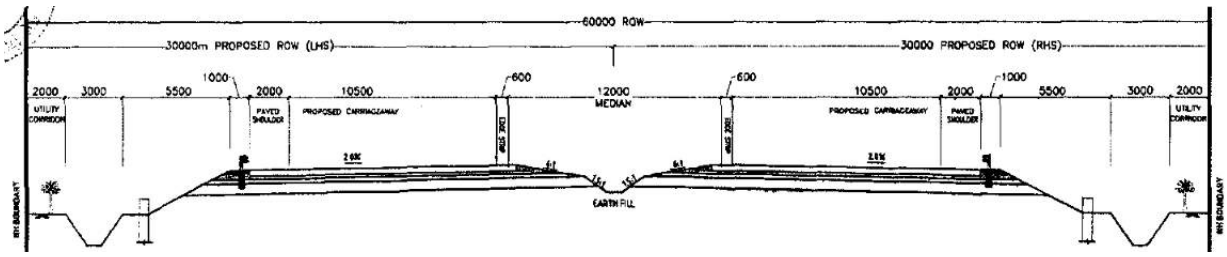

Figure 2.14: Typical Cross Section for PUP/CUP without service road (TCS-19A)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	Existing Chainage (Km.)		Design Chainage (Km.)		Length (Kms.)	TYPE
	From	To	From	To		
1	332+100	332.+800	97+700	98+400	0.70	TCS-4
2	332+800	334+310	98+400	99+840	1.44	TCS-3
3	334+310	335+210	99+840	100+740	0.90	TCS-19A
4	335+210	335+770	100+740	101+300	0.56	TCS-3
5	335+770	339+080	101+300	104+350	3.05	TCS-5
6	339+080	340+100	104+350	105+350	1.00	TCS-3
7	340+100	341+300	105+350	106+350	1.00	TCS-1
8	341+300	342+570	106+350	107+640	1.29	TCS-3
9	342+570	343+310	107+640	108+340	0.70	TCS-19A
10	343+310	344+250	108+340	109+300	0.96	TCS-3
11	344+250	347+100	109+300	111+500	2.20	TCS-1
12	347+100	347+240	111+500	111+620	0.12	TCS-3
13	347+240	347+920	111+620	112+300	0.68	TCS-19A
14	347+920	348+590	112+300	112+978	0.68	TCS-3
15	348+590	349+200	112+978	113+578	0.60	TCS-Proposed Toll plaza
16	349+200	350+820	113+578	115+200	1.62	TCS-3
17	350+820	351+500	115+200	115+850	0.65	TCS-4
18	351+500	355+500	115+850	119+900	4.05	TCS-11
19	335+500	355+900	119+900	120+300	0.40	TCS-14
20	355+900	358+920	120+300	123+350	3.05	TCS-4
21	358+920	360+230	123+350	124+660	1.31	TCS-3
22	360+230	360+770	124+660	125+200	0.54	TCS-19A

S. No.	Existing Chainage (Km.)		Design Chainage (Km.)		Length (Kms.)	TYPE
	From	To	From	To		
23	360+770	361+000	125+200	125+420	0.22	TCS-3
24	361+000	361+550	125+420	125+950	0.53	TCS-1
25	361+550	367+700	125+950	132+150	6.20	TCS-3
26	367+700	369+275	132+150	133+700	1.55	TCS-1
27	369+275	370+160	133+700	134+540	0.84	TCS-4
28	370+160	370+780	134+540	135+160	0.62	TCS-19A
29	370+780	375+340	135+160	139+700	4.54	TCS-4
30	375+340	383+480	139+700	147+860	8.16	TCS-3
31	383+480	384+100	147+860	148+500	0.64	TCS-19A
32	384+100	385+000	148+500	149+400	0.90	TCS-3
33	385+000	-	149+400	152+480	3.08	TCS-1
34	-	-	152+480	153+160	0.68	TCS-19A
35	-	390+330	153+160	155+150	1.99	TCS-1
36	390+330	394+000	155+150	158+800	3.65	TCS-3
37	394+000	395+640	158+800	160+450	1.65	TCS-6
38	395+640	400+160	160+450	164+897	4.45	TCS-3
39	400+160	400+760	164+897	165+497	0.60	TCS-Proposed Toll plaza
40	400+760	402+300	165+497	167+050	1.55	TCS-3
41	402+300	403+300	167+050	168+000	0.95	TCS-1
42	403+300	403+900	168+000	168+600	0.60	TCS-14
43	403+900	405+040	168+600	169+700	1.10	TCS-1
44	405+040	405+240	169+700	169+900	0.20	TCS-4
45	405+240	405+510	169+900	170+150	0.25	TCS-1
46	405+510	409+120	170+150	173+540	3.39	TCS-3
47	409+120	409+820	173+540	174+240	0.70	TCS-19A
48	409+820	416+370	174+240	180+800	6.56	TCS-3
49	416+370	416+670	180+800	181+100	0.30	TCS-4
50	416+670	417+300	181+100	181+740	0.64	TCS-19A
51	417+300	418+660	181+740	183+100	1.36	TCS-4
52	418+660	419+225	183+100	183+650	0.55	TCS-3
53	419+225	420+050	183+650	184+250	0.60	TCS-4
54	420+050	421+450	184+250	185+850	1.60	TCS-13
55	421+450	422+230	185+850	186+650	0.80	TCS-9A
56	422+230	425+100	186+650	189+500	2.85	TCS-3
57	425+100	426+100	189+500	191+200	1.70	TCS-18A

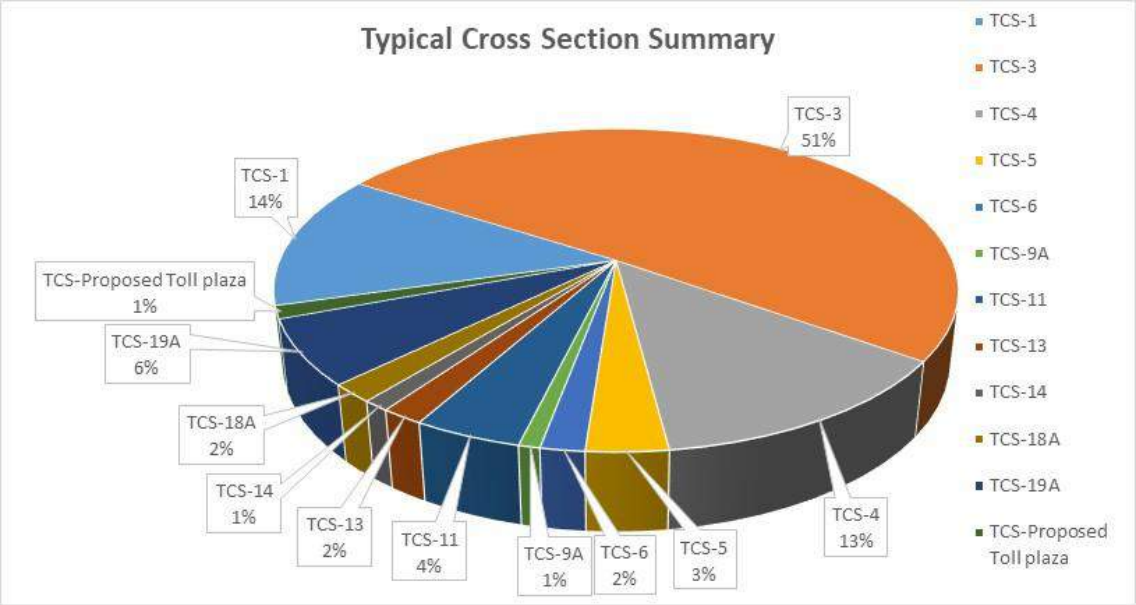

Figure 2.15: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, RCC side drains are constructed along the main carriage way on both flanks at locations as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service road shall be provided along the project road as per provisions of Schedule B of CA. the locations are given below.

Table 2.3: Service road details

S. No.	Existing Chainage (Km.)		Design Chainage (Km.)		Side	Length (Kms.)
	From	To	From	To		
1	351+500	355+500	115+850	119+900	Both	2*4.050
2	394+000	395+640	158+800	160+450	Both	2*1.650
3	420+050	421+450	184+250	185+850	Both	2*1.600
4	421+450	422+230	185+850	186+650	Both	2*0.800
5	425+100	426+130	189+500	191+200	Both	2*1.700
Length of Service Road Both Side Length						**2*9.800**

Km. 250+140

Km. 246+950

Figure 2.16: Service Road.

2.5 Bypass/Realignment

There are 2 bypasses and 6 realignment proposed on the project road as per provisions of Schedule B of CA.

Table 2.4: List of Bypasses

S. No.	Name of Bypass	Existing Chainage (Km.)		Design Chainage (Km.)		Length (Kms.)
		From	To	From	To	
1	Ruthai	344+250	347+100	109+300	111+500	2.20
2	Binaganj	385+000	390+300	149+400	155+150	5.75
				Total Length		**7.95**

Table 2.5: List of Realignments

S. No.	Existing Chainage (Km.)		Design Chainage (Km.)		Length (Kms.)
	From	To	From	To	
1	340+100	341+300	105+350	106+350	1.000
2	361+000	361+550	125+420	125+950	0.530
3	367+700	369+275	132+150	133+700	1.550
4	402+300	403+300	167+050	168+000	0.950
5	403+900	405+040	168+600	169+700	1.100
6	405+240	405+210	169+900	170+150	0.250
			Total Length		**5.380**

2.6 Intersections

As per provisions of Schedule B of CA, 7 Major Junctions and 34 Minor Junctions have been given. Details are given below.

Table 2.6: List of Major Junctions

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Type of Junction	Remarks
1	344+250	109+300	Y	Start of Ruthai Bypass
2	347+100	111+500	Y	End of Ruthai Bypass
3	385+000	149+400	Y	Start of Binagunj Bypass
4	390+300	155+150	Y	End of Binagunj Bypass

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Type of Junction	Remarks
5	420+000	184+400	Y	Start of Biaora Bypass
6	421+800	186+200	+	NH-12 Crossing
7	425+250	189+700	Y	End of Biaora Bypass

Table 2.7: List of Minor Junctions

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Type of Intersection	Cross Road Leading to
1	339+350	104+653	Y	Gopi krisha - Dwar (L)
2	343+650	108+705	Y	To Railway St.
3	349+150	113+521	Y	Pagara (L)
4	351+800	116+139	Y	Vijaypur {R}
5	353+600	117+956	Y	Towards village
6	354+000	118+414	+	jama Masjid (L) Gail (R)
7	354+750	119+139	Y	Sada Colony, Lagho garh (L)
8	355+100	119+529	+	Radhagarh (L) Gail {R}
9	356+050	120+464	+	Radhagarh (L) Yamunapura {R}
10	360+700	125+109	Y	Avan Village {R)
11	365+450	129+886	Y	Narayanpura {R} Raghav Garh (Sugar Factory)
12	366+400	130+881	Y	Madhusudhan Garh (L)
13	369+600	134+05	Y	Khatriya (L)
14	372+700	137+038	Y	Towards village {R}
15	373+250	137+601	Y	Barhkheda Khurd {R}
16	376+350	140+668	Y	Kala Khejra Kalarani {L}
17	378+600	142+971	Y	Daidala {R}
18	385+150	149+592	Y	Jaisinghpura {R} Gail Tower
19	385+500	149+755	Y	Ledari Sirong (L)
20	386+750	151+072	Y	Bijnipura {R}
21	391+950	156+745	Y	Bhaswa (L)
22	393+700	158+51	Y	Chandola {R}
23	395+350	160+194	Y	Rajgarh (R}
24	397+950	162+584	Y	Nityakhedi (R}
25	405+000	169+643	Y	Kila Amargarh (R}
26	409+000	173+412	Y	Sinduriya {R}
27	410+300	174+726	Y	Kachri {R}
28	413+900	178+274	Y	Kilkheda {R}
29	419+350	183+805	+	Kalipith {R} BT Road (L)
30	419+850	184+284	Y	Biaora City (L) Railway Station {R}
31	420+150	184+594	+	Biaora City (L)
32	421+050	185+497	Y	Moya {R}

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Type of Intersection	Cross Road Leading to
33	422+350	186+777	Y	PWD Rest House (L)
34	425+750	190+213	Y	Balchiri (L)

2.7 Grade Separated Structures and underpasses

There are 2 no. Flyovers and 9 no. underpasses has been given as per provisions of Schedule B of CA.

Table 2.8: List of Grade separated structures

S. No.	Location	Existing Chainage (Km.)	Design Chainage (Km.)	Structural Configuration	Structure Type	Span arrangement (M)	Width of Structure (M)
1	On NH-12 Intersection	421+800	186+215	New 6 Lane (Height 5.5m)	RCC Girder	1*15.6+ 2*21.6+ 1*15.6	2*14.5
2	On NH-12 Intersection	425+500	190+25	New 3 Lane (Height 5.5)	PSC Girder	1*37+1*34+ 1*37	1*14.5

Table 2.9: Details of Proposed Pedestrian Underpasses / Cattle Underpasses

S. NO	Existing Chainage (Km.)	Design Chainage (Km.)	Name of intersecting Roads	Structural Configuration	Structure Type	Span (M)	width of Structure (M)
1	334+650	100+187	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
2	343+000	108+032	Dheri Gaon	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
3	347+500	111+896	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
4	360+500	124+936	Avan Village	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
5	370+500	134+83	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
6	383+800	148+167	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
7	Binaganj	152+821	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5
8	409+500	173+788	Sinduriya	New 6lane (Clear Height 4.0m)	RCC Single Box	1*8	2*14.6
9	417+000	181+436	–	New 6lane (Clear Height 4.0m)	RCC Single Box	1*7	2*14.5

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Pavement and carriageway details

Summary of Pavement Details is given below:

Table 2.10: Summary of Pavement and Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	4 Lane with paved shoulder without service road	82.50	1.20	TCS-1, 3, 4, 5, 14, 19A & Toll plaza
2	4 Lane with paved shoulder with service road	9.80	---	TCS-6, 9A, 11, 13 & 18A
3	Total Length of the Project	92.30	1.20	
TYPE OF ALIGNMENT				
4	New Alignment & Reconstruction	22.60	1.20	
5	Widening with strengthening	69.70	---	
6	Total Length of the Project	92.30	1.20	

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.11: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Fly Overs	VUP/PUP /CUP	Remarks
1	Retained							
2	Widening			7	10			
3	Reconstruction			7	8			
4	New	4	34	63		2	12	
5	R & R	1 on RHS	17 one C/W					
	Total	**4**	**34**	**77**	**18**	**2**	**12**	

2.11 Toll Plazas

- There are two toll Plazas on the project road at Km. 113+278 & Km.165+197.
- Each side of toll plaza comprises of 5 lanes.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Rest areas

As per provisions of Schedule C of CA rest areas is provided at 1 location. Details are provided below.

Table 2.12: List of rest areas

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)
1	371+650	135+978

2.13 Truck lay byes

As per provisions of Schedule C of CA truck lay byes are provided at 2 locations. Details are provided below.

Table 2.13: List of Truck lay byes

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Side
1	343+500	108+550	Both Side
2	381+425	145+800	Both Side

2.14 Bus bays/Bus shelters

As per provisions of Schedule C of CA bus bays/shelters are provided at 22 locations. Details are provided below.

Table 2.14: List of Bus bays/shelters

S. No.	Existing Chainage (Km.)	Design Chainage (Km.)	Side
1	334+200	99+732	Both Side
2	338+200	103+506	Both Side
3	344+000	109+026	Both Side
4	347+250	111+620	Both Side
5	350+250	114+630	Both Side
6	353+225	117+627	Both Side
7	354+875	119+265	Both Side
8	360+975	125+356	Both Side
9	365+175	129+615	Both Side
10	367+675	132+121	Both Side
11	370+850	135+230	Both Side
12	374+750	139+091	Both Side
13	382+625	147+005	Both Side
14	384+850	149+250	Both Side
15	390+500	155+320	Both Side
16	394+325	159+140	Both Side
17	398+125	156+869	Both Side
18	400+925	165+673	Both Side
19	403+775	168+463	Both Side
20	416+725	181+157	Both Side
21	419+650	184+083	Both Side
22	425+700	190+028	Both Side

Figure 2.17: Bus bays Km. 229+700.

2.15 Other Project Facilities Provided as per Schedule C of CA

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 84-2014.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below.

Project road starts at Km. 332+100 Near Guna (design chainage Km. 97+700) and ends at Km. 426+100 Near Biora (Design chainage Km. 191+200) on NH-3. It is situated in central part of Madhya Pradesh and passes through settlements namely, Umariya, Ruthiyai and Binaganj. However, during implementation stage due to change in NH number from NH-3 to NH-46 for continuity of NH chainage it is observed that all Km stones are fixed with new project chainages i.e. starts at Km. 223+000 and ends at Km. 317+000. Accordingly, site inventory conducted based on new chainages found at site.

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain and rolling Terrain
2	Land Use	Agriculture and forest
3	Two lane length	93.5 Kms.
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	41 Nos.
6	Toll Plazas	At Km. 113+278 (Design Chainage) & Km. 165+197 (Design Chainage)
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	6 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

Km. 239+300

Km. 250+140

Km. 274+400

Km. 274+500

Km. 305+900

Km. 317+300

Figure 3.1: Photographs of the Road Project

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was

done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is fair. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 3.3: Pavement condition summary

Site Chainages		Length (Kms.)	Condition
From (Km.)	To (Km.)		
223+000	317+000	94.000	Fair

Km. 227+200

Km. 233+300

Km. 247+300

Km. 258+300

Km. 261+300

Km. 290+300

Km. 314+500

Km. 318+500

Figure 3.2: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 04 Nos. Major Bridge, 34 Nos. Minor Bridges, 12 Nos. Underpasses, 02 Nos. Flyovers ,77 Nos. Pipe culverts and 18 Nos. Slab/ Box culverts are there along this project road

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	04
2	Minor Bridge	34
3	PUP/CUP	12
4	Flyovers	02
5	Pipe culverts	77
6	Slab/Box Culverts	18

The major bridges of superstructure are of RCC/PSC I Girder resting on RCC wall type/Circular piers and abutments with open foundation. The minor bridges of superstructure are RCC solid slab/RCC Box type/ RCC/PSC I Girder and the substructures are of PCC/RCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the major bridge at Km. 234+951 is 150.0m with 5 spans. The superstructure consists of PSC Girder. Each pier and whereas abutment is regular RCC wall/Circular type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings/Crash barrier have been provided on both sides of the deck.

The total length of the major bridge at Km. 257+942 is 278.0m with 9 spans. The superstructure consists of RCC/PSC Girder. Each pier and whereas abutment is regular RCC wall/Circular type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings/Crash barrier have been provided on both sides of the deck.

The total length of the major bridge at Km. 293+929 is 98.7m with 3 spans. The superstructure consists of PSC Girder. Each pier and whereas abutment is regular RCC wall type/Circular abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric

bearings. Expansion joints are of Strip seal type. RCC railings/Crash barrier have been provided on both sides of the deck.

The total length of the major bridge at Km. 310+744 is 101.6m with 4 spans. The superstructure consists of RCC/PSC Girder. Each pier and whereas abutment is regular RCC wall type/Circular abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are of Strip seal type. RCC railings/Crash barrier have been provided on both sides of the deck.

Table 4.2: List of Major Bridge

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)
1	234+951	5x30.0	150.0
2	257+942	2x20+7x34	278.0
3	293+929	3x32.9	98.7
4	310+744	4x25.4	101.6

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Km. 293+929

Km. 258+200

Figure 4.1: Overall view of the major bridge

4.4 Details of Minor Bridges

There are 34 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab, RCC Box type & RCCI Girder and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.3: List of Minor Bridge

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	226+094	2x5.0	10	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	230+216	3X18.5	55.5	It has RCC I Girder. It has RCC crash barrier, bituminous wearing coat & Strip seal expansion joints.
3	235+261	1X30.0	30	It has PSC I Girder. It has RCC Railing,

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
				bituminous wearing coat & Strip seal expansion joints.
4	237+524	1x9.0	9	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
5	237+937	2x8.8	8.8	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
6	238+639	1x9.0	9	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
7	238+639	2x3.50	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat
8	240+715	3x9.0	27	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
9	245+053	3x12.5	37.5	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
10	245+807	4x4.5	18	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	249+196	2x5.50	11	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	250+570	2x16.0	32	It has RCC I Girder. It has RCC crash barrier, bituminous wearing coat & Strip seal expansion joints.
13	255+499	2x13.8+1x24.4	51.6	It has RCC I Girder. It has RCC crash barrier, bituminous wearing coat & Strip seal expansion joints.
14	262+322	1x7.0	7	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
15	262+538	1x10.4	10.4	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
16	265+530	1x11.0	11	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
17	267+054	2x8.5	17	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
18	269+304	2x7.4	14.8	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
19	270+019	1x10.85	10.85	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
20	271+197	2x8.6	17.2	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
21	272+657	2x27.7	55.5	It has PSC I Girder. It has RCC Railing, bituminous wearing coat & Strip seal expansion joints.

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
22	276+213	4x6.0	24	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
23	276+381	3x6.0	18	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
24	278+557	3x6.7	20.1	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
25	278+949	4x7.5	30	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
26	280+885	1x12.6	12.6	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
27	283+323	1x9.5	9.5	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
28	287+083	3x6.0	18	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
29	289+963	1x6.7	6.7	It has RCC Slab type structure. It has RCC Crash barrier, bituminous wearing coat, buried type expansion joints.
30	291+244	1x15.0	15	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
31	299+404	2x16.5	33	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
32	308+274	2x16.0	32	It has RCC Slab type structure. It has RCC Railing, bituminous wearing coat, buried type expansion joints.
33	310+564	1x7.6	7.6	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.
34	311+847	1x9.0	9	It has RCC Box structure. It has RCC Railing, bituminous wearing coat.

Figure 4.2: Representative photos of Minor Bridges (Km. 289+963).

4.5 Details of Flyover/Underpass

There are 12 Underpasses & 2 Flyovers in the project stretch. The type of superstructure for underpass/Flyover is RCC I Girder/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type/Strip seal and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.4: Inventory of Underpass

S. No.	Chainage (Km.)	Type of Structure	Span (m)	Total Length of Bridge (m)	Description
1	311+256	Flyover	2x15.6+2x21.6	74.4	It has RCC I Girder type. It has RCC crash barrier, bituminous wearing coat, Strip seal expansion joints, elastomeric bearings.
2	315+291 F	Flyover	2X37.0+1x34.0	108	It has PSC I Girder. It has RCC crash barrier, bituminous wearing coat & Strip seal expansion joints, elastomeric bearings.
3	244+576	VUP	1x25.0	25	It has PSC I Girder. It has RCC crash barrier, bituminous wearing coat & Strip seal expansion joints, elastomeric bearings.
4	255+935	VUP	1x12.0	12	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5	259+926	VUP	1x12.0	12	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6	309+601	VUP	1x12.0	12	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	225+301	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	232+911	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	237+091	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	250+153	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	273+147	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	277+851	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
13	298+791	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
14	306+101	PUP/CUP	1x7.0	7	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

Km. 250+153

Km. 255+935

Km. 311+256

Km. 315+291

Figure 4.3: Representative photos of Flyovers/Underpass

4.6 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections.

4.6.1. Slab/Box Culverts

There are 18 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Slab/Box Culverts

S. No.	Chainage (km.)	Span (m)	Vent Size (m)
1	224+900	1x3.0	1.6
2	226+912	1x3.0	2.47
3	231+970	1x2.0	1.5
4	238+839	1x3.0	1.5
5	242+534	1x2.0	1.5
6	273+479	1x4.5	2.47
7	282+856	1x2.0	1.5
8	284+738	1x5.5	4.2
9	286+083	1x3.75	2.8
10	287+986	1x5.2	3.8
11	288+706	1x5.0	1

S. No.	Chainage (km.)	Span (m)	Vent Size (m)
12	293+231	1x2.5	1.5
13	295+641	1x2.0	1.5
14	312+499	1x2.0	2.2
15	313+044	1x2.6	2.3
16	313+354	1x5.0	2.5
17	314+356	1x2.8	3.0
18	314+583	1x3.0	2.2

4.6.2. Condition of the Slab/Box Culverts:

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

4.6.3. General Description of the Pipe Culverts

There are 77 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.6: List of Pipe Culverts

S. No.	Chainage (Km.)	Span (m)	Sl. No.	Chainage (Km.)	Span (m)
1	223+510	1x1.2	40	266+881	1x1.2
2	224+205	1x1.2	41	267+481	1x1.2
3	226+524	1x1.0	42	270+455	1x1.2
4	227+838	2x1.2	43	271+041	1x1.2
5	228+199	2x1.2	44	272+115	1x1.0
6	228+746	1x1.2	45	273+155	1x1.2
7	229+031	1x1.2	46	274+646	1x1.2
8	229+801	1x1.2	47	275+506	1x1.2
9	231+501	1x1.2	48	275+855	1x1.2
10	232+271	1x1.2	49	277+196	1x1.2
11	233+351	1x1.2	50	278+012	1x1.2
12	234+605	1x1.2	51	278+349	1x1.2
13	235+533	1x1.2	52	279+281	1x1.2
14	235+931	1x1.2	53	279+841	1x1.2
15	236+521	1x1.2	54	280+706	1x1.2
16	240+201	1x1.2	55	283+441	1x1.2
17	241+688	1x1.2	56	285+741	1x1.2
18	244+032	1x1.2	57	286+741	1x1.2
19	244+931	1x1.2	58	287+241	1x1.2
20	245+932	1x1.2	59	288+338	1x1.2
21	246+810	1x1.2	60	290+041	1x1.2
22	247+861	1x1.2	61	291+461	1x1.2

S. No.	Chainage (Km.)	Span (m)
23	248+746	1x1.2
24	249+451	1x1.2
25	250+835	1x1.2
26	251+091	1x1.2
27	252+987	1x1.2
28	253+971	1x1.2
29	254+767	1x1.2
30	255+221	1x1.2
31	255+341	1x1.2
32	257+081	1x1.2
33	257+496	1x1.2
34	258+846	1x1.2
35	259+651	1x1.2
36	261+270	1x1.2
37	262+833	1x1.2
38	263+331	1x1.2
39	265+991	1x1.2

Sl. No.	Chainage (Km.)	Span (m)
62	292+911	1x1.2
63	296+701	1x1.2
64	297+227	1x1.0
65	297+650	1x1.0
66	298+811	1x1.2
67	300+031	1x1.2
68	300+271	1x1.2
69	302+667	1x1.0
70	303+041	1x1.2
71	306+641	1x1.2
72	307+486	1x1.2
73	309+590	1x1.0
74	310+341	1x1.2
75	311+264	1x1.2
76	314+813	1x1.2
77	315+201	1x1.2

4.6.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.
- Slope protection works must be repaired / provided.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

5.2.1. Pavement design crust thickness

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

The project road has been divided into 2 sections i.e. HS-1 (from Km. 97+700 to Km. 145+400) and HS-2 (from Km. 145+400 to Km. 191+200). The design traffic as per traffic during design stage and design traffic as per CA is summarized below

Review of Pavement Design
As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters for Main carriageway *	Design Parameters for Service roads
1	Eff. Sub Grade CBR (%)	11% for HS-1 & 13% for HS-2	9%
2	Design Life (Years)	10 years for BT 25 years for Granular	23 years
3	Design Traffic (MSA)	45 MSA for 10 years 185 MSA for 26 years	10 MSA
4	Surface course (BC)	40 mm	40 mm
5	Binder course (DBM)	90 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	200 mm	200 mm

Note: *The effective CBR is 11% for HS-1 and 13% for Hs-, however the pavement crust has been proposed same for both homogenous sections

Details of Pavement design for Rigid Pavement are as follows:

Table 5.2: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	10 %
Design life in years	30
Commercial Vehicles per Day (CVPD)	5116
Pavement Quality Concrete (PQC) - mm	280
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	290
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	710

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.2.2. Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements". Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. "Guidelines for the Design of Plain Jointed Rigid Pavements for Highways".

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are considered from pavement design report. Summary is given below.

Table 5.3: Real Time Traffic From COD & Project Traffic Current Years For CMSA (TP1:Pagara)

YEAR	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	LCV	Bus	2AT	3AT	MAV					
2018	425	134	600	632	1106	2471	1.67	1.67	1	Actual
2019	453	141	635	672	1172	2620	1.77	3.44	2	Actual
2020	526	313	1460	1405	2501	5679	3.76	7.20	3	Actual
2021	559	329	1540	1489	2643	6001	3.98	11.18	4	Projected
2022	593	346	1625	1577	2792	6341	4.21	15.39	5	Projected
2023	630	364	1714	1671	2950	6700	4.45	19.84	6	Projected
2024	669	383	1809	1770	3117	7080	4.70	24.54	7	Projected
2025	710	403	1908	1876	3294	7481	4.97	29.51	8	Projected

YEAR	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	LCV	Bus	2AT	3AT	MAV					
2026	752	423	2008	1984	3472	7888	5.25	34.76	9	Projected
2027	797	445	2114	2098	3661	8317	5.53	40.30	10	Projected
2028	844	467	2225	2218	3860	8770	5.84	46.13	11	Projected
2029	895	490	2342	2346	4069	9247	6.16	52.29	12	Projected
2030	948	515	2464	2481	4290	9750	6.50	58.79	13	Projected
2031	1002	540	2589	2616	4513	10259	6.84	65.63	14	Projected
2032	1058	567	2720	2759	4748	10794	7.20	72.83	15	Projected
2033	1118	596	2857	2909	4995	11357	7.58	80.41	16	Projected
2034	1182	626	3001	3067	5255	11949	7.98	88.39	17	Projected
2035	1249	657	3153	3235	5528	12572	8.40	96.79	18	Projected
2036	1320	690	3312	3411	5815	13228	8.84	105.62	19	Projected
2037	1394	724	3479	3597	6118	13918	9.30	114.93	20	Projected
2038	1473	760	3655	3793	6436	14644	9.79	124.72	21	Projected
2039	1557	798	3840	3999	6771	15408	10.31	135.03	22	Projected
2040	1645	838	4034	4217	7123	16212	10.85	145.87	23	Projected
2041	1738	880	4237	4447	7493	17058	11.42	157.29	24	Projected
2042	1837	924	4451	4690	7883	17948	12.02	169.31	25	Projected

Table 5.4: Real Time Traffic From COD & Project Traffic Current Years For CMSA (TP-2: Jogipura)

YEAR	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	LCV	Bus	2AT	3AT	MAV					
2018	242	124	561	600	1077	2363	1.74	1.74	1	Actual
2019	258	131	594	638	1142	2505	1.85	3.59	2	Actual
2020	412	307	1356	1338	2404	5405	3.91	7.50	3	Actual
2021	438	323	1431	1418	2540	5711	4.13	11.63	4	Projected
2022	465	340	1509	1502	2684	6035	4.37	16.00	5	Projected
2023	493	357	1592	1591	2836	6377	4.62	20.62	6	Projected
2024	524	376	1680	1686	2996	6738	4.88	25.50	7	Projected
2025	556	396	1772	1786	3166	7120	5.16	30.66	8	Projected
2026	589	415	1865	1889	3338	7507	5.45	36.11	9	Projected
2027	624	436	1963	1998	3519	7916	5.75	41.86	10	Projected
2028	661	458	2066	2113	3710	8347	6.06	47.92	11	Projected
2029	701	481	2175	2234	3912	8801	6.40	54.32	12	Projected
2030	742	505	2289	2362	4124	9280	6.75	61.08	13	Projected
2031	784	530	2405	2491	4338	9764	7.11	68.18	14	Projected

YEAR	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	LCV	Bus	2AT	3AT	MAV					
2032	829	557	2526	2627	4564	10273	7.48	75.66	15	Projected
2033	876	584	2654	2770	4801	10809	7.88	83.54	16	Projected
2034	926	614	2788	2921	5051	11373	8.29	91.83	17	Projected
2035	978	644	2928	3080	5314	11967	8.73	100.55	18	Projected
2036	1034	677	3076	3248	5590	12591	9.19	109.74	19	Projected
2037	1092	710	3232	3425	5881	13248	9.67	119.41	20	Projected
2038	1154	746	3395	3612	6186	13939	10.18	129.59	21	Projected
2039	1219	783	3566	3809	6508	14666	10.71	140.30	22	Projected
2040	1289	822	3746	4016	6846	15431	11.28	151.58	23	Projected
2041	1362	863	3935	4235	7202	16237	11.87	163.45	24	Projected
2042	1439	907	4134	4466	7577	17084	12.50	175.95	25	Projected

Based on the above actual traffic, estimated MSA for 10 years and 25 years are 40, 170 of TP1 respectively. Similarly estimated MSA for 10 years and 25 years of TP2 are 42, 175 respectively.
Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

5.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 45 MSA and 185 MSA for a design life of 10 years for Bituminous layers (up to end of year 2027) and 25 years for granular layers respectively (up to end of year 2042), whereas the actual traffic is 40/42 MSA and 170/175 MSA for 10 years and 25 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

5.4 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed in the year 2024.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Road safety audit summary

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Fair

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Km. 223+000

Km. 227+200

Km. 240+800

Km. 246+950

Km. 261+450

Km. 274+700

Km. 286+550

Km. 307+350

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General:

There are two toll Plazas on the project road at Km. 113+278 (Design Chainage) and Km. 165+197 (Design Chainage). Each side comprises of 4 normal lanes, 1 extra wide lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza buildings are G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at Toll Plaza and Control Room

S. No.	Name of Assets	Make	Units	TP-1	TP-2
Admin Building					
1	Main Server	Lenova	2	1	1
2	24 Port Network Switch	D-Link	4	2	2
3	INTERCOM "MASTER UNIT"	Aiphone	2	1	1
4	NVR	HIKVISION	2	1	1
5	LED TV	AOC/LG	4	2	2
6	Surveillance Camera	HIKVISION	20	8	12
7	Joystick		2	1	1
8	Firewall System	Cyberroam	2	1	1
9	GSM Modem		2	1	1
10	Desktop Terminal	Dell/Lenova	26	16	10
11	Canon Printer		8	6	3
12	Scanner		4	2	2
Booth Equipment					
1	Combined Toll Lane Controller and AVC Controller	Metro	24	12	12
2	MONITOR	Compaq	24	12	12
3	CUSTMIZE KEYBOARD	CHERRY	24	12	12
4	BARCODE READER	Symbol	24	12	12
5	PRINTER	Epson	24	12	12
6	INTERCOM "SALVE UNIT"	Aiphone	24	12	12
7	WEB CAM	Logitech	24	12	12
8	MBC	Metro	24	12	12
9	BOOTH CAMERA	HIKVISION	28	18	18
Lane Equipment					
1	Boom Barrier	Elka	24	12	12
2	UFD		24	12	12
3	Traffic Light		24	12	12
4	LANE CAMERA	Vivotech	24	12	12

S. No.	Name of Assets	Make	Units	TP-1	TP-2
5	LPIC CAMERA	Vivotech	22	12	12
6	Sairan Alarm		24	12	12
7	OHLS		24	12	12
8	PTZ CAMERA (HIKVISION)	HIKVISION	4	2	2
9	WIM	ASBEE	20	10	10
10	SWB	Jyoti	4	2	2
11	Height Sensor Pair		24	12	12
12	RFID Reader	Zebra/Tag Master	20	10	10
13	RFID HHM Machine	Chainway	8	4	4
14	TMS HHM	Balaji	16	8	8

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Make & Model	No.	VEHICLE Reg No	Other Material
1	Patrol Vehicle				
	PAGARA TOLL	TATA CAMPER	1	MP 39 G 2840	WITHFIRE EXTINGUISHER 2 KG
	JOGIPURA TOLL	TATA CAMPER	1	MP 39 G 2839	WITHFIRE EXTINGUISHER 2 KG
2	Ambulance				
	PAGARA TOLL	MAHINDRA	1	MP 39 T 1270	OXYGEN CYLINDER 2 KG
	JOGIPURA TOLL	MAHINDRA	1	MP 39 T 1275	OXYGEN CYLINDER 2 KG
3	Crane				
	PAGARA TOLL	ASHOK LELYLAND	1	MP 04 HE 2173	
	JOGIPURA TOLL	ASHOK LELYLAND	1	MP 04 HE 2206	

Km. 113+278

Km. 165+197

Figure 7.1: Representative Photos of Toll Plazas

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway.

The Total traffic analysis and revenue calculations at the both toll plazas are replicated from the Traffic study report by Ramboll in month of February 2021.

The Concessionaire provided toll plaza wise details of 2020-21 based on the data available and the summarized AADT for the 2020-21 year is provided in **Table 8.1** below.

Table 8.1: Year wise Traffic (Vehicles) Details as per Toll plaza Data

FY/Mode	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Total
TP01 at Pagara toll plaza								
FY21	3984	548	462	1357	1418	2534	3	10306
TP02 at Jogipura toll plaza								
FY21	3030	424	488	1178	1363	2409	3	8895

8.2 Tollable Traffic at both Toll plazas

The Tollable traffic Nos. at the both toll plazas are arrived based on the total traffic movement at both the toll plazas. The Summarized tollable traffic is presented in the below table:

Table 8.2: Summary of 2020-21 Tollable traffic at Toll Plaza

FY/Mode	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Total
TP01 at Pagara toll plaza								
FY21	3369	521	437	1336	1380	2510	3	9555
TP02 at Jogipura toll plaza								
FY21	2709	409	464	1166	1342	2401	3	8493

The figures shown in **Table 8.2** are actual tollable traffic (excluding exempted/non tollable traffic) based on which the toll revenue is collected.

Considering 2021 as the base year and traffic growth rates observed from Ramboll Traffic Survey Report, traffic projections for the balance concession period for both the toll plaza have been calculated and summarized below in **Table 8.3.**

Table 8.3: Details of Projected traffic

a) TP-1: Pagara toll plaza

FY Ending	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	PCUs
2021	3,369	521	437	1,336	1,380	2,510	3	24,916
2025	4,886	613	541	1,628	1,544	3,114	4	30,978

FY Ending	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	PCUs
2030	7,048	728	661	2,013	1,746	4,033	5	39,572
2035	9,931	864	809	2,449	2,004	5,172	7	50,316
2040	13,227	983	946	2,852	2,224	6,323	8	61,260
2042	14,834	1,034	1,008	3,032	2,318	6,852	9	66,335

b) TP-1: Jogipura toll plaza

FY Ending	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	PCUs
2021	2,709	409	464	1,166	1,342	2,401	3	23,054
2025	3,929	481	574	1,414	1,499	2,973	4	28,510
2030	5,667	571	702	1,744	1,694	3,848	5	36,285
2035	7,986	679	858	2,122	1,945	4,935	7	46,015
2040	10,637	771	1,004	2,472	2,158	6,033	8	55,881
2042	11,929	812	1,069	2,628	2,250	6,538	9	60,446

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2020-21) with calculated Traffic growth rates. The WPI growth and toll efficiency has been assumed 4% and 100% respectively and other inputs considered in revenue calculations is given in **Table 8.4.**

Table 8.4: Details of Toll Revenue inputs

Particular	Toll plaza 1	Toll plaza 2
Location	Km. 113+278	Km. 165+197
4 lane length in Kms.	51.7	41.8
2 lane length in Kms.	0	0
Agreement Date	21-09-2015	21-09-2015
Appointed Date	19-03-2016	19-03-2016
Concession period	26	26
Commercial operation date	18-Jun-2018	18-Jun-2018
Concession End Date	18-Mar-42	18-Mar-42
Traffic study year	2020-21	2020-21
Vehicle Type	**AADT**	**AADT**
Car/Taxi/Van	3369	2709
LCV	521	409
Bus	437	464
Truck (2-Axle)	1336	1166
Truck (3-Axle)	1380	1342
4 to 6 Axle	2510	2401
Oversized Vehicle	3	3

The summarized Toll Rates for the both toll plazas used in toll revenue collection for year-wise is given in Table below:

Table 8.5: Details of Toll Rates at each Toll Plaza

a) TP-1: Pagara toll plaza

FY Ending	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Car Local
2021	70	110	230	230	250	360	440	275
2025	80	130	270	270	290	420	510	325
2030	100	160	330	330	360	520	635	400
2035	120	195	410	410	450	645	785	495
2040	150	245	510	510	555	800	970	615
2042	165	265	555	555	605	870	1060	670

b) TP-1: Jogipura toll plaza

FY Ending	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Car Local
2021	60	95	195	195	215	305	370	275
2025	65	110	230	230	250	355	435	325
2030	85	135	280	280	305	440	540	400
2035	105	165	350	350	380	545	665	495
2040	130	205	435	435	470	680	825	615
2042	140	225	470	470	515	740	900	670

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.6: Details of Toll Revenue for both Toll Plaza Estimated (in Rs. Million)

Financial Year	Annual Revenue of TP1 (Km. 348+885)	Annual Revenue of TP2 (Km. 400+465)	Total (in mi.)
2020-21	670.445	532.844	1203.289
2021-22	779.017	621.322	1400.339
2022-23	863.869	685.037	1548.906
2023-24	927.812	740.000	1667.812
2024-25	1019.711	801.575	1821.286
2025-26	1111.037	876.500	1987.536
2026-27	1205.717	961.852	2167.569
2027-28	1329.353	1047.972	2377.325
2028-29	1465.294	1153.548	2618.842
2029-30	1605.289	1260.603	2865.893
2030-31	1740.217	1375.041	3115.259
2031-32	1914.871	1508.409	3423.279
2032-33	2089.688	1649.307	3738.995
2033-34	2292.409	1812.492	4104.900
2034-35	2512.280	1978.974	4491.254

Financial Year	Annual Revenue of TP1 (Km. 348+885)	Annual Revenue of TP2 (Km. 400+465)	Total (in mi.)
2035-36	2724.280	2154.305	4878.584
2036-37	2945.732	2314.566	5260.297
2037-38	3211.881	2518.738	5730.619
2038-39	3484.821	2727.348	6212.169
2039-40	3796.091	2989.819	6785.910
2040-41	4097.997	3231.273	7329.270
2041-42	4462.736	3498.821	7961.557

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
iii. carrying out preventive and periodic maintenance of the Project road;
iv. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

v. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
vi. Functioning of the lighting system;
vii. Functioning of the Patrolling System
viii. Functioning of rescue and medical aid services
ix. Ambulance as and when required
x. Functioning of the Project Facilities
xi. Administrative, Operational and Maintenance Base Camp
xii. Truck Lay byes
xiii. Pickup Bus stops / Bus Bays
xiv. protection of the environment and provision of equipment and materials therefor;
xv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xvi. complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance	Overlay in the year 2024	Planned to execute
2nd Periodic Maintenance	Overlay in the year 2030	Planned to execute
3rd Periodic Maintenance	Overlay in the year 2036	Planned to execute
4th Periodic Maintenance	Overlay in the year 2041	Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of September, 2020. As per Schedule K of CA, "If the stretch exceeds 3000mm in a KM shall be rectified". No stretch exceeds the permissible limit.

9.6.2. Falling Weight Deflectometer (FWD)

The main objective of this study is to conduct Falling Weight Deflectometer (FWD) test for evaluation of strength (MR) of existing crust and propose overlay requirements, for strengthening of the road as per IRC: 115-2014- "Guidelines for Structural Evaluation and Strengthening of Flexible Road Pavements Using Falling Weight Deflectometer (FWD) Technique". Entire section (Km. 191.200 to Km. 97.700) of the project road has been considered as single homogeneous section. The FWD test was conducted in the month of March 2020. Based the FWD results the pavement performance is good, however 40 mm BC has been proposed for entire project to cater the further 50 MSA traffic. In the year 2021. CMSA from COD has reached 11.18 MSA and 11.63 MSA for HS-1 and HS-2 respectively.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operation Expenses	Total cost per year
	(In crores)	(In crores)			
2020	1.417	0.604		8.45	10.47
2021	1.460	0.622		8.71	10.79
2022	1.504	0.641		8.97	11.11
2023	1.549	0.660		9.24	11.45
2024	1.595	0.680	49.61	9.51	61.40
2025	1.643	0.701		9.80	12.14
2026	1.692	0.722		10.09	12.51
2027	1.743	0.743		10.40	12.88
2028	1.795	0.766		10.71	13.27
2029	1.849	0.788		11.03	13.67
2030	1.905	0.812	109.61	11.36	123.69
2031	1.962	0.837		11.70	14.50
2032	2.021	0.862		12.05	14.93
2033	2.081	0.887		12.41	15.38
2034	2.144	0.914		12.78	15.84
2035	2.208	0.942		13.17	16.32
2036	2.274	0.970	130.21	13.56	147.02
2037	2.343	0.999		13.97	17.31
2038	2.413	1.029		14.39	17.83
2039	2.485	1.060		14.82	18.37
2040	2.560	1.091		15.27	18.92
2041	2.637	1.124	143.6	15.72	163.08
2042	2.716	1.158		16.20	20.07
2043	1.218	0.520		7.27	9.00
Total	**47.213**	**20.131**	**433.03**	**281.57**	**781.94**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- Operation and maintenance of the Project road in accordance with the provisions of the Agreement;
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of the Agreement and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.6.1. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE 7.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8.**

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Following Change of scope proposals were initiated during construction period and consented by the NHAI. Details are provided in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and

- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

10.19 Toll fee (Clause 27.1.1)

Toll Fees shall be revised annually in accordance with Clause 27.2.1.

10.20 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 9**. Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001993	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Policy Schedule for Money Insurance	The New India Insurance Co. Ltd	4501004819030000000 3	18.5.2020	17.5.2021	Money in safe(during and after business hours-Jogipura Toll Plaza
Policy Schedule for Money Insurance	The New India Insurance Co. Ltd	4501004820030000000 2	18.5.2020	17.5.2021	Money in safe(during and after business hours-Pagara Toll Plaza
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/51	7.10.2020	06.10.2021 7.9.2021	Electronic Equipment installed in the Project road
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	3114203391761300000	18.5.2020	17.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during routine maintenance period.

12.4 Project Facilities

There are two toll Plazas on the project road at Km. 113+278 and Km. 165+197. Toll plaza buildings are G+1 floor building which houses control room, UPS and Pantry. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at as per highway requirements and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.6 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed at toll plaza is good, whereas calculated growth rates are considered while evaluating forecast of traffic volumes.

12.7 Maintenance

Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date. Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2024.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor, Rutting: M=Moderate & S=Severe

Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

LHS carriageway pavement condition survey data

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
223	224	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
224	225	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
225	226	0	0	0	0	M	0		F	0	PS	F	F	LD	F
226	227	2	0	0	2	M	0		F	0	PS	F	F	ULD	PF
227	228	0	0	0	0	S	0		F	0	PS	F	F	ULD	PF
228	229	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
229	230	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
230	231	0	0	0	0	S	0		F	0	PS	F	F	ULD	PF
231	232	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
232	233	0	0	0	0	M	0		F	0	PS	F	F	LD	F
233	234	0	0	0	0	M	0		F	0	PS	F	F	LD	F
234	235	3	0	0	0	M	2		F	0	PS	F	F	ULD	PF
235	236	0	0	0	0	M	8		F	0	PS	F	F	ULD	PF
236	237	0	0	0	0	M	0		F	0	PS	F	F	LD	F
237	238	0	0	0	0	M	0		F	0	PS	F	F	LD	F
238	239	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
239	240	0	0	0	0	M	2		F	0	PS	F	F	ULD	PF
240	241	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
241	242	0	0	0	0	M	0		F	0	PS	F	F	LD	F
242	243	0	0	0	0	M	0		F	0	PS	F	F	LD	F
243	244	0	0	0	0	M	0		F	0	PS	F	F	LD	F
244	245	0	0	0	0	M	0		F	0	PS	F	F	LD	F
245	246	2	0	0	0	M	0		F	0	PS	F	F	LD	F
246	247	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
247	248	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
248	249	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
249	250	0	0	0	0	M	0		F	0	PS	F	F	LD	F
250	251	0	5	0	0	M	5		F	0	PS	F	F	LD	F
251	252	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
252	253	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
253	254	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
254	255	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
255	256	0	0	0	0	M	3		F	0	PS	F	F	ULD	PF
256	257	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
257	258	0	0	0	0	M	2		F	0	PS	F	F	ULD	PF
258	259	0	0	0	0	M	0		F	0	PS	F	F	LD	F
259	260	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
260	261	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
261	262	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
262	263	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
263	264	0	0	0	0	M	2		F	0	PS	F	F	ULD	PF
264	265	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
265	266	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
266	267	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
267	268	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
268	269	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
269	270	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
270	271	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
271	272	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
272	273	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
273	274	0	0	0	0	M	0		F	0	PS	F	F	LD	F
274	275	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
275	276	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
276	277	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
277	278	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
278	279	0	0	0	0	M	0		F	0	PS	F	F	LD	F
279	280	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
280	281	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
281	282	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
282	283	0	0	0	0	M	0		F	0	PS	F	F	LD	F
283	284	0	0	0	0	M	0		F	0	PS	F	F	LD	F
284	285	0	0	0	0	M	0		F	0	PS	F	F	LD	F
285	286	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
286	287	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
287	288	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
288	289	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
289	290	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
290	291	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
291	292	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
292	293	0	0	0	0	M	0		F	0	PS	F	F	LD	F
293	294	0	0	0	0	M	3		F	0	PS	F	F	LD	F
294	295	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
295	296	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
296	297	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
297	298	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
298	299	0	0	0	0	M	0		F	0	PS	F	F	LD	F
299	300	0	0	0	0	M	0		F	0	PS	F	F	LD	F
300	301	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
301	302	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
302	303	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
303	304	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
304	305	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
305	306	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
306	307	0	0	0	0	M	0		F	0	PS	F	F	LD	F
307	308	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
308	309	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
309	310	0	0	0	0	M	0		F	0	PS	F	F	LD	F
310	311	0	0	0	0	M	0		F	0	PS	F	F	LD	F
311	312	0	0	0	0	M	0		F	0	PS	F	F	LD	F
312	313	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
313	314	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
314	315	0	0	0	0	M	0		F	0	PS	F	F	LD	F
315	316	0	0	0	0	S	0		F	0	PS	F	F	LD	F
316	317	0	0	0	0	M	0		F	0	PS	F	F	LD	F

RHS carriageway pavement condition survey data

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)		Type (LD/ULD/CD/NO)	Condition (PF/F)
223	224	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
224	225	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
225	226	0	0	0	0	M	0		F	0	PS	F	F	LD	F
226	227	0	0	0	0	M	5		F	0	PS	F	F	ULD	PF
227	228	0	0	0	0	M	5		F	0	PS	F	F	ULD	PF
228	229	0	0	0	3	M	5		F	0	PS	F	F	ULD	PF
229	230	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
230	231	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
231	232	0	0	0	0	M	3		F	0	PS	F	F	ULD	PF
232	233	0	0	0	0	M	0		F	0	PS	F	F	LD	F
233	234	0	0	0	0	M	2		F	0	PS	F	F	LD	F
234	235	3	0	0	0	M	0		F	0	PS	F	F	ULD	PF
235	236	0	0	0	0	M	3		F	0	PS	F	F	ULD	PF
236	237	0	0	0	0	M	0		F	0	PS	F	F	LD	F
237	238	0	0	0	0	M	0		F	0	PS	F	F	LD	F
238	239	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
239	240	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
240	241	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
241	242	0	0	0	0	M	0		F	0	PS	F	F	LD	F
242	243	0	0	0	0	M	0		F	0	PS	F	F	LD	F
243	244	0	0	0	0	M	0		F	0	PS	F	F	LD	F
244	245	0	0	0	0	M	0		F	0	PS	F	F	LD	F
245	246	2	0	0	0	M	0		F	0	PS	F	F	LD	F
246	247	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
247	248	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
248	249	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
249	250	3	5	0	0	M	0		F	0	PS	F	F	LD	F
250	251	0	0	0	0	M	0		F	0	PS	F	F	LD	F
251	252	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
252	253	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
253	254	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
254	255	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
255	256	3	0	0	5	M	5		F	0	PS	F	F	ULD	PF
256	257	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
257	258	0	0	0	0	M	3		F	0	PS	F	F	ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)		Type (LD/ULD/CD/NO)	Condition (PF/F)
258	259	0	0	0	0	M	2		F	0	PS	F	F	LD	F
259	260	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
260	261	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
261	262	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
262	263	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
263	264	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
264	265	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
265	266	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
266	267	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
267	268	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
268	269	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
269	270	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
270	271	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
271	272	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
272	273	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
273	274	0	0	0	0	M	0		F	0	PS	F	F	LD	F
274	275	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
275	276	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
276	277	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
277	278	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
278	279	0	0	0	0	M	0		F	0	PS	F	F	LD	F
279	280	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
280	281	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
281	282	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
282	283	0	0	0	0	M	0		F	0	PS	F	F	LD	F
283	284	0	0	0	0	M	0		F	0	PS	F	F	LD	F
284	285	0	0	0	0	M	0		F	0	PS	F	F	LD	F
285	286	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
286	287	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
287	288	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
288	289	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
289	290	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
290	291	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
291	292	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
292	293	0	0	0	0	M	0		F	0	PS	F	F	LD	F
293	294	0	0	0	0	M	0		F	0	PS	F	F	LD	F

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Condition (G/F/P /VP)		Composition	Condition (G/F/P/VP)		Type (LD/ULD/CD/NO)	Condition (PF/F)
294	295	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
295	296	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
296	297	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
297	298	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
298	299	0	0	0	0	M	0		F	0	PS	F	F	LD	F
299	300	0	0	0	0	M	0		F	0	PS	F	F	LD	F
300	301	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
301	302	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
302	303	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
303	304	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
304	305	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
305	306	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
306	307	0	0	0	0	M	0		F	0	PS	F	F	LD	F
307	308	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
308	309	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
309	310	0	0	0	0	M	0		F	0	PS	F	F	LD	F
310	311	0	0	0	0	M	0		F	0	PS	F	F	LD	F
311	312	0	0	0	0	M	0		F	0	PS	F	F	LD	F
312	313	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
313	314	0	0	0	0	M	0		F	0	PS	F	F	ULD	PF
314	315	0	0	0	0	M	0		F	0	PS	F	F	LD	F
315	316	0	0	0	0	M	0		F	0	PS	F	F	LD	F
316	317	0	0	0	0	M	0		F	0	PS	F	F	LD	F

Annexure 2: Condition of Bridges/Underpass

S. No	Chainage (Km.)	Type of Structure	Sub-structure	Super-structure	Wearing coat	Bearings	Quadrant Pitching	Toe wall
1	226+094	Minor Bridge	Good	Good	Good	-	Good	Good
2	230+216	Minor Bridge	Good	Good	Good	-	Good	Good
3	235+261	Minor Bridge	Good	Good	Good	-	Good	Good
4	237+524	Minor Bridge	Good	Good	Good	-	Good	Good
5	237+937	Minor Bridge	Good	Good	Good	-	Good	Good
6	238+639	Minor Bridge	Good	Good	Good	-	Good	Good
7	239+196	Minor Bridge	Good	Good	Good	-	Good	Good
8	240+715	Minor Bridge	Good	Good	Good	-	Good	Good
9	245+053	Minor Bridge	Good	Good	Good	-	Good	Good
10	245+807	Minor Bridge	Good	Good	Good	-	Good	Good
11	249+196	Minor Bridge	Good	Good	Good	-	Good	Good
12	250+57	Minor Bridge	Good	Good	Good	-	Good	Good
13	255+499	Minor Bridge	Good	Good	Good	-	Good	Good
14	262+322	Minor Bridge	Good	Good	Good	-	Good	Good
15	262+538	Minor Bridge	Good	Good	Good	-	Good	Good
16	265+53	Minor Bridge	Good	Good	Good	-	Good	Good
17	267+054	Minor Bridge	Good	Good	Good	-	Good	Good
18	269+304	Minor Bridge	Good	Good	Good	-	Good	Good
19	270+019	Minor Bridge	Good	Good	Good	-	Good	Good
20	271+197	Minor Bridge	Good	Good	Good	-	Good	Good
21	272+657	Minor Bridge	Good	Good	Good	-	Good	Good
22	272+657	Minor Bridge	Good	Good	Good	-	Good	Good
23	276+213	Minor Bridge	Good	Good	Good	-	Good	Good
24	278+557	Minor Bridge	Good	Good	Good	-	Good	Good
25	278+949	Minor Bridge	Good	Good	Good	-	Good	Good
26	280+885	Minor Bridge	Good	Good	Good	-	Good	Good
27	283+323	Minor Bridge	Good	Good	Good	-	Good	Good
28	287+083	Minor Bridge	Good	Good	Good	-	Good	Good
29	289+963	Minor Bridge	Good	Good	Good	-	Good	Good
30	291+244	Minor Bridge	Good	Good	Good	-	Good	Good
31	299+404	Minor Bridge	Good	Good	Good	-	Good	Good
32	308+274	Minor Bridge	Good	Good	Good	-	Good	Good
33	310+564	Minor Bridge	Good	Good	Good	-	Good	Good
34	311+847	Minor Bridge	Good	Good	Good	-	Good	Good
35	234+951	Major Bridge	Good	Good	Good	Good	Good	Good
36	257+942	Major Bridge	Good	Good	Good	Good	Good	Good

S. No	Chainage (Km.)	Type of Structure	Sub-structure	Super-structure	Wearing coat	Bearings	Quadrant Pitching	Toe wall
37	293+929	Major Bridge	Good	Good	Good	Good	Good	Good
38	310+744	Major Bridge	Good	Good	Good	Good	Good	Good
39	311+256	Flyover	Good	Good	Good	Good	-	-
40	315+291	Flyover	Good	Good	Good	Good	-	-
41	225+301	PUP/CUP	Good	Good	Good	-	-	-
42	232+911	PUP/CUP	Good	Good	Good	-	-	-
43	237+091	PUP/CUP	Good	Good	Good	-	-	-
44	244+576	VUP	Good	Good	Good	-	-	-
45	250+153	VUP	Good	Good	Good	-	-	-
46	255+935	PUP/CUP	Good	Good	Good	-	-	-
47	259+926	VUP	Good	Good	Good	-	-	-
48	273+147	VUP	Good	Good	Good	-	-	-
49	277+581	PUP/CUP	Good	Good	Good	-	-	-
50	298+791	PUP/CUP	Good	Good	Good	-	-	-
51	306+01	PUP/CUP	Good	Good	Good	-	-	-
52	309+601	VUP	Good	Good	Good	-	-	-

Annexure 3: Condition of Culverts

Condition of Box/Slab culverts

S. No.	Chainage	Condition	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	224+900	Good	Good	Good	Good	Good
2	226+912	Good	Good	Good	Good	Good
3	231+970	Good	Good	Good	Good	Good
4	238+839	Good	Good	Good	Good	Good
5	242+534	Good	Good	Good	Good	Good
6	273+479	Good	Good	Good	Good	Good
7	282+856	Good	Good	Good	Good	Good
8	284+738	Good	Good	Good	Good	Good
9	286+083	Good	Good	Good	Good	Good
10	287+986	Good	Good	Good	Good	Good
11	288+706	Good	Good	Good	Good	Good
12	293+231	Good	Good	Good	Good	Good
13	295+641	Good	Good	Good	Good	Good
14	312+499	Good	Good	Good	Good	Good
15	313+044	Good	Good	Good	Good	Good
16	313+354	Good	Good	Good	Good	Good
17	314+356	Good	Good	Good	Good	Good
18	314+583	Good	Good	Good	Good	Good

Condition of Pipe culverts

S. No.	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	223+510	Good	Good	Good	Not visible
2	224+205	Good	Good	Good	Not visible
3	226+524	Good	Good	Good	Not visible
4	227+838	Good	Good	Good	Not visible
5	228+199	Good	Good	Good	Not visible
6	228+746	Good	Good	Good	Not visible
7	229+031	Good	Good	Good	Not visible
8	229+801	Good	Good	Good	Not visible
9	231+501	Good	Good	Good	Not visible
10	232+271	Good	Good	Good	Good
11	233+351	Good	Good	Good	Good
12	234+605	Good	Good	Good	Good
13	235+533	Good	Good	Good	Good
14	235+931	Good	Good	Good	Not visible
15	236+521	Good	Good	Good	Not visible

S. No.	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
16	240+201	Good	Good	Good	Good
17	241+688	Good	Good	Good	Good
18	244+032	Good	Good	Good	Good
19	244+931	Good	Good	Good	Good
20	245+932	Good	Good	Good	Good
21	246+810	Good	Good	Good	Good
22	247+861	Good	Good	Good	Good
23	248+746	Good	Good	Good	Good
24	249+451	Good	Good	Good	Good
25	250+835	Good	Good	Good	Good
26	251+091	Good	Good	Good	Good
27	252+987	Good	Good	Good	Good
28	253+971	Good	Good	Good	Good
29	254+767	Good	Good	Good	Good
30	255+221	Good	Good	Good	Not visible
31	255+341	Good	Good	Good	Not visible
32	257+081	Good	Good	Good	Good
33	257+496	Good	Good	Good	Not visible
34	258+846	Good	Good	Good	Good
35	259+651	Good	Good	Good	Good
36	261+270	Good	Good	Good	Not visible
37	262+833	Good	Good	Good	Not visible
38	263+331	Good	Good	Good	Not visible
39	265+991	Good	Good	Good	Good
40	266+881	Good	Good	Good	Good
41	267+481	Good	Good	Good	Good
42	270+455	Good	Good	Good	Not visible
43	271+041	Good	Good	Good	Not visible
44	272+115	Good	Good	Good	Not visible
45	273+155	Good	Good	Good	Good
46	274+646	Good	Good	Good	Good
47	275+506	NV		Good	Good
48	275+855	Good	Good	Good	Good
49	277+196	NV		Good	Good
50	278+012	Good	Good	Good	Good
51	278+349	Good	Good	Good	Good
52	279+281	Good	Good	Good	Good
53	279+841	Good	Good	Good	Good
54	280+706	Good	Good	Good	Good
55	283+441	Good	Good	Good	Good

S. No.	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
56	285+741	Good	Good	Good	Good
57	286+741	Good	Good	Good	Good
58	287+241	Good	Good	Good	Good
59	288+338	Good	Good	Good	Good
60	290+041	Good	Good	Good	Good
61	291+461	Good	Good	Good	Good
62	292+911	Good	Good	Good	Good
63	296+701	Good	Good	Good	Good
64	297+227	Good	Good	Good	Good
65	297+650	Good	Good	Good	Good
66	298+811	Good	Good	Good	Good
67	300+031	Good	Good	Good	Good
68	300+271	Good	Good	Good	Good
69	302+667	Good	Good	Good	Good
70	303+041	Good	Good	Good	Good
71	306+641	Good	Good	Good	Good
72	307+486	Good	Good	Good	Good
73	309+590	Good	Good	Good	Good
74	310+341	Good	Good	Good	Good
75	311+264	Good	Good	Good	Good
76	314+813	Good	Good	Good	Good
77	315+201	Good	Good	Good	Good

Annexure 4: Toll Revenue Calculations

Toll Plaza-I & II:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2020-21)

Vehicle Type	Traffic (AADT)	Traffic (AADT)
	Km. 113+778	Km. 165+197
Car/Taxi/Van	3369	2709
LCV	521	409
Bus	437	464
Truck (2-Axle)	1336	1166
Truck (3-Axle)	1380	1342
4 to 6 Axle	2510	2401
Oversized Vehicle	3	3

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Vehicle Type	Cars	Bus	LCV	2-AT	3-AT	MAV
2022.00	12.00	8.50	5.10	7.50	4.90	8.20
2023-25	9.00	4.50	3.80	5.60	3.70	6.10
2026-30	7.60	4.10	3.50	4.60	2.80	5.60
2031-35	7.10	4.10	3.50	4.00	2.80	5.10
Beyond 2035	5.90	3.20	2.60	3.10	2.10	4.10

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution

A) TP-1: Km. 113+778 at Pagara for Base Year 2020-21 (in %)

Category	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME
Normal Toll	95.8	85.8	99.6	100.0	100.0	100.0	100.0
Daily Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Personal Concessions	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Local Commercial	0.0	14.2	0.4	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

B) TP-2: Km. 165+197 at Jogipura for Base Year 2020-21 (in %)

Category	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME
Normal Toll	99.4	99.3	100.0	100.0	100.0	100.0	100.0
Daily Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly Pass	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local Personal Concessions	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Local Commercial	0.0	0.6	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

4. Toll Rates :

Table-4: Details of Toll Fee (Base Year 2020-21)

Vehicle Type	Km. 348+885	Km. 400+465
Car/Taxi/Van	70	60
LCV	110	95
Bus	230	195
Truck (2-Axle)	230	195
Truck (3-Axle)	250	215
4 to 6 Axle	360	305
Oversized Vehicle	440	370

Note: Local personal car passes: Rs.275

Toll Plaza-1 Toll Revenue (*in Rs. million per year):*

Financial Year(FY)	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Total
2021	78.673	18.432	34.706	106.277	119.367	312.533	0.457	670.445
2022	92.943	20.436	40.589	123.142	134.734	366.640	0.533	779.017
2023	108.522	22.250	44.221	135.571	147.938	404.777	0.591	863.869
2024	118.648	24.086	48.229	145.723	154.905	435.566	0.655	927.812
2025	137.557	27.011	53.216	160.432	163.443	477.331	0.722	1019.711
2026	157.233	28.949	57.449	171.794	174.032	520.779	0.799	1111.037
2027	169.230	31.160	61.941	186.114	187.704	568.692	0.876	1205.717
2028	193.308	33.583	67.999	205.306	199.534	628.654	0.969	1329.353
2029	218.955	35.764	74.068	224.696	213.859	696.887	1.065	1465.294
2030	247.980	39.484	79.514	242.377	229.406	765.350	1.180	1605.289
2031	265.643	42.240	86.539	263.530	245.655	835.320	1.289	1740.217
2032	299.543	45.062	94.259	286.771	266.731	921.085	1.420	1914.871
2033	335.167	49.248	101.935	309.820	283.834	1008.130	1.553	2089.688
2034	375.282	53.804	111.769	339.396	306.015	1104.443	1.701	2292.409

Financial Year(FY)	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Total
2035	419.394	57.264	120.772	366.377	329.215	1217.388	1.871	2512.280
2036	463.905	61.699	131.075	397.246	348.285	1320.030	2.040	2724.280
2037	509.559	66.215	139.609	422.690	373.693	1431.758	2.208	2945.732
2038	581.005	71.103	150.551	455.379	397.114	1554.337	2.393	3211.881
2039	637.285	76.199	162.051	489.690	421.353	1695.640	2.603	3484.821
2040	700.129	81.736	176.336	532.348	451.729	1850.981	2.834	3796.091
2041	764.107	87.051	188.598	568.816	480.673	2005.674	3.078	4097.997
2042	861.298	92.822	203.811	614.111	511.921	2175.426	3.346	4462.736

Toll Plaza-2 Toll Revenue (in Rs. million per year):

Financial Year(FY)	Car	LCV	Bus	2-axle Truck	3-axle Truck	MAV	O/size/HME	Total
2021	55.976	13.405	31.276	78.682	99.799	253.322	0.384	532.844
2022	66.134	14.868	36.716	91.515	113.007	298.625	0.456	621.322
2023	72.089	16.242	40.287	101.472	122.515	331.929	0.503	685.037
2024	85.355	17.748	44.225	109.380	128.972	353.764	0.555	740.000
2025	92.788	19.250	48.184	118.672	136.801	385.265	0.616	801.575
2026	107.515	20.827	52.341	127.615	143.974	423.549	0.680	876.500
2027	123.947	22.496	56.757	139.047	153.698	465.159	0.750	961.852
2028	133.737	24.317	61.616	151.675	164.302	511.498	0.827	1047.972
2029	153.073	26.106	66.427	164.304	177.465	565.266	0.906	1153.548
2030	174.998	28.056	71.712	178.227	188.618	617.989	1.003	1260.603
2031	187.429	30.117	78.651	195.286	203.435	679.030	1.094	1375.041
2032	213.124	32.377	84.883	210.558	219.534	746.729	1.204	1508.409
2033	240.277	35.715	92.456	229.121	235.142	815.279	1.316	1649.307
2034	270.879	38.162	100.758	249.456	252.086	899.701	1.451	1812.492
2035	304.614	40.736	109.586	271.051	269.794	981.609	1.585	1978.974
2036	338.871	44.441	118.262	292.228	287.118	1071.657	1.729	2154.305
2037	357.900	46.775	126.715	312.812	307.148	1161.343	1.872	2314.566
2038	396.242	50.657	135.932	335.240	328.712	1269.913	2.043	2518.738
2039	437.865	54.710	147.385	363.132	347.188	1374.859	2.211	2727.348
2040	503.701	57.698	159.868	393.507	371.248	1501.387	2.410	2989.819
2041	552.424	61.916	170.206	418.550	398.115	1627.438	2.623	3231.273
2042	606.690	66.480	183.460	450.703	422.899	1765.748	2.841	3498.821

Toll Plaza-1 &2 Total Revenue (in Rs. million per year):

Financial Year(FY) ending March	Total Revenue (Without POS & WIM)	Total Revenue (With POS & WIM)
2021	1203.289	1216.646
2022	1400.339	1415.883
2023	1548.906	1566.099
2024	1667.812	1686.325
2025	1821.286	1841.503
2026	1987.536	2009.598
2027	2167.569	2191.629
2028	2377.325	2403.713
2029	2618.842	2647.911
2030	2865.893	2897.704
2031	3115.259	3149.838
2032	3423.279	3461.278
2033	3738.995	3780.498
2034	4104.900	4150.465
2035	4491.254	4541.107
2036	4878.584	4932.737
2037	5260.297	5318.687
2038	5730.619	5794.229
2039	6212.169	6281.124
2040	6785.910	6861.233
2041	7329.270	7410.625
2042	7961.557	8049.931

Note: The Total traffic analysis and revenue calculations at the both toll plazas are replicated from the Traffic study report by Ramboll in month of February 2021.

Annexure 5: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	103.3	12	4	350	17,35,440	04 Nos. of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	8.5	24	4	350	2,85,600	04 Nos. of Labour
3	Watering in Median Plants	Once in Week	Kms.	94.8	52	1	1939	95,58,494	01 Nos. of Labour
4	Watering in Avenue plants	Once in Week	Kms.	0	52	0	1939		
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Kms.	94.8	12	0	21000		02 Nos. of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Kms.	51.65	2	5	350	1,80,775	5 Nos. of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	95	2	2	650	2,47,000	3 Nos. of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Kms.	103.3	4	2	350	2,89,240	02 Nos. of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	22	6	2	350	92,400	2 Nos./ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	5.00	6	60	350	6,30,000	02 Nos. of Labour for 30 days
11	Bridges	Half yearly	Nos.	48	2	2	350	67,200	02 Nos. of Labour for removal of vegetation/ Structure
								1,30,86,149	

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	EQUIPMENT SUPPLY								
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12	1	5000	60,000	Considered Rs5000/- maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	1.0	12	1	5000	60,000	Considered Rs5000/- maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000		(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.	1	12	1	62500	7,50,000	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	1.0	12	0	12000	600	(12000/year)
6	Manhoise/ Skyscraper	Monthly	Nos.		12		400000		(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos.	3.0	12	0.200	2500	6,000	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1			
9	Toll plaza AMC	Yearly	Nos.		12	2	5000	1,20,000	5000/month
								9,96,600	

1	Patrolling vehicle	Monthly	Nos.	12		2	5000	10000	Considered Rs5000/- maintenance
2	Ambulance	Monthly	Nos.	12		2	5000	10000	Considered Rs5000/- maintenance

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
3	Tow away trucks and Crane	Monthly	Nos.	12		2	5000	10000	Considered Rs5000/- maintenance
4	Consumbales for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumbales for Route Patrolling & Crane	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								90,000	

Total Routine Maintenance: 1,41,72,749.00

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sq.m.	1	1	6430.46	516	33,18,119	5 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sq.m	1	1	1475.68	168	2,47,914	2.5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cu.m.	1	3	774.75	225	5,22,956	2.5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	19	4000	76,000	2.5 % of Total sign boards per half year (considered 750 Nos.)
5	MBCB	Monthly	RMT			198	2400	4,75,200	2% of Total qty. per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone	Quarterly	Nos.	103.3	4	52	2250	4,68,000	10 % of total stones per

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
	/ ROW stone etc.)								year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Kms.	0	4	0	1000		5 % of total ROW fencing per year
8	Kerb	Yearly	Kms.	187000	1	3740.0	250	9,35,000	1 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	2673		80	55000		3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	0.00	4000		Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt. conforming to IRC:21 and fixing with dowel bars 16 mm dia. to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT	0		0	3985		3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**60,43,189**	

Operational Expenses

S.NO.	PARTICULARS	Amount
1	Man Power	₹ 2,20,68,000
2	Fuel for Generator & Vehicles	₹ 4,49,88,000
3	Insurances	₹ 27,67,484
4	AMC	₹ 10,00,000
5	Electricity	₹ 1,32,00,000
6	Stationary	₹ 5,00,000
	Total Amount	**₹ 8,45,23,484**

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	30-01-2021					
1st Major Maintenance - Highway	01-04-2024	45,26,78,236	3.20	3.0%	49,61,35,347	49.61
2nd Major Maintenance - Highways	25-05-2030	85,69,99,981	9.30	3.0%	1,09,61,02,975	109.61
1st Major Maintenance - Structures	23-05-2036	3,54,62,112	15.30	3.0%	5,17,39,222	5.17
3rd Major Maintenance - Highways	25-05-2036	85,69,99,981	15.30	3.0%	1,25,03,62,972	125.04
4th Major Maintenance - Highways	25-05-2041	85,69,99,981	20.30	3.0%	1,37,89,12,969	137.89
2nd Major Maintenance - Structures	22-05-2041	3,54,62,112	20.30	3.0%	5,70,58,539	5.71
				Total	₹ 4,33,03,12,023	433.03

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Chapter 4. Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	19,67,574.50	14.00	2,75,46,043
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum		7,382.00	
3	Micro sufacing	Sqm	19,67,574.50	185.00	36,40,01,283
	Total				**39,15,47,326**
	Chapter 9 Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative.	Rmt		380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	1,28,609.25	466.00	5,99,31,911
3	Road Studs	Nos	2,180.00	550.00	11,99,000
	Total			-	**6,11,30,911**
	Grand Total				**45,26,78,236**

Annexure 6: Letter of Award

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India
(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

Original

NHAI/MP/BOT/Guna-Bioara/11012/02/2014 / 68307

29th June, 2015

To,
M/s Dilip Buildcon Ltd
Plot no. 5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal-462016

Sub: Four laning of Guna-Biaora section of NH-3 from Km 332.100 to Km 426.100 in the State of Madhya Pradesh under NHDP Phase-IV to be executed in BOT (Toll) mode on DBFOT basis.-**LOA**.

Ref : 1. NHAI's letter no. NHAI/MP/BOT/Guna-Biaora/11012/02/2014 dated 24.04.2015.
2. Your Bid submitted on 22.06.2015.

Sir,

Consequent upon NHAI's letter mentioned at reference no. 1, wherein you were informed of having been qualified in terms of the requirements of the Request for Qualification (RFQ) document and eligible to submit the Request for Proposal (RFP) in respect of the Project of "Four laning of Guna-Biaora section of NH-3 from Km 332.100 to Km 426.100 in the State of Madhya Pradesh under NHDP Phase-IV to be executed in BOT (Toll) mode on DBFOT basis" and considering your proposal in this regard submitted on 22.06.2015 vide Ref. 2, NHAI hereby accepts your proposal, quoting a grant amounting to Rs 27.00 Cr (Rupees twenty seven crores only) (i.e. 2.67% of TPC) as included in Appendix-1 of your Bid Document(i.e. Price Bid) and declares you as the "Selected Bidder" as per provision of RFP Documents. Please note that the amount of grant quoted by you shall be dealt in accordance with the provisions of RFP Documents. The Concession Period is 26 (Twenty Six) years including Construction Period of 910 (Nine Hundred Ten) days from the "Appointed Date".

2 In accordance with the clause 3.3.5 of the RFP document (Volume – I), you are requested to sign the duplicate copy of the LOA and return the same as your acknowledgment within 07(seven) days of receipt of LOA. Thereafter, you are required to execute the Concession Agreement within 45 (Forty Five) days from the date of issue of LOA as specified in clause 1.3 of RFP.

3. Further, as per RFP documents, you are required to incorporate a Special Purpose Vehicle (SPV) solely for the purpose of domiciling the project (the "Concessionaire"). The Concessionaire for due and faithful performance of its obligations during the Construction Period shall furnish a Performance Security by way of an irrevocable and unconditional Bank Guarantee of Rs. 50.65 Crores (Rupees Fifty Crores and Sixty Five Lakhs Only) within the period of the 180th day from the date of signing of the Concession Agreement. Till the time the Concessionaire provides NHAI with the Performance Security, the Bid Security shall remain in full force and effect (refer Clause 4.1.2 and Clauses of Article-9 of RFP–Vol- II).

-2-

4. You are required to comply with all the terms and conditions set forth in the RFQ and the RFP documents. In case of any default on your part, you shall be liable for action as stated in the Bid Documents.

Yours faithfully,

(Atul Kumar)
Chief General Manager (Tech)

Copy to following for information:

iii) RO Bhopal, E-2/167, Arera Colony, Bhopal
iv) PD PIU Guna

Annexure 7: Provisional Certificate

aarvee associates
architects engineers & consultants pvt. ltd.
An ISO 9001:2008 Certified Company

Letter No. AA/HW/2040/18-19/1837
Date: 17th June, 2018.

To
The Authorised Signatory,
M/s Jalpa Devi Tollways Ltd.,
Village: Gader, District: Guna,
Madhya Pradesh.

Sub: Four laning of Guna – Biaora section from Km 332.100 to Km 426.100 (Package-II) of NH-3 in the State of Madhya Pradesh to be executed on BOT (Toll) on DBFOT pattern under NHDP Phase-IV – **Reg:** Provisional Certificate – Issued.

Ref:
1. RO, NHAI, Bhopal Letter No. NHAI/RO-MP/Guna/Conss./Guna-Biaora/2018/31519, dated 05.06.2018.
2. Our Letter No. AA/HW/2040/18-19/1406, dated 30.05.2018.
3. Concessionaire's Letter No. Jalpa Devi/IE/GUNA-BIARO/BOT/2018-2019/926, dated 23.05.2018.
4. Our Letter No. AA/IE/G-B/2040/18-19/716,dated 05.05.2018.
5. Concessionaire's Letter No. Jalpa Devi/IE/GUNA-BIARO/BOT/2018-2019/887, dated 20.04.2018.

Dear Sir,

Pursuant to the provisions of Clause 14.3.2 of the Concession Agreement and concurrence of Authority for issuance of Provisional Certificate for a part length of 90 km of the Project Highway, vide letter no. 31519, we are pleased to issue 'Provisional Certificate' upon substantial completion of part length of 90 km of the Project Highway, duly appended with the Punch List (List-A) containing the list of minor works to be completed within 90 days of issuance of Provisional Certificate and List-B, the works, to be taken-up as and when land is made available and to be completed within a reasonable time as assessed by the Independent Engineer.

We wish you all the best.

With best regards,
for Aarvee Associates Architects Engineers & Consultants Pvt. Ltd.,

K.V.S.Prasad
Authorised Signatory

Encl: a. Provisional Certificate for part length of 90.000 km of the Project Highway
b. Punch List (List-A)
c. List-B

Copy to:
1. The General Manager-MP, NHAI HQ, Delhi.
2. The Project Director, PIU, NHAI, Guna.
3. The Authorised Signatory, M/s Jalpa Devi Tollways Ltd., Village: Gader, District: Guna.
4. The Team Leader, Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Guna.

Ravula Residency, Srinagar Colony Main Rd., Hyderabad – 500 082, India.
Tel: +91-40-23737633,48483456; Fax: +91-40-23736277; email: aarvee@aarvee.net; web: www.aarvee.com
CIN: U74200TG2005PTC045491

PROVISIONAL CERTIFICATE

1. We, Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., acting as Independent Engineer, under and in accordance with the Concession Agreement dated 21st Sep'15 (the **"Agreement"**), for Four-Laning of the Guna – Biaora section of NH-3 from Km 332.100 to Km 426.100 in the state of Madhya Pradesh under NHDP Phase IV to be executed on BOT (Toll) mode on DBFOT basis (the **"Project Highway"**) through M/s. Jalpa Devi Tollways Limited, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of a part of the Project Highway (96.25%) with the provisions of the Agreement.

2. Construction Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire), we are satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway, pending completion thereof.

3. In view of the foregoing, we are satisfied that the Project Highway from Km 97.700 to Km 119.200, Km 120.000 to Km 130.600, Km. 131.300 to Km. 184.200 and Km 185.000 to Km 190.000 for an aggregate length of 90.000 km can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the 18th day of June 2018.

ACCEPTED, SIGNED, SEALED AND DELIVERED	SIGNED, SEALED AND DELIVERED
For and on behalf of CONCESSIONAIRE by	For and on behalf of INDEPENDENT ENGINEER by
(Signature)	(Signature)
Dileep Singh Project Manager M/s. Jalpa Devi Tollways Limited	K V S Prasad Vice President-Operations (Highways) Aarvee Associates Architects Engineers & Consultants Pvt. Ltd. 8-2-5, Ravula Residency Srinagar Colony Main Road Hyderabad

Annexure-VI(a)

Four Laning of Guna - Biaora Section from Km 332.100 to Km 426.100 of NH-3 (Package-2) in the State of Madhya Pradesh

PUNCH LIST (LIST-A)

MINOR OUTSTANDING WORKS TO BE COMPLETED WITHIN 90 DAYS OF PROVISIONAL CERTIFICATE

S. No.	Description of Item	Unit	Quantity	Remarks
1	Slope Dressing with Turfing	Km.	14.642	At identified locations
2	Earthen Drain	Km.	14.350	Balance Drain to be constructed
		Entire Project Highway		Sectioning of Earthen Drain (Median and Side drains) to proper dimensions.
3	Replacement of damaged covers over lined drains	Rm	200	At identified locations
	Rectification of Line and Level of covers over lined drains	Rm	800	At identified locations
4	To rectify the median walls at 'Open to Sky' locations of structures.	No.	27	At locations of PUP/VUP/Minor Bridges
	Provide Covers at 'Open to Sky' locations in Medians	No.	10	At locations of PUP/VUP
5	Installation of cantilever overhead sign boards	No.	4	1) Bypasses
6	Completion of Balance Works at Bus Shelter	No.	22 (BHS)	1) Hand rail 2) Litter Bins 3) Proper shade for passengers 4) Balance Bus Shelters to be Constructed.
7	Protection works for structures	No.	10	List Enclosed
8	Provision of Saucer drain at RE wall	Km.	6.03	At all RE wall Locations

JALADEVI TOLLWAYS LIMITED

Annexure-VI(a)

Four Laning of Guna - Biaora Section from Km 332.100 to Km 426.100 of NH-3 (Package-2) in the State of Madhya Pradesh

PUNCH LIST (LIST-A)

MINOR OUTSTANDING WORKS TO BE COMPLETED WITHIN 90 DAYS OF PROVISIONAL CERTIFICATE

S. No.	Description of Item	Unit	Quantity	Remarks
9	Rectification of line and level of concrete crash barrier and Metal Beam Crash Barrier	Rm	1.931	At identified locations
10	Avenue Plantation in balance locations to be done and casualties to be replaced	No.	1720	Along the Project Highway
11	Median Plantation in balance locations to be done and casualties to be replaced	No.	966	Along the Project Highway
12	ROW Cleaning	Km.	21.740	Along the Project Highway
13	Landscaping	Km.	39.000	At Median Openings.
14	Vent Clearance and numbering of Structures	No.	137	At all MNBs/MJBs/Culverts
15	Slope Protection works in high embankment locations	Rm	810	At identified locations
16	Road Boundary stones	No.	50	1) Replacement / rectification of missing / damaged 2) Painting in all the Boundary Stones
17	Provision of MBCB in locations of depressed median	Km.	74.658	As per decision of Interpretation committee on BHS (if required). To be completed within reasonable time of decision.
18	Balance works at Truck Lay Bye	No.	4	Water Supply connection
19	Footpath on Service Road	Km.	15.8	At Km. 115.850 to Km. 122.100 and Km.158.800 to Km. 160.450 (BHS)

Annexure-VI(a)

Four Laning of Guna - Biaora Section from Km 332.100 to Km 426.100 of NH-3 (Package-2) in the State of Madhya Pradesh

PUNCH LIST (LIST-A)

MINOR OUTSTANDING WORKS TO BE COMPLETED WITHIN 90 DAYS OF PROVISIONAL CERTIFICATE

S. No.	Description of Item	Unit	Quantity	Remarks
20	Rectification of RE Wall	At identified locations		
21	Extension and Painting of Kerb at Median Openings	No.	39	At all median openings
22	Hand Rail on Major / Minor Bridges	Rm	4	At MJB at Km. 109.911, Km. 110.220, Km. 132.900 and Km. 168.888
23	Provision of MBCB/Kerb in depressed median at all VUP and PUP approaches	No.	4	Shall be completed within 30 days from PCOD
24	Crash Barrier indicators over concrete crash barrier	As per Site Requirement		At all CCB and NJB locations along the Project Highway. (At Start, Middle and End Locations)

Aarvee Associates Architects Engineers & Consultants Pvt.Ltd.

Annexure 8: Completion Certificate

aarvee associates
architects engineers & consultants pvt. ltd.
An ISO 9001:2015 Certified Company

Ref: AA/HW/2040/18-19/5368
Dated: 05th November 2018

To,
The Project Manager,
M/s Jalpa Devi Tollway Ltd.,
Village – Gader, P.O. Guna Cant.,
Tehsil & District - Guna (M.P) – 473 001.

Sub: Four laning of Guna-Biaora section from Km. 332.100 to Km. 426.100 of NH-3(package-2) in the State of Madhya Pradesh to be executed on BOT (Toll) on DBFOT pattern under NHDP Phase-IV – **Reg:** Issuance of Completion Certificate

Ref:
1. Authority's Letter no. NHAI/RO-MP/Guna/Conss./Guna-Biaora/2018/32899, dated 03.11.2018.
2. Authority's Letter no. NHAI/PIU/Guna/Guna-Biaora/COD/2018/16617, dated 31.10.2018.
3. Our Letter no. AA/HW/NHAI/2040/18-19/4983, dated 23.10.2018.
4. Concessionaire Letter no. JalpaDevi/IE/GUNA-BIAORA/BOT/2018-19/1028, dated 10.10.2018.
5. Concessionaire Letter no. JalpaDevi/IE/GUNA-BIAORA/BOT/2018-19/1025, dated 29.09.2018.
6. Concessionaire Letter no. JalpaDevi/IE/GUNA-BIAORA/BOT/2018-19/1012, dated 14.09.2018.
7. Concession Agreement dated 21st September 2015.

Dear Sir,

Pursuant to the provisions of Clause 14.2 of the Concession Agreement and upon concurrence of the Authority for issuance of Completion Certificate for the Project Highway, vide letter no. 32899, we are pleased to issue 'Completion Certificate' for the above Project Highway w.e.f. 15.09.2018.

As undertaken by you, vide letter no. 1028 cited, you will complete the COS works by the Scheduled Project Completion Date as per the COS Orders dated 20.12.2017 & 19.06.2018. In-case of failure to complete the same within the aforesaid timelines, you will be liable to pay damages, as per the provisions of Clause 12.4.2 of Concession Agreement. Further, you shall complete the hindered works expeditiously, as and when the same is cleared.

We wish you all the best in your future assignments.

With best regards,
for Aarvee Associates Architects Engineers & Consultants Pvt. Ltd.

K. V. S. Prasad
Authorised Signatory

Encl: Completion Certificate for the Project Highway

Copy to:
1. The Regional Officer, NHAI, Regional Office, Bhopal.
2. The General Manager-MP, NHAI HQ, Delhi.
3. The Project Director, PIU, NHAI, Guna.
4. The Team Leader, Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., Guna.

Ravula Residency, Srinagar Colony Main Rd., Hyderabad – 500 082, India.
Tel: +91-40-23737633, 48483456; Fax: +91-40-23736277; email: aarvee@aarvee.net; web: www.aarvee.com
CIN: U74200TG2005PTC045491

COMPLETION CERTIFICATE

1. We, Aarvee Associates Architects Engineers & Consultants Pvt. Ltd., acting as Independent Engineer, under and in accordance with the Concession Agreement dated 21st Sep'15 (the **"Agreement"**), for Four-Laning of Guna – Biaora section of NH-3 from Km 332.100 to Km 426.100 in the state of Madhya Pradesh under NHDP Phase IV to be executed on BOT (Toll) mode on DBFOT basis (the **"Project Highway"**) through **M/s. Jalpa Devi Tollways Limited**, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and we are satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof.

2. It is certified that, in terms of the aforesaid Agreement, all works forming part of Four-Laning have been completed, except the works issued under COS and some works which are hindered, and as such the entire Project Highway was placed in commercial operations by 15th day of September 2018.

SIGNED, SEALED AND DELIVERED

For and on behalf of
the INDEPENDENT ENGINEER by:

(Signature) 05/11/18

K V S Prasad
Vice President-Operations
(Highways)
Aarvee Associates Architects
Engineers & Consultants Pvt. Ltd.
8-2-5, Ravula Residency
Srinagar Colony Main Road
Hyderabad

Annexure 9: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Wed, Nov 11, 2020 16:29:07 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: 171200/44/2021/51	Prev Policy No	:
Cover Note No	: ER1700203544	Cover Note Dt	: 07/10/2020
Insured's Code	: 116613802	Issuing Office Code	: 171200
Insured's Name	: Jalpadevi Tollways Ltd. (GSTIN: 23AADCJ5526G1ZT)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL 462016	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007
Tel/Fax/Email	: 0265-2252274/0265-2357445/0265-2356033/

Period of Insurance : FROM 00:00 ON 07/10/2020 TO MIDNIGHT OF 06/10/2021

Collection No & Dt : DC_I_INDCSH 3214001027 - 13/10/2020 GST INVOICE NO :2419569443 UIN :0

Gross Premium : 28,835 GST : 5,190 Stamp Duty : 1 Total : 34,025

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 6,40,75,692

1 Location of the Risk : AS PER LIST ATTACHED
Four Laning of Guna- Biaora section of NH-3 from Km 332.100 to Km 426.100 in the state of Madhya Pradesh under NHDP Phase-IV to be executed in BOT (Toll) Mode on DBFOT Basis
MADHYA PRADESH - 473001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		6,40,75,692

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

Place : -
Date : 12/10/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 2

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

PP-74. JOGIPURA-TI

POLICY SCHEDULE FOR MONEY INSURANCE

Insured's Name	:	M/S JALPA DEVI TOLLWAYS LTD.			
Insured's Details			Issuing Office Details		
Customer ID	:	PO69450874	Office Code	:	BHOPAL DO-1 (450100)
Address	:	PLOT NO. 5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL ,MADHYA PRADESH, 462016	Address	:	C.D.U. - I , BLOCK NO 3, IIND FLOOR, PARYAVAS BHAWAN, ARERA HILLS, BHOPAL,462011
Phone No	:		Phone No	:	07554203271 / 07554203272
E-mail/Fax	:	db@dilipbuildcon.co.in, /	E-mail/Fax	:	nia.450100@newindia.co.in / 07554203274
PAN No	:	AADCJ5526G	S.Tax Regn. No	:	AAACN4165CST178
GSTIN/UIN	:	23AADCJ5526G1ZT / NA	GSTIN	:	23AAACN4165C1ZZ
	:		SAC	:	997139 (Other non-life insurance services excl RI)

Policy Details					
Policy Number	:	45010048200300000001	Business Source Code		
Period of Insurance	:	From: 18/05/2020 12:00:01 AM To: 17/05/2021 11:59:59 PM	Dev.Off. level/Broker/Corp. Agent/Web Aggregator	:	GLOBAL INSURANCE BROKERS PRIVATE. LTD. - (1D5140053) 112700_AON GLOBAL INSURANCE (SI00062348)
Date of Proposal	:	18-May-20	Agent/Bancassurance/ Specified Person	:	
Prev. Policy no.	:	45010048190300000003	Phone No	:	02261485661, 9819676655 / NA
Client Type	:	Non-Corporate	E-mail/Fax	:	girish.prabhu@globalinsurance.co.in, / /

Premium(₹)	GST(₹)	Total(₹)	Total (₹ in words)	Receipt No. & Date
27500	4950	32450	RUPEES THIRTY-TWO THOUSAND FOUR HUNDRED FIFTY ONLY	45010081200000000567 - 18/05/20

Location Details	:	JOGIPURA TOLL PLAZA VILLAGE JOGIPURA POST KOTRA TEHSIL CHACHODA DIST.GUNA MADHYA PRADESH
Money in safe (during and after business hours)	:	7000000
Money in Till	:	7000000

SECTION - 1

Sl. No.	Sub Sections	Single Carrying Limits for - Cash/Coin/ Travelers Cheques/ Bank drafts	Single Carrying Limits for - Foreign Currency	Single Carrying Limits for - Any other (Specify)
1.	Section 1 A - Money for the payment of wages, salaries and other earning or for petty cash in direct transit from the bank to the insureds premises from the time the cash is received at the bank by the insured or the authorized employee/ s of the insured until delivered at the premises or other place of disbursement and whilst there until paid out provided that out of business hours such cash shall be secured in locked safe or locked strong room on the premises. Cheques drawn by the insured to provide for such cash are covered in transit from the premises to the Bank.	1500000	0	0
2.	Section 1 B - Money (other than described in 1A above) in the personal custody of the insured or the authorized employee/s of the insured whilst in direct transit between the premises and the bank or post office and vice versa	1500000	0	0

Signature valid
Digitally signed by [illegible]
Validation
Date [illegible] 05 18

Policy No. : 45010048200300000001 Document generated by 37225 at 18/05/2020 15:16:41 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.
For redressal of your grievance, if any,you may approach any one of the following offices- 1. Policy issuing office 2. Regional office 3. Head office.In case, you are not satisfied with our own grievance redressal mechanism; you may also approach Insurance Ombudsman. For details of our office addresses and addresses of office of Insurance Ombudsman, please visit our website http://newindia.co.in.

Page 1 of 3

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001993

जारीकर्ता कार्यालय/*Issuing Office*
कार्यालय कोड /*Office Code: 321300*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /*Business Source: 910355*
बिक्रय चैनल कोड/*Sales Channel Code: 91035500000001*
नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number: 1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL JALPA DEVI TOLLWAYS LTD
पता/ Address: PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD , BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881645
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AADCJ5526G

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 75,01,680.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 6,75,151.00		
SGST/UTGST	₹ 6,75,151.00		
IGST	₹ 0.00		
केरला बाढ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	880020032708 7068 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 88,51,982.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Eighty Eight Lakh Fifty One Thousand Nine Hundred Eighty Two Only.)
Location: Guna-Biaora section of NH-3, Madhya Pradesh Guna, Guna, 473001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	6,98,50,00,000.00	1,00,000.00
2	Roads	Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	51,50,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

Printed on 27/03/2020 by ID: 75159

Page no: 1

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 19, 2020

JALPA DEVI TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203391761300000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203391761300000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203391761300000 **Employees Compensation Insurance**

Insured Name	JALPA DEVI TOLLWAYS LTD (PAN Number:AADCJ5526G)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	19/05/2020

Period of Insurance	From Date & Time	18/05/2020 00:01 AM	To Date & Time	17/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203391761300000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 10: Change of Scope

Four-Laning of Guna-Biaora Section of the NH-3 from Km 332.100 to 426.100 in the State of Madhya Pradesh under NHDP Phase-IV on BOT (Toll) on DBFOT pattern.

RA-01 Bill

(COS – Order issued by PD, NHAI vide letter No. NHAI/PIU/GUNA/NH-3/JDTL/2017/14856, dated 20-12-2017)

RA-01 Bill

Total amount based on works executed as on 25.12.2019

S.No	Description	Value of COS ORDER (Rs)	Value of COS Amount Rounded Rs.	Amount Certified		
				Cumulative (Rs)	Upto Previous bill (Rs)	During this bill (Rs)
1...10	Value of Work Done under Change Of Scope	17,048,543	17,048,543			
1	CONSTRUCTION OF LINED DRAIN FROM 124+840 TO KM 125+330 LHS & KM 124+840 TO Km 125+510 ON RHS AND EXTESNTION OF SLIP ROAD FROM Km 125+330 TO KM 125+510 ON RHS OF THE PROJECT HIGHWAY		As per work done	1,691,994	-	1,691,994
			As per CA	-	-	-
			Net COS	1,691,994	-	1,691,994
2	Gross Value			**1,691,994**	-	**1,691,994**
3	Recovery					
	Less:20% of gross amount recovered as paid in advance(-)			338,398.84	-	338,399
4	Net Gross Amount (2-3)			1,353,595	-	1,353,595
5	Deductions					
a	S.D.Retentaion Money 5% on Sr.No. 2			-	-	-
b	Income Tax @ 2% on S.No .4			27,072	-	27,072
c	Labour Cess @ 1% on S.No .2			16,920	-	16,920
d	GST @2% (CGST 1% + SGST 1%) on S.No.2			33,840	-	33,840
6	Total Deductions (5 a+5 b+5 c)			77,832	-	77,832
7	Net Amount of Bill (4 – 6)			**1,275,764**	-	**1,275,764**
8	Add for releasing of SD amount recovered			-	-	-
9	Net Amount (7 + 8)			**1,275,764**	-	**1,275,763.61**

Four lanning of Guna to Biaora from Km 332+100 to Km 426+100 Section of NH-3 in the state of Madhya Pradesh.

Name of Work: Construction of Foot over Bridge at Km 159.300 (Penchi Village)

ABSTRACT OF FOB AT Km 159+300- COS No. 12

1st & Final Bill

Period: 30.08.2020

S No	Item Ref. No.	Description	Unit	MPPWD SOR w.e.f 06.06.2016	As per CA		As Per Revision (COS)		Executed Upto Date (Actual)		Executed Upto previous		Executed This Bill		Remarks	
					Quantity	Amount	Quantity	Amount	Quantity	Amount (Rs.)	Quantity	Amount (Rs.)	Quantity	Amount (Rs.)		
1	12.3.1-A-i	Earth work in excavation of foundation of structures as per drawing and technical specification, including setting out, construction of shoring and bracing, removal of stumps and other deleterious matter, dressing of sides and bottom and backfilling with approved material. as per relevant clauses of section 300 & 2300 in	Cum	52.00			297.400	15,464.80	259.950	13,517.40	-	-	259.950	13,517.40	Pg. No.	of MB No.
2	3.10	Earth filling in Ramp	Cum	144.00			35.100	5,054.40	160.044	23,046.31	-	-	160.044	23,046.31	Pg. No.	of MB No.
3	12.8-A	PCC-M15 leveling course-Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.	Cum	4,572.00			27.100	1,23,901.20	32.505	1,48,613.96	-	-	32.505	1,48,613.96	Pg. No.	of MB No.
4	12.8-G	M30 for Foundation-Plain/Reinforced Cement Concrete in Open Foundation complete as per Drawing and Technical Specifications.	Cum	5,337.00			90.200	4,81,397.40	67.401	3,59,718.83	-	-	67.401	3,59,718.83	Pg. No.	of MB No.
5	13.6-G	M30 for Sub-Structure- Plain/Reinforced cement concrete in sub-structure complete as per drawing and Technical Specifications	Cum	5,999.00			92.600	5,55,507.40	47.300	2,83,752.70	-	-	47.300	2,83,752.70	Pg. No.	of MB No.
6	13.6-C	M30 For Super structure- Furnishing and Placing Reinforced/ Prestressed cement concrete in super-structure as per drawing and Technical Specification	Cum	6,458.00			135.700	8,76,350.60	196.469	12,68,798.03	-	-	196.469	12,68,798.03	Pg. No.	of MB No.
7	12.31	Supplying, fitting and placing un- coated HYSD Fe-500 bar reinforcement in foundation complete as per drawing and technical specifications	MT	49,081.00			7.300	3,58,291.30	12.927	6,34,477.76	-	-	12.927	6,34,477.76	Pg. No.	of MB No.
8	13.7	Supplying, fitting and placing un- coated HYSD Fe-500 bar reinforcement in foundation complete as per drawing and technical specifications	MT	48,936.00			8.400	4,11,062.40	-	-		-	0.000	-		
9	14.2	Supplying, fitting and placing HYSD Fe-500 bar reinforcement in super-structure complete as per drawing and technical specifications	MT	50,028.00			12.300	6,15,344.40	22.623	11,31,774.11	-	-	22.623	11,31,774.11	Pg. No.	of MB No.
10	18.19	Elestomeric bearings	cu.cm	0.78			17,440.000	13,603.20	17,440.000	13,603.20	-	-	17440.000	13,603.20	Pg. No.	of MB No.
11	M-Rate	GI Sheet covering for Roof	Sqm	500.00			764.900	3,82,450.00	763.250	3,81,625.00	-	-	763.250	3,81,625.00	Pg. No.	of MB No.
12	M-Rate	Flooring Tiles	Sqm	350.00			756.500	2,64,775.00	733.555	2,56,744.25	-	-	733.555	2,56,744.25	Pg. No.	of MB No.
13	8.25	Metal Beam Crash Barrier	Rm	3,406.00			88.000	2,99,728.00	-	-	-	-	0.000	-	Pg. No.	of MB No.
14	14.25	Structural Steel	kg	65.59			42,474.400	27,85,980.42	52,390.070	34,36,368.95	-	-	52390.070	34,36,368.95	Pg. No.	of MB No.
		Sub total						71,88,911		79,52,040		-		79,52,040		
		Grand Total (I)-As per Revision						71,88,911	-	79,52,040	-	-	-	79,52,040		
			% age of Work Done (Revision)													
			Amount As per CA - Order					-		-		-		-		
			Amount As per COS - Order					71,88,911		79,52,040		-		79,52,040	Amount C/O to Pg No. MB. No.	Of AOC

Four-Laning of Guna-Biaora Section of the NH-3 from Km 332.100 to 426.100 in the State of Madhya Pradesh under NHDP Phase-IV on BOT (Toll) on DBFOT pattern.

RA-01 Bill

(COS – Order issued by PD, NHAI vide letter No. NHAI/PIU/GUNA/NH-3/JDTL/2017/14856, dated 20-12-2017)

Total amount based on works executed as on 25.12.2019 **COS-09a Km 112+050 (PUP)**

S.No	Description	Value of COS ORDER (Rs)	Value of COS Amount Rounded Rs.	Amount Certified		
				Cumulative (Rs)	Upto Previous bill (Rs)	During this bill (Rs)
1...10	**Value of Work Done under Change Of Scope**	42,636,258	42,640,000			
1	Provision of service / slip road and RE wall on the approaches at PUP locations:**(PUP at km112.050)**		As per work done	7,850,425	-	7,850,425
			As per CA	-	-	-
			Net COS	7,850,425	-	7,850,425
2	**Gross Value**			**7,850,425**	**-**	**7,850,425**
3	**Recovery**					
	Less:20% of gross amount recovered as paid in advance(-)			**1,570,085**	-	**1,570,085**
4	**Net Gross Amount (2-3)**			**6,280,340**	-	**6,280,340**
5	**Deductions**					
a	S.D.Retentaion Money 5% on Sr.No. 2			-	-	-
b	Income Tax @ 2% on S.No .4			125,607	-	125,607
c	Labour Cess @ 1% on S.No .2			78,504	-	78,504
d	GST @2% (CGST 1% + SGST 1%) on S.No.2			157,009	-	157,009
6	**Total Deductions (5 a+5 b+5 c)**			**361,120**	-	**361,120**
7	**Net Amount of Bill (4 – 6)**			**5,919,221**	**-**	**5,919,221**
8	Add for releasing of SD amount recovered			-	-	-
9	Net Amount (7 + 8)			**5,919,221**	**-**	**5,919,221**

Authorised Signatory
Jalpa Devi Tollway Pvt Ltd., Bhopal

Team Leader

Aarvee Associates Architects Engineers & Consultants Pvt. Ltd.

SHREM FINANCIAL PRIVATE LIMITED

Development of Ashoknagar- Vidisha Major District Road in the State of Madhya Pradesh on BOT (Toll+ Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

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Development of Ashoknagar- Vidisha Major District Road in the State of Madhya Pradesh on BOT (Toll+ Annuity) Basis

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CHAPTER 1. INTRODUCTION

1.1 General:

DBL ASHOKNAGAR-VIDISHA TOLLWAYS LIMITED. (herein after referred to as the "Concessionaire") had augmented the existing road into two lane undivided carriageway from Bypass junction of Ashoknagar to Bangla Chauraha (35.680 Kms. length) section of Major District Road (here in after called "Project Highway") in the state of Madhya Pradesh on design, build, finance, operate and transfer (DBFOT), Toll + Annuity basis in accordance with the terms and conditions set forth in the Concession Agreement executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on March 22, 2013.

Project Road starts from Bypass Junction of Ashoknagar (Km. 0+100) in Ashoknagar and terminates at Bangla Chauraha (Km. 35+682). Total length of the Project Highway is 35.682 Kms. The Project road passes through plain terrain predominantly agricultural land except some Built-up sections viz. Athaikheda, Kharila and Bangla Chouraha. Project Location map is given at **Figure 1.1**.

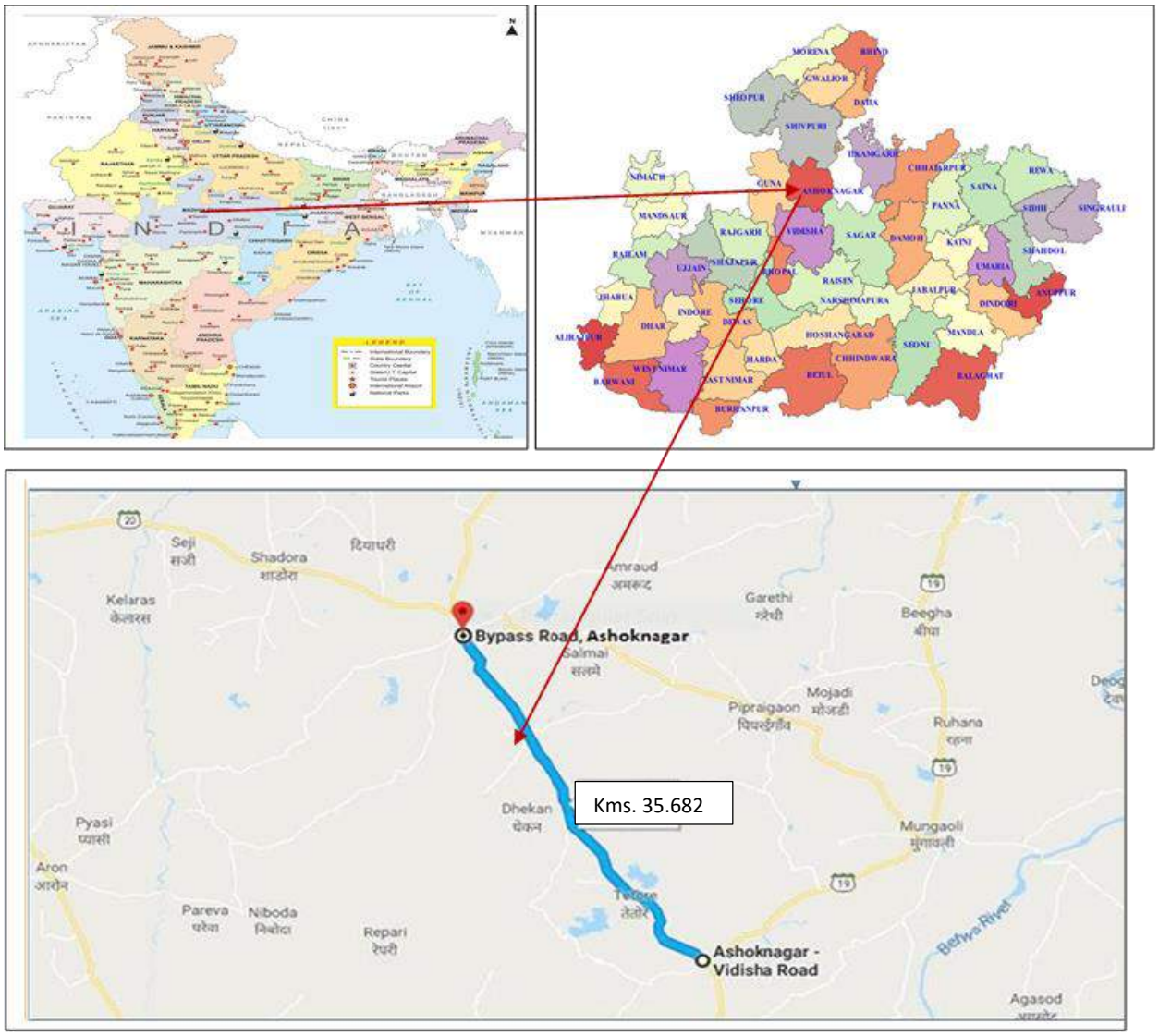

Figure 1.1: Project Location Map

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL ASHOKNAGAR-VIDISHA TOLLWAYS LIMITED vide agreement dated 26th March 2018.

SHREM FINANCIAL PVT. LTD. (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 Project Data

The details of the Project are listed in the following table.

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Construction, Operation and maintenance of road from Ashoknagar to Bangla chauraha on DBFOT (Design, Build, Finance, Operate and Transfer) on Toll Plus Annuity Basis.
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Ashoknagar-Vidisha Tollways Limited
5	Name of the EPC Contractor	Dilip Build con Limited
6	Date of LOA	08.02.2013
7	Date of Agreement	22.03.2013
8	Design Length as per Schedule B	35.682 Kms.
9	Length omitted under negative Change in Scope	0.107 Kms.
10	Actual Length Constructed	35.575 Kms.
11	Project Lane Configuration	2 Lane
12	EPC Cost	Rs. 77.22 Cr.
13	Nature of contract	BOT (Toll + Annuity)
14	Toll collected by	Concessionaire
15	Concession Period	15 years from the Appointed date
16	Appointed date	09.11.2013
17	Concession end date	08.11.2028
18	Construction Period	730 days from the Appointed date.
19	Schedule Completion Date	08.11.2015
20	Date of issuance of Provisional Certificate (Commercial Operation Date)	26.07.2014
21	Date of issuance of Completion Certificate	22.10.2014
22	Annuity Amount (every six months)	Rs 5.04 Cr
23	Total Number of Annuities payable	26 Nos.
24	First Annuity Payment Date	26.01.2015
25	Total Number of Annuity Paid	13 Nos.

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of CA including Change of scope are listed in the following **Table 2.1**.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length	35.682 Kms.	-0.107 Kms.	35.575 Kms.
2	Total Length of 2Lane (Flexible)	33.682 Kms.	+0.093 Kms.	33.775 Kms.
3	Total Length of 4Lane (Flexible)	2.00 Kms.	-0.200 Kms.	1.800 Kms.
4	Toll Plaza	1 No.	-	1 No.
5	Bus Shelters	16 Nos.	-	16 Nos.
6	Truck Lay Bays (Both sides)	2 Nos.	-	2 Nos.
7	Major Junction	2 Nos.	-	2 Nos.
8	Minor Junctions	9 Nos.	-	9 Nos.
9	ROB	Nil	-	Nil
10	Major Bridges	1 No.	-	1 No.
11	Minor Bridges	9 Nos.	+1 Nos.	10 Nos.
12	Pipe Culverts	14 Nos.	-2 &+1 Nos.	15* Nos.
13	Slab/Box Culverts	19 Nos.	-1 & +2 Nos.	19* Nos.

*As per site requirement two additional pipe culverts are constructed and one Box Culvert is not constructed as per site condition.

2.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the following Typical Cross Section figures shown below during the construction and schedule of TCS is given in Table 2.2 below.

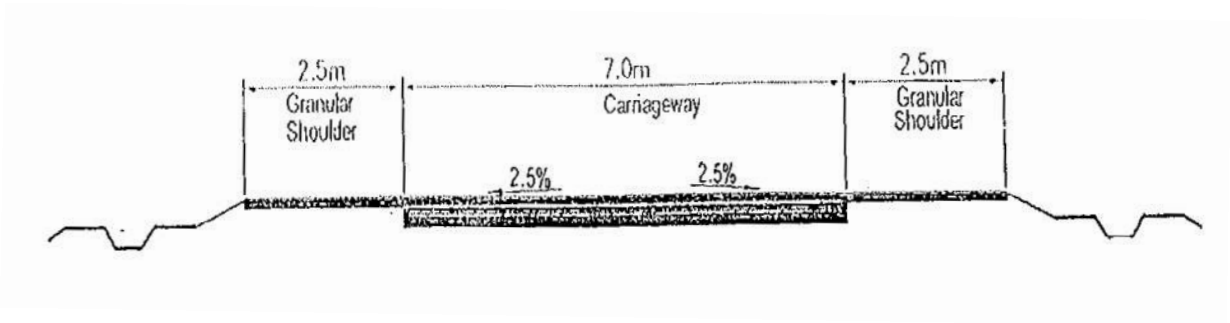

Figure 2.1: TCS 2.1 2-Lane Carriageway with Hard Shoulders without service road (Open Country-Plain/rolling terrain)

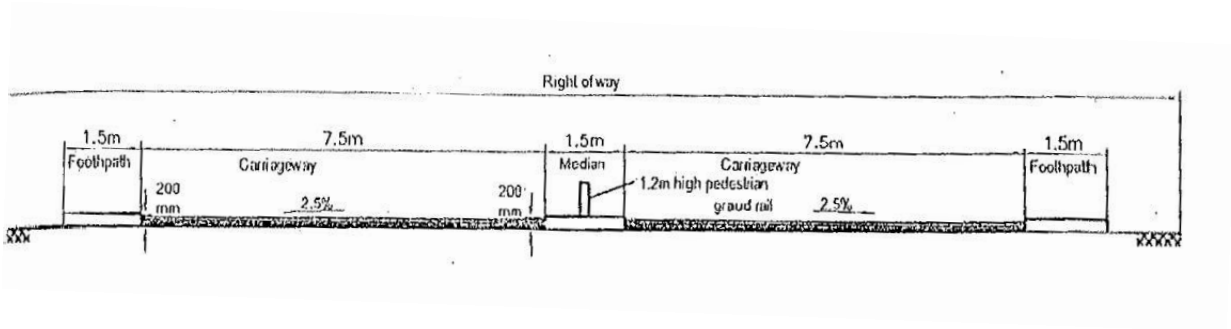

Figure 2.2: TCS 2.2 4-Lane divided Carriageway with Footpath (Built-up area)

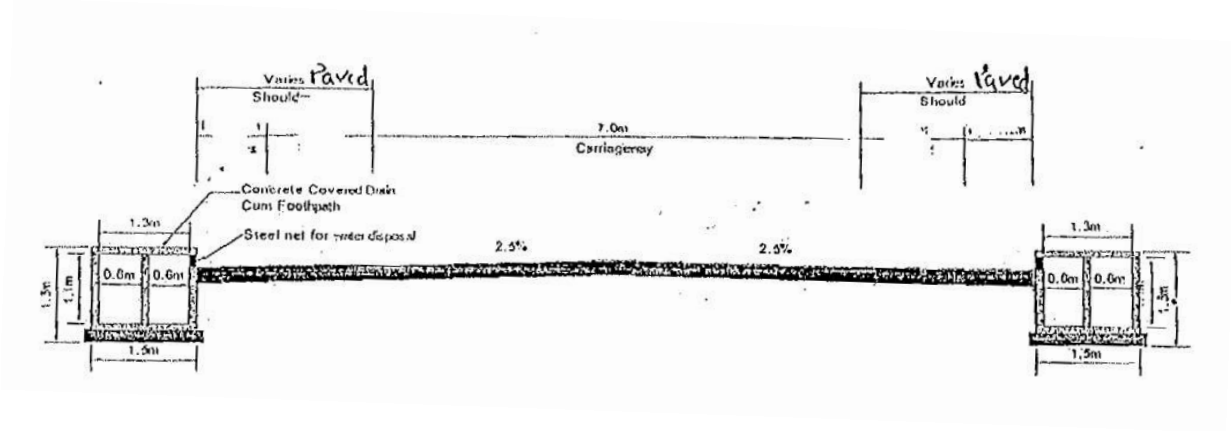

Figure 2.3: TCS 2.3 2-Lane Carriageway with Paved Shoulder (Built-up area)

Table 2.2: TCS Schedule

S. No	From (Km.)	To (Km.)	Lengths(Km.)	Type of TCS
1	0+000	0+200	0.200	TCS 2.3 of Schedule D of CA
2	0+200	2+000	1.800	TCS 2.2 of Schedule D of CA
3	2+000	16+160	14.160	TCS 2.1 of Schedule D of CA
4	16+160	17+000	0.840	TCS 2.3 of Schedule D of CA
5	17+000	17+680	0.680	TCS 2.1 of Schedule D of CA
6	17+680	18+231	0.551	TCS 2.3 of Schedule D of CA
7	18+231	19+800	1.569	TCS 2.1 of Schedule D of CA
8	19.800	20+090	0.290	TCS 2.3 of Schedule D of CA
9	20+090	35+050	14.960	TCS 2.1 of Schedule D of CA
10	35+050	35+575	0.525	TCS 2.3 of Schedule D of CA

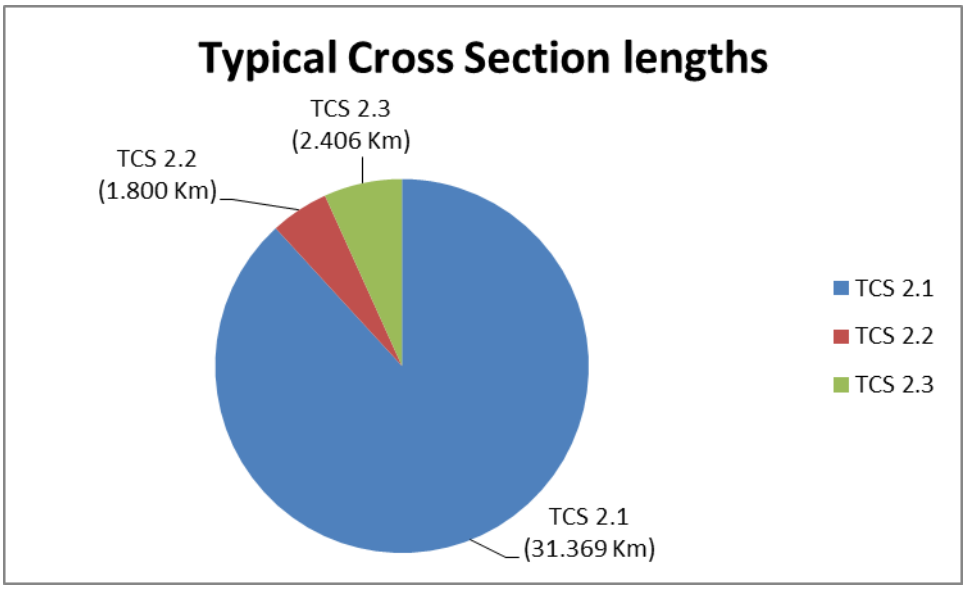

Figure 2.4: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage:

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriageway on both flanks as specified in Schedule B of the CA in strict adherence to the Standard Specifications set forth in Schedule D of the CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas and earthen drains in open & rural areas.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.5 Bypass/Realignment

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of the CA.

2.6 Intersections

As per provisions of Schedule B of the CA, 2 Major Junctions and 9 Minor Junctions are provided. Details are given below.

Table 2.3: List of Junctions

S. No	Chainage (Km.)	Side
Major Intersection		
1	0+000	LHS
2	35+682	LHS
Minor Intersection		
1	0+100	RHS
2	1+600	LHS

S. No	Chainage (Km.)	Side
3	3+400	LHS
4	10+200	RHS
5	11+000	RHS
6	16+800	RHS
7	17+400	RHS
8	18+500	RHS
9	21+500	RHS

2.7 Grade Separated Structures and underpasses:

There are no Grade separated structures in the Project, as per provisions of Schedule B of the CA.

2.8 Road Under Bridge:

There are no RUBs in the Project, as per provisions of Schedule B of the CA.

2.9 Summary of Carriageway and pavement Details:

Table 2.4: Summary of Carriageway and pavement Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	2 Lane with Earthen shoulder	31.369	---	Fig 2.1 of Schedule D of the CA
2	2 Lane with Paved shoulder	2.406	---	Fig 2.3 of Schedule D of the CA.
3	4 Lane	1.800	---	Fig 2.2 of Schedule D of the CA
4	Total Length of the Project	35.575	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	35.575	---	
9	Total Length of the Project	35.575	---	

2.10 Summary of Structures and Culverts:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	---	---	---	---
2	Widening	---	3	3	2
3	Reconstruction	1	6	4	17
4	New	---	---	7	---
5	Improvement	---	---	---	---
6	**Total**	**1**	**9**	**14**	**19**

2.11 Toll Plazas:

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Km. 7+300. Salient features of Toll Plaza are provided below.

- Each side comprises of, one normal lane and one extra wide lane.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of the CA having facilities like lighting, water supply and firefighting Arrangements.
- Close circuit cameras are installed and monitored in administrative building.

2.12 Bus shelters and truck lay byes:

As per provisions of Schedule C of the CA bus shelters are provided at 16 locations and truck lay bays at 2 locations. Details of Chainage location are listed in the following Table 2.6.

Table 2.6: List of Bus shelters/Truck Lay bays

S. No.	Chainage (Km.)	Side*	Description
1	0+100	RHS	Bus shelter
2	0+120	LHS	Bus shelter
3	0+550	RHS	Bus shelter
4	0+570	LHS	Bus shelter
5	3+400	LHS	Bus shelter
6	3+600	RHS	Bus shelter
7	10+200	LHS	Bus shelter
8	10+200	RHS	Bus shelter
9	16+500	RHS	Bus shelter
10	16+520	RHS	Bus shelter
11	17+750	BHS	Truck Lay bay
12	18+500	LHS	Bus shelter
13	18+500	RHS	Bus shelter
14	21+500	LHS	Bus shelter
15	21+500	RHS	Bus shelter
16	35+100	BHS	Truck Lay bay
17	35+250	RHS	Bus shelter
18	35+250	LHS	Bus shelter

*Note: LHS-Left Hand Side, RHS-Right Hand Side

2.13 Other Project Facilities Provided as per Schedule C

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained

- Tree plantation: Tree plantation is provided on both sides, for the full length of project corridor and being maintained.
- Medical Aid Post: Provided at toll plaza location and operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza location and is functional.

Km. 0+000

Km. 0+200

Km. 1+800

Km. 2+000

Km. 2+000

Km. 4+600

Km. 6+200

Km. 7+300

Km. 8+600

Km. 10+300

Figure 2.5: Representative Photos of Project Facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

3.2 Road Inventory

Inventory of the project road was carried out physically, and the details are summarized in **Table 3.1**. Few representative photographs are presented in **Figure 3.1**.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain Terrain
2	Land Use	Built Up 12 %, Agriculture 45% and Barren 43%
3	Two lane length	33.775 Kms.
4	Four lane length	1.800 kms.
5	Earthen shoulder	2 m to 2.5 m Width on site
6	Junctions	11 Nos.
7	Toll Plaza	Km. 7+300
8	Sign boards	Sign boards are provided as per requirement
9	Road Markings	Lane markings are provided as per requirement
10	Bus Bays /shelters	16 Nos.
11	Truck Lay bye	02 Nos.
12	Street Lighting	Highway lighting provided as per requirement
13	Avenue plantation	Provided

3.3 Pavement Condition

Pavement Condition survey was carried out on the Project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condi-tion Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future Pavement Conditions and assessing long term needs;

Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general Pavement Condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The Pavement Condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement Condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1.** The summary of Pavement Condition is given below.

Table 3.3: Pavement condition summary

From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)	Condition
0+000	35+575	35.575	Good

Km. 8+600

Km. 10+300

Km. 16+000 BC

Km. 16+100

Km. 23+050

Km. 23+700

Km. 24+100

Km. 25+300

Km. 35+682

Figure 3.1: Representative photos of Pavement Condition

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the Structures

Inspection of existing structures on the Project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The list of structures as per the site is enclosed below

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	1
2	Minor Bridge	10
3	Pipe culverts	15
4	Slab/Box Culverts	19

Bridges with RCC T Beam and Slab and RCC solid slab superstructure are supported on wall type piers and abutments. Single / multi cell box cell structure has been provided at some bridge locations. The condition of the structures is generally good. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types' viz. pipe culverts and RCC slab/box culverts. The condition of most of the Culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

Major bridge at Km 9+900 has span arrangement of 6x14.9m with a total length of 89.4m. It has RCC solid slab superstructure supported on wall type piers and abutments. Other features include elastomeric bearings, RCC crash barrier and bituminous wearing coat.

Table 4.2: List of Major Bridge

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	9+900	6 x 14.9	89.40

The condition of the superstructure and substructure of major bridge is good.

Km. 9+900

Figure 4.1: Representative photos of Major Bridges

4.4 Details of Minor Bridges

There are 10Nos. minor bridges on the project road. These bridges have box cell type structure RCC T Beam and slab and RCC solid slab type of superstructure supported on wall type piers and abutments with open foundations.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span Arrangement	Total Length of Bridge (m)	Description
1	3+200 (3+150)	2 x 14.7	29.4	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Elastomeric Bearings and buried type expansion joints.
2	10+950	6 x 8.2	49.2	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
3	16+050 (15+900)	1 x 7.1	8.2	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
4	16+750	3 x 5.4	16.2	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
5	18+300	2 x 6.8	14.9	It has existing RCC solid slab superstructure supported on CR masonry wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
6	20+700	2 x 5.0	11.0	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	23+050	2 x 5.0	11.0	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	28+800 (28+775)	1 x 7.1	8.2	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	30+900 (30+960)	2 x 10.0	20.0	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
10	5+021	1 x 6.7	6.70	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

Km. 3+200

Km. 10+950

Km. 23+050

Km. 20+700

Figure 4.2: Representative photos of Minor Bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.6 Details of Slab/Box Culverts

There are 19 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Type	Span (m)
1	4+350 (4+250)	Slab	1 x 5.7
2	14+600	Box	1 x 3.9
3	22+150	Box	1 x 4
4	23+700	Box	1 x 6.2
5	24+100	Box	1 x 3
6	24+500 (24+760)	Box	1 x 4

S. No.	Chainage (Km.)	Type	Span (m)
7	25+350	Box	1 x 3
8	25+900	Box	1 x 3
9	26+750	Box	1 x 4.9
10	27+150	Box	1 x 6
11	27+900 (extra)	Box	1 x 2.1
12	28+100	Slab	1 x 2.6
13	28+400 (28+370)	Box	1 x 4.1
14	29+200	Box	1 x 5
15	29+400	Box	1 x 3.8
16	30+325	Box	1 x 3
17	31+650	Box	1 x 6.2
18	32+050 (32+100)	Box	1 x 3
19	32+300	Box	1 x 4

The general condition of above slab/box culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 22+150

Km. 23+700

Km. 24+500

Km. 25+350

Km. 25+900

Figure 4.3: Representative photos of Box/Slab Culverts

4.7 Details of the Pipe Culverts

There are 15 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m)
1	0+100	Pipe	1 x 1.2
2	1+200	Pipe	1 x 1.2
3	2+000 (1+950)	Pipe	2 x 1
4	3+850	Pipe	1 x 1.2
5	6+605 (extra)	Pipe	1 x 1
6	7+900	Pipe	1 x 1.2
7	9+500 (9+375)	Pipe	1 x 1
8	14+250	Pipe	1 x 1.2
9	15.320	Pipe	1 x 1.2
10	15+350 (15+205)	Pipe	1 x 1.2
11	16+650	Pipe	1 x 1.2
12	17+150 (17+070)	Pipe	1 x 1.2
13	18+650	Pipe	1 x 1.2
14	27+360	Pipe	1 x 1.2
15	33+050	Pipe	1 x 1.2

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 18+650

Figure 4.4: Representative photos of Pipe Culverts

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report, providing insights on design life of pavement, crust thickness, history of overlays over the existing pavement etc., Based on pavement condition and CA provisions recommendation for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

5.3 Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	10%
2	Design Life (Years)	15 years
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40 mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

5.4 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”.

Pavement design validation as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. summary is given below.

Table 5.2: Flexible Pavement Design Traffic Validation

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	445	183	32	94	159	468	0.45	0.45	3	Actual
2017	651	165	30	59	100	354	0.34	0.79	4	Actual
2018	842	207	28	48	127	411	0.39	1.18	5	Actual
2019	658	207	30	34	106	378	0.36	1.54	6	Actual
2020	677	212	28	38	92	371	0.36	1.90	7	Actual
2021	711	222	30	40	97	389	0.37	2.27	8	Projected
2022	747	234	31	42	102	409	0.39	2.66	9	Projected
2023	784	245	33	44	107	429	0.41	3.07	10	Projected
2024	823	257	34	47	112	451	0.43	3.51	11	Projected
2025	864	270	36	49	118	473	0.45	3.96	12	Projected
2026	908	284	38	51	124	497	0.48	4.44	13	Projected
2027	953	298	40	54	130	522	0.50	4.94	14	Projected
2028	1001	313	42	57	137	548	0.52	5.46	15	Projected

Based on the above actual traffic, estimated MSA at 15 years is 5.46. Traffic considered in pavement design(10MSA) is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

5.5 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 10 MSA for a design life of 15 years after construction (up to 2028), whereas the actual traffic at pavement design stage is 2.08 MSA for 15 years. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the 8 years of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – next major maintenance proposed in the year 2021.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has a multi-sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP-88	Manual of Road Safety

6.2 Existing Road Safety Audit

During the site visit, it is observed that all safety items are provided as shown in the following Table 6.2.

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good
		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places, reflectors were missing on the sign boards and few sig boards were also damaged.
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

Km. 2+000

Km. 4+600

Km. 6+200

Km. 7+000

Km. 8+600

Km. 8+600

Km. 10+200

Km. 16+100

Km. 16+100

Km. 17+100

Km. 18+400

Km. 18+400

Km. 18+500

Km. 25+300

Km. 25+900

Km. 26+200

Km. 26+300

Km. 29+400

Figure 6.1: Representative photos during road safety audit

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plazas on the project road at Km. 7+300. Each side comprises of 1 Normal Lanes, 1 extra wide lane. Only one lane in each direction is operational and the extra wide lane is used as bike lane. The lane width in normal lanes was 3.20m. The width of islands provided is 1.8m. The single canopy is provided to cover the toll lanes. Toll plaza building is single floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of TMS Lane Assets

S. No.	Description	No
1	TLC (Toll lane Controller)	4
2	Monitor	4
3	Printer	4
4	Keyboard	4
5	CCTV Booth	4
6	Intercom-S	4
7	IC Camera	4
8	LPIC	4
9	Barrier	4
10	UFD	4
11	Traffic Light	4
12	OHLS	4
13	AVC Laser	4
14	RFID Reader	4

7.3 Control Room Equipment's

A server is provided in the control room. Along with the server, three workstations are provided to manage the Audit and other purpose.

Table 7.2: Equipment provided at Control Room

S. No.	Description	No
1	Data Server	1
2	Keyboard	1
3	Monitor	1
4	Manager System	1
5	Keyboard	1
6	Monitor	1

S. No.	Description	No
7	Audit System	1
8	Keyboard	1
9	Monitor	1
10	Scanner	1
11	Printer	1
12	Biometric Machine	1
13	Intercome-M	2
14	Wifi-Router Tenda	1
15	NVR	1
16	Network Rack	1
17	POE Switch	1
18	HHM(Hand Held Machine)	2
19	CCTV	1
20	PTZ-LHS	1
21	PTZ-RHS	1
22	F router	1
23	Router	1
24	DVR	1
25	DVR Monitor	1
26	NVR Monitor	1

7.4 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.3: List of Vehicles

S. No.	Vehicle Type	No.
1	Patrol Vehicle	1
2	Ambulance	1
3	Water Tanker	1

Figure 7.1: Representative photos of Toll Plaza at Km. 7+300

CHAPTER 8. TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Annual Average Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details as per schedule N of CA

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2016	162326	66776	11566	34390	58018	333076
2017	237500	60349	10892	21418	36470	366629
2018	307362	75669	10344	17488	46451	457314
2019	240277	75663	10860	12555	38769	378124
2020	247856	77528	10318	14017	33841	383560
AACGR* (%)						**4.7%**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8.2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	180593	2471	77171	10280	13883	33777	318175
Toll Revenue collection in Rs.	3611860	197675	3858550	1055310	1706710	8296730	18726835

The figures shown in Table 8.1 are Real time traffic data on project road for the past five years and the growth rate is calculated to be 4.7%. It is pertinent to note that the figures given in Table 8.1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (Table 8.2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in **Table 8-3**.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	502	211	28	38	93	370	502	317	84	114	416	932	Actual
2021	527	222	30	40	97	389	527	333	89	120	437	979	Projected
2022	553	233	31	42	102	408	553	350	93	126	459	1028	Projected
2023	581	245	33	44	107	429	581	367	98	132	482	1079	Projected
2024	610	257	34	46	112	450	610	385	103	139	506	1133	Projected
2025	640	270	36	49	118	472	640	405	108	146	531	1190	Projected
2026	672	283	38	51	124	496	672	425	113	153	558	1249	Projected
2027	706	297	40	54	130	521	706	446	119	161	586	1312	Projected
2028	741	312	42	56	137	547	741	469	125	169	615	1377	Projected
2029	778	328	44	59	144	574	778	492	131	177	646	1446	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in **Table 8.4**.

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1
Location	Km. 7+300
4 lane length in km	
2 lane length in km	35.682
Agreement Date	22-03-2013
Appointed Date	09-11-2013
Concession period	15 years
Commercial operation date	26-Jul-14
Concession End Date	08-Nov-28
Traffic study year	2020

Particular	Toll plaza 1
Vehicle Type	**AADT**
Car/Jeep/Van	502
2-axle Bus	211
LCV/LGV	28
2A-Truck	38
MAV (2A-6A)	93
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP (Km. 7+300)	Remarks
2019-20	187.268	Actual
2020-21	201.005	Projected
2021-22	220.350	Projected
2022-23	236.803	Projected
2023-24	270.017	Projected
2024-25	289.353	Projected
2025-26	309.184	Projected
2026-27	335.783	Projected
2027-28	359.510	Projected
2028-29	237.665	222 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3. Carrying out preventive and periodic maintenance of the Project road;

4 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6 Functioning of the lighting system;
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Lay byes
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefor;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

9.6 Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard

pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.
The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

9.7 Routine Maintenance:

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.8 Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S. No.	Major Maintenance	Schedule	Status
1	1st Periodic Maintenance	2021	Planned to execute
2	2nd Periodic Maintenance	2028	Planned to execute

9.9 Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides, which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per Programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.10 Review of Test Reports:

9.10.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of July 2020. As per Schedule K, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

9.10.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement. The BBD Test is to be carried yearly.

Concessionaire has conducted the test in Feb 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.10.3. O&M Forecast:

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2021	0.137	0.210	5.09	0.40	5.84
2022	0.141	0.217		0.41	0.77
2023	0.145	0.223		0.42	0.79
2024	0.149	0.230		0.44	0.82
2025	0.154	0.237		0.45	0.84
2026	0.158	0.244		0.46	0.87
2027	0.163	0.251		0.48	0.89
2028	0.168	0.259	-	0.49	0.92
2029	0.105	0.162	6.12	0.31	6.69
Total	**1.32**	**2.03**	**11.21**	**3.86**	**18.42**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D.
- operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA).
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental.

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

Provide performance security to the Authority

- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE 7**.

10.8 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8**

10.9 Commercial Operation Date (COD) (clause 15.1)

COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer. With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the MPRDCL are provided in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project Highway
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents

- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project Highway.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the Contract Agreement.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K (the "Maintenance Requirements").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty) days prior to the Scheduled Two Lanning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "Maintenance Manual") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
0.5% (zero decimal five percent) of the Average Daily Fee, and

0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 5.04 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1st Annuity	02-Feb-15
2	2nd Annuity	30-Jul-15
3	3rd Annuity	29-Jan-16
4	4th Annuity	30-Jul-16
5	5th Annuity	07-Feb-17
6	6th Annuity	8-Aug-17
7	7th Annuity	07-Feb-18
8	8th Annuity	26-Jul-18
9	9th Annuity	30-Jan-19
10	10th Annuity	29-Jul-19
11	11th Annuity	03-Feb-20
12	12th Annuity	28-Jul-20
13	13th Annuity	28-Jan-21

10.19 Concession Fee (Article 26):

In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs 1.00 per year during the Concession Period
Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year. Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee Clause 27.1.1:

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41):

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Accordingly, the following policies being maintained by the concessionaire copies of the same are provided in **Annexure-9**.

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Standard Fire & Special Perils Policy	Oriental Insurance Company Ltd	171200/11/2020/253	16.12.2020	15.12.2021	Fully constructed Road of Ashoknagar-bridges and Concrete/Steel
Fire Industrial All Risk Policy	Oriental Insurance Company Ltd	171200/11/2021/254	15.12.2020	15.12.2021	Operation & Maintenance of Road, Bridges and any other property on the stretch.
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/45	08.09.2020	07.09.2021	Equipment's for Toll plaza
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	3114203388023000000	19.05.2020	18.05.2021	All categories of Employees of DBL & sub-contractor engaged in Project SPV

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time traffic data collected from the submissions made as per Schedule N, the traffic growth observed almost 5% and the same is considered while estimating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Km.7+300 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
Major maintenance (MM) /Periodic maintenance is scheduled in 2021 and 2028.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance Work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexures

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair/Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/ NO)	Condition (PF/F)***
0+000	1+000								G		E/P	F	F	LD	F
1+000	2+000								G		E/P	F	F	LD	F
2+000	3+000								G		E/P & E	F	F	LD	F
3+000	4+000								G		E	F	F	ULD	PF
4+000	5+000								G		E	F	F	ULD	PF
5+000	6+000								G		E	F	F	ULD	PF
6+000	7+000								G		E	F	F	ULD	PF
7+000	8+000								G		E	F	F	ULD	PF
8+000	9+000								G		E	F	F	ULD	PF
9+000	10+000								G		E/P & E	F	F	LD	F
10+000	11+000								G		E/P & E	F	F	LD	F
11+000	12+000								G		E	F	F	ULD	PF
12+000	13+000								G		E	F	F	ULD	PF
13+000	14+000								G		E	F	F	ULD	PF
14+000	15+000								G		E	F	F	ULD	PF
15+000	16+000								G		E	F	F	ULD	PF
16+000	17+000								G		E	F	F	ULD	PF
17+000	18+000								G		E	F	F	ULD	PF
18+000	19+000								G		E	F	F	ULD	PF
19+000	20+000								G		E	F	F	ULD	PF
20+000	21+000								G		E/P & E	F	F	LD	F
21+000	22+000								G		E	F	F	ULD	PF
22+000	23+000								G		E	F	F	ULD	PF
23+000	24+000								G		E	F	F	ULD	PF
24+000	25+000								G		E	F	F	ULD	PF
25+000	26+000								G		E	F	F	ULD	PF
26+000	27+000								G		E	F	F	ULD	PF
27+000	28+000								G		E	F	F	ULD	PF
28+000	29+000								G		E/P &	F	F	LD	F

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair/Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/ NO)	Condition (PF/F)***
											E				
29+000	30+000	1	3						F		E	F	F	ULD	PF
30+000	31+000								G		E/P & E	F	F	LD	F
31+000	32+000								G		E/P & E	F	F	LD	F
32+000	33+000								G		E	F	F	ULD	PF
33+000	34+000								G		E/P & E	F	F	LD	F
34+000	35+000								G		E/P & E	F	F	LD	F
35+000	35+575								G		E	F	F	ULD	PF

Annexure 2: Condition of structures

Type of Structure	Minor bdg. Upgraded to Major Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge
Chainage (Km.)	**9+900**	**10+950**	**16+750**	**18+300**	**3+200**	**16+050**	**20+700**	**23+050**	**28+800**	**30+900**	**5+021**
Substructure	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Superstructure	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Expansion Joint	Fair	Fair	Fair	Fair	Fair	-	-	-	-	Fair	-
Approach slabs	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Drainage spouts	-	-	-	-	-	-	-	-	-	-	-
Wearing coat	Good	Good	Good	Good	Good	Good	Fair	Fair	Good	Fair	Fair
Bearings	-	-	-	-	-	-	-	-	-	-	-
Quadrant Pitching	Good	Fair	Fair	Good	Fair	Good	Fair	Fair	Good	Good	Good
Toe wall	-	-	-	-	-	-	-	-	-	-	-
Aprons	Good	Good	Good	Good	Fair	Good	Fair	Good	Good	Good	Good

Annexure 3: Condition of Culverts

Box/Slab Culverts

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet wall
1	4+350	Good	Good	Good	Fair	Fair	Good
2	14+600	Good	Good	Fair	Fair	Fair	Good
3	22+150	Good	Good	Good	Fair	Fair	Good
4	23+700	Good	Good	Fair	Fair	Fair	Good
5	24+100	Good	Good	Good	Fair	Fair	Good
6	24+500	Good	Fair	Fair	Fair	Fair	Good
7	25+350	Good	Good	Good	Fair	Fair	Good
8	25+900	Good	Good	Good	Fair	Fair	Good
9	26+750	Good	Good	Good	Fair	Fair	Good
10	27+150	Good	Good	Good	Fair	Fair	Good
11	27+900	Good	Good	Good	Fair	Fair	Good
12	28+100	Fair	Good	Good	Fair	Fair	Good
13	28+400	Good	Good	Good	Fair	Fair	Good
14	29+200	Good	Fair	Fair	Fair	Fair	Good
15	29+400	Good	Good	Fair	Fair	Fair	Good
16	30+325	Good	Good	Fair	Fair	Fair	Good
17	31+650	Good	Good	Fair	Fair	Fair	Good
18	32+050	Good	Good	Good	Fair	Fair	Good
19	32+300	Good	Good	Good	Fair	Fair	Good

Hume Pipe Culverts

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+100	Good	Good	Fair	-
2	1+200	Good	Good	Fair	-
3	2+000	Fair	Good	Fair	-
4	3+850	Good	Good	Fair	-
5	6+500	Good	Good	Fair	-
6	7+900	Fair	Good	Fair	-
7	9+500	Good	Good	Fair	-
8	14+250	Good	Good	Fair	-
9	15+320	Good	Good	Fair	-
10	15+350	Good	Good	Fair	-
11	16+650	Good	Good	Fair	-
12	17+150	Good	Good	Fair	-
13	18+650	Good	Good	Fair	-
14	27+360	Good	Good	Fair	-
15	33+050	Good	Good	Fair	-

Annexure 4: Estimation of Toll Revenue

Toll Plaza-I:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km.7.300
Car/Taxi/Van	502
LCV	211
Bus	28
Truck	38
MAV	93

2. **Traffic Growth Rates:**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data:**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99%	1%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates:**

Table-4: Details of Toll Fee

Vehicle Type	Toll Fee at Km.7.300 (2019-2020)
Car/Taxi/Van	20
LCV	50
Bus	105
Truck	125
MAV	250

Toll Plaza-1 Revenue (Km.7.300):

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	3611860	197675	3858550	1055310	1706710	8296730	18726835	187.268	187.268
2020-21	3792453	220531	4051478	1133370	1895030	9007591	20100452	201.005	388.273
2021-22	3982076	231558	4679457	1246707	2066311	9828871	22034979	220.350	608.623
2022-23	4181179	257438	4913429	1368544	2249983	10709760	23680334	236.803	845.426
2023-24	5487798	285327	5628110	1499449	2446857	11654167	27001706	270.017	1115.443
2024-25	5762188	299593	5909515	1640022	2657793	12666239	28935350	289.353	1404.797
2025-26	6050297	331129	6204991	1790904	2790682	13750383	30918387	309.184	1713.980
2026-27	6352812	347686	7058178	1880449	3027890	14911276	33578291	335.783	2049.763
2027-28	6670453	383324	7411086	2050413	3281842	16153882	35951000	359.510	2409.273
2028-29	7003975	421656	8380228	2232672	3553620	17483471	23766543	237.665	2646.939

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	35+575	12	4	350	597,660	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km	2+406	24	4	350	80,842	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km	2+406	52	1	1939	242,592	01 nos of Labour
4	ROW Cleaning	Half yearly	Km	17+7875	2	5	350	62,256	5 Nos of labour per KM (50% of the Project length)
5	Cleaning of Culverts	Half yearly	Nos	34	2	2	650	88,400	3 nos of Labour along with JCB or Excavator
6	Road Furniture Cleaning	Quarterly	Km	35+575	4	1	350	49,805	02 nos of Labour
7	Maintenance of Bus shelters	Monthly	Nos	16	6	1	350	33,600	2 nos/ Bus shelter/month
8	General Cleaning in Building & Facilities	Daily	Nos	3.00	6	15	350	94,500	02 nos of Labour for 30 days
9	Bridges	Half yearly	Nos	10	2	2	350	14,000	02 nos of Labour for removal of vegetation/Structure
Routine Maintenance cost for 1 year								**1,263,655**	

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	EQUIPMENT SUPPLY								
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Grass cutter	Monthly	Nos	1.8	12	0	12000	1,080	(12000/year)

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
3	Manholes / Skyscraper	Monthly	Nos		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Bikes	Monthly	Nos	1.8	12	0	2500	3,600	Per Supervisor/Per Month
5	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								79,680	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
3	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
Total O&M Costs								**1,365,335.00**	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	2878	516	1,485,048	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sq.m	1	1	211	168	35,448	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	533.625	225	360,197	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 nos)

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	35.575	4	9	2250	81,000	5 % of total stones per year (unable to understand the backup)
Total incidental cost for 1 Year								**2,103,693**	

Operational Expenses

S.No.	Particulars	Amount
1	Man Power	₹ 2,736,000
2	Fuel for Generator & Vehicles	₹ 804,000
3	Electricity	₹ 330,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 38,550
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	₹ 3,993,550

Major Maintenance BOQ

S. No.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	-	14.00		-	14.00	

S. No.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00		-	7,480.00	
3	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	3,383.04	6,800.00	2,30,04,655	3,383.04	6,800.00	2,30,04,655
4	Providing Micro surfacing	Sqm	1,35,321.50	160.00	2,16,51,440	1,35,321.50	160.00	2,16,51,440
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00			250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**4,46,56,095**			**4,46,56,095**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider**	Rmt	-	380.00		-	380.00	

S. No.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	5% for construction period.							
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	8,720.83	516.00	44,99,950	8,720.83	516.00	44,99,950
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**44,99,950**		-	**44,99,950**
	Grand Total				**4,91,56,045**			**4,91,56,045**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/A-V/2012/ 13324
Bhopal, dated 08 February,2013

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal
Fax: 4247574

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Ashoknagar-Vidisha Major District Road on BOT (Toll + Annuity) basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Ashoknagar-Vidisha Major District Road on BOT (Toll+Annuity) basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **Rs. 5.04 crores (Rupees five crores four lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA**

(Arun Paliwal)
Dy. General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

VAIDYA ORGANISATION
INFRASTRUCTURE DEVELOPMENT CONSULTANT

Head Off. : 311- Indraprasth Tower, 6/1 M.G. Road, Indore (M.P.)
Tel/Fax : 0751- 4050850, Mob : 98262-80850, E-mail : Vaidyamk@yahoo.com.uk
Gwalior Off. : 468- Hargovindpuram, City Center, Thatipur, Gwalior (M.P.)
Tel/ Fax : 0751- 4010803, Mob : 94256-09290, E-mail : vaidya.tlgwalior@gmail.com

Provisional Certificate

1. I, **R.P. Mishra** (Name of Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated **22nd March 2013** (the "Agreement") for development of the **Ashoknagar-Vidisha Road** section (**km 0+000 to km 35+661**) of MDR the "Project Highway" on build, Operate, and Transfer {BOT(Toll+Annuity)} basis, through **M/s DBL Ashoknagar-Vidisha Tollways Ltd., Bhopal (M.P.),** hereby certify that the tests specified in article 14 and Schedule-I of the agreement have been undertaken to determine compliance of the Project Highway with the provision of the Agreement.
2. Construction works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the concessionaire), I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the users thereof, and in terms of the Agreement, the Project Highway is hereby Provisionally declared fit for entry into commercial operation on this the **26th** day of **July 2014.**

ACCEPTED, SIGNED, SEALED
AND DELIEVERED
For and on behalf of
CONCESSIONAIRE by:

(Devendra Jain)
(Director)
M/s DBL Ashoknagar-Vidisha Tollways Ltd., Bhopal (M.P.)
(Address:- E-5/99, Arera Colony, Bhopal (M.P.)

ACCEPTED, SIGNED, SEALED
AND DELIEVERED
For and on behalf of
INDEPENDENT ENGINEER by:

26/07/2014

(R.P. Mishra)
(Team Leader)
Vaidya Organisation
(Address:- 468- Hargovindpuram, City Centre, Thatipur, Gwalior (M.P.)

Annexure 8: Completion Certificate

COMPLETION CERTIFICATE

1. I, R.P. Mishra (Name of Independent Engineer), acting as Independent Engineer, under and in accordance with the Concession Agreement dated 22nd March 2013 (the "Agreement"). For Two laning of the Ashoknagar-Vidisha section (km 0+000 to 35+575 of Major District Road (the "MDR") (the "Project Highway") on build, operate and transfer (BOT Toll-Annuity) basis, through M/s DBL Ashoknagar-Vidisha Tollways Ltd.), herby certify that the tests specified in article 14 and schedule-I of the Agreement have been successfully undertaken to determine compliance of the project highway with provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 22nd Day of October'2014.

SIGNED,SEALED
AND DELEVERED
For and on behalf of
CONCESSIONAIRE by:

(Shakir Khan)
(Plant Manager)
Plot no.-5, Inside Govind Narayan Singh Gate, Chuna Bhatti, kolar Road Bhopal (M.P.) - 462016

SIGNED,SEALED
AND DELEVERED
For and on behalf of
INDEPENDENT ENGINEER by:

(R.P. Mishra) 22/10/14
(Team Leader)
(468-Hargovindpuram, City Centre, Thatipur, Gwalior (M.P.))

Annexure 9: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Thursday, 8 [illegible] 24, 2020 5:50 AM
Location: NOIDA

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/45**	**Prev Policy No**	:
Cover Note No	: ER1700203538	Cover Note Dt	: 08/09/2020
Insured's Code	: 102436990	Issuing Office Code	: 171200
Insured's Name	: DBL Ashok Nagar Vidisha Tollways Ltd. (GSTIN: 23AAECD5553C1Z3)	Issuing Office Name	: CBL Vadodara (GSTIN: 24AAACT06
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal, 462016, M.P.	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL[illegible]@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000877 - 23/09/2020 GST INVOICE NO :2419502808 UIN :0

Gross Premium : 1,043 GST : 188 Stamp Duty : 1 Total : 1,231

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 23,17,803

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Ashoknagar to Vidisha

MADHYA PRADESH - 464001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		23,17,803

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 22/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupees Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

This Document is Digitally Signed

Signer: ATUL JERATH
Date: Wed, Dec 23, 2020 11:27:23 IST
Location: NOIDA
Reason: Signing Policy for OICL

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	**: 171200/11/2021/254**	**Prev Policy No**	**: 171200/11/2020/478**
Cover Note No	:	Cover Note Dt	:
Insured's Name	: 102436990 - DBL Ashok Nagar Vidisha Tollways Ltd. (GSTIN: 23AAECD5553C1Z3)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal, 462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / avni.sheth@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 16/12/2020 TO MIDNIGHT OF 15/12/2021

Collection No & Dt : DC_I_INDCSH 3214001253 - 15/12/2020 GST INVOICE NO :2419707235 UIN :0

Gross Premium : 9,25,755 GST : 1,66,636 Stamp Duty : .5 Total : 10,92,391

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	40.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Operation & maintenance of Roads, Bridges and any other property on the stretch asdescribed in the property to be covered
Fully constructed road of Ashok Nagar Vidisha Major district road on BOT (Toll+Annuity) basis, From KM 0.10 to KM 35.68 (design length 35.58 Km) in the state of Madhya Pradesh ¿ 473330

Deductible :

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges) , Underpasses, Culverts, drainages, Utilities, Slabs Box, Causeways, Machineries(Full desc.-As per annexure)		97,08,88,929

SCHEDULE OF PREMIUM

Place :
Date : 15/12/2020

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 4

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Wed, Dec 23, 2020 11:27:13 IST
Location: NOIDA
Reason: Signing Policy for OICL

STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	**: 171200/11/2021/253**	**Prev Policy No**	**: 171200/11/2020/477**
Cover Note No	: -	Cover Note Dt	:
Insured's Name	: 102436990 - DBL Ashok Nagar Vidisha Tollways Ltd. (GSTIN: 23AAECD5553C1Z3)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal, 462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / avni.sheth@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code :

Agent/Broker : **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**

Address : **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**

Tel/Fax/Email

Period of Insurance : FROM 00:00 ON 16/12/2020 TO MIDNIGHT OF 15/12/2021

Collection No & Dt : DC_I_INDCSH 3214001253 - 15/12/2020 GST INVOICE NO :2419707268 UIN :0

Gross Premium : 79,153 GST : 14,248 Stamp Duty : .5 Total : 93,401

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	40.00

RISK DETAILS

1 Location of the Risk : Fully constructed road of Ashok Nagar Vidisha Major district road on BOT (Toll+Annuity basis, From KM 0.10 to KM 35.68 (design length 35.58 Km) in the state of Madhya Pradesh ¿ 473330

MADHYA PRADESH
VIDISHA
464001
VIDISHA

Risk Description : Roads

SCHEDULE OF PREMIUM

TOTAL PREMIUM	79,153.00
ADD :GST	14,248.00
STAMP DUTY	0.50
TOTAL AMOUNT	93,401.00

Date : 15/12/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule). The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 3

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL ASHOK NAGAR VIDISHA TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203388023000000

We thank you for having preferred us for your *insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203388023000000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) | UIN : IRDAN129P001TV0220111 2 | IRDAI Reg No. 146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor HDFC House, 165 - 166 Backbay Reclamation H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

Annexure 10: Change of Scope

CIN No.: U45203MP2004SGC016758

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.
(Govt. of M.P. Undertaking)
45 - A, Arera Hills, Bhopal - 462 011, Madhya Pradesh
Tel.: (O) 0755-2765205, 2527202 - 299 (PRL Line) Fax: +91 755 2572643
Website: www.mprdc.nic.in

No. 312/GM/GWL/004/III/2016 Bhopal, Date : 18/01/16

To,

Chief Engineer (MDR),
MPRDC Bhopal

Sub :- Development of Ashoknagar-Vidisha Road on BOT (Toll/Annuity) basis – **Regarding Financial Implication.**

Sub :- Minutes of meeting dated 13.10.2015

Kindly find enclosed herewith the Financial Implication for development of Ashoknagar-Vidisha Road on BOT (Toll/Annuity) basis along with minutes of meeting dated 13.10.2015 for further necessary action please.

Encl :- As above.

General Manager
MPRDC Narmadapuram

Connecting People Through quality infrastructure

(1)

MINUTES OF MEETING

FINANCIAL IMPLICATION OF APPROVED CHANGE OF SCOPE

NAME OF ROAD: ASHOKNAGAR-VIDISHA ROAD (MDR) ON BOT (TOLL + ANNUITY)

Meeting of Committee formed at the level of General Manager (Tech.) of M.P.R.D.C. Gwalior for Financial Implication of Approved Change of Scope by advisory committee of M.P.R.D.C. on dated 13.02.2015, for development of above road on BOT (Toll+Annuity) basis. Meeting has been held in the office of General Manager MPRDC Bhopal on dated 13.10.2015. Following officials were present in the meeting:-

1. Shri. B. S. Meena, General Manager, MPRDC,Bhopal
2. Shri. Pankaj Ojha, Divisional Manager, MPRDC, Gwalior
3. Shri Anil Srivastav, AGM (MDR), MPRDC, Bhopal
5. Shri Manoj Vaidya, Proprietor M/s Vaidya Organisation Indore
6. Shri Nitin Srivastava General Manager M/s Dilip Buildcon Limited.,Bhopal the Concessionaire

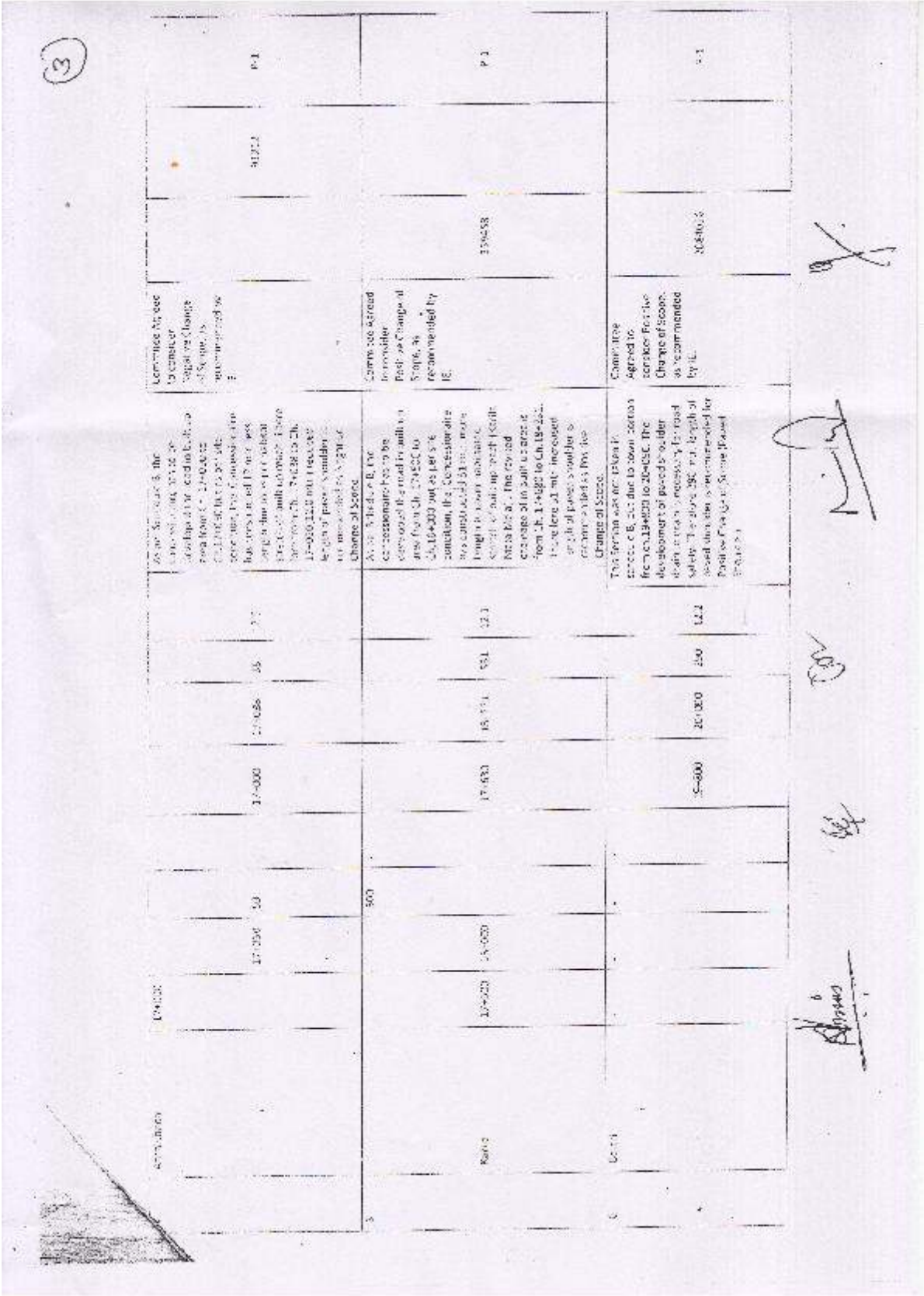
Brief Details of Project:-

1. Name of Work	:- Development of Ashoknagar-Vidisha Road (MDR)on BOT(Toll+Annuity)
2. Name of Concessionair	:- M/S DBL Ashoknagar-Vidisha Tollways Limited Project., Bhopal.
3. Length of Project	:- 35.575 Km.
4. Total Project Cost	Rs 85.44 Cr
5. Date of Provisional Completion Certificate	:- 26.07.2014
6. Date of Completion Certificate	:- 22.10.2014
7. Annuity	:- Rs 5.04 Cr
8. Financial Implication Positive	:- Rs 20,48,854.00 /-
9. Road Safety Fund i.e. 0.25 % of TPC on Rs 85.44 Cr	:- Rs 21,36,000.00 /-
10. Status as As Built Drawing	:- Submitted to Divisional Manager MPRDC Gwalior Office
11. Financial Implication Calculated	:- As per PWD SOR w.e.f. 01.02.2013
12. Rates	:- Above/Below/At SOR, to be decided by HO MPRDC Bhopal

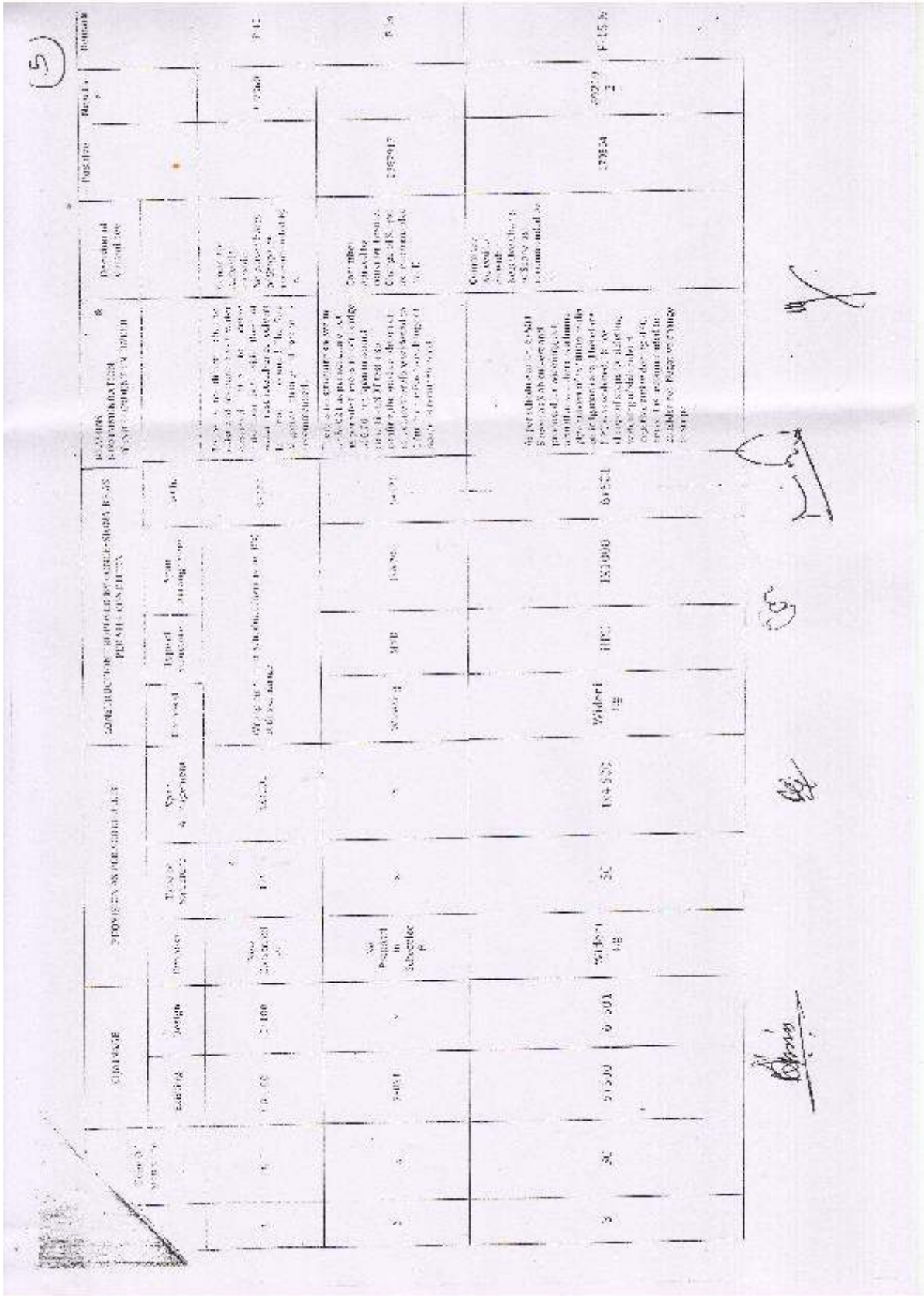
The Financial Implication submitted by Independent Engineer vides its letter no. IVO/TL/2012/MDR/AVR/Final-Variation/1029 dated 18.04.2015. These have been checked and Certified by the above committee in meeting as below:-

②

SR. No.	CHAINAGE	PROVISION AS PER SCHEDULE-B				CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION				REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee	Positive	Negative	Remark
	VILLAGES/TOWN	From Ch.	To Ch.	Length	Details	From Ch.	To Ch.	Length	Details					
1.	Ashoknagar(Four Lane Section)	0+000	0+200	200	Four Lane	0+000	0+200	200	Two lane with paved shoulder in available RO/W (6.6 m)	Due to Lane constraint and non availability of sufficient ROW for construction of 4 Lane carriageway, this section of 200.00 mts constructed and developed as Two lanning with Paved shoulder in available ROW. Hence it is recommended to consider difference of 4 lanning and 2 lane with paved shoulder as Negative Change of Scope	Committee Agreed to consider Negative Change of Scope, as recommended by IE.		110500	P-1
2.	Ashoknagar(Four Lane Section)	2+200	2+000	800	Four Lane	2+000	2+000	1800	Four Lane	Executed as per schedule 2.	Committee Agreed	0.00	0.00	P-1
3.	Athalkhed	16+500	17+000	500		16+160	17+000	840	42.5	As per schedule B, the concessionaire has to develop the road in hard up area from Ch. 16+500 to Ch. 17+000 but as per site condition, the Concessionaire has constructed 340 mtr. more Length to cover habitation stretch at both up reaches. Therefore from Ch. 16+160 to Ch. 16+500(340 mtr.) increased length of paved shoulder is recommended as Positive Change of Scope.	Committee Agreed to consider positive Change of Scope, as recommended by IE.	2584340		P-1



					35+350	35+100	50	12.13	[illegible] ROW portion starts [illegible] 35+350, therefore development of two lane with paved shoulder in available ROW is necessary. Therefore 50 mtr additional length of paved shoulder is recommended for Positive Change of Scope.	Committee Agreed to consider Positive Change of Scope, as recommended by IE.	334483		P-1
	Bangla Chauraha	35+100	35+660	560	35+100	35+575	17[illegible]	25.[illegible]	As per Schedule B, the [illegible] the [illegible] from Ch. 35+100 to Ch.35+660 but [illegible] condition the Concessionaire has constructed [illegible] [illegible] Ch. 35+575 to Ch. 35+660 [illegible] length of paved shoulder is recommended as Negative Change of Scope.	Committee Agreed to consider Negative Change of Scope, as recommended by IE.		943350	P-1
9	Total Project Length=[illegible] Km.	Total Length=[illegible] Km			Total Length=[illegible] Km				Actual length of project has been reduced [illegible] schedule B. Hence it is [illegible] to consider reduced Project Length [illegible] as Negative Change of Scope.	Committee Agreed to consider Negative Change of Scope, as recommended by IE.		1350057	P-1
10	4 lane (W/o on Kerb)											194400	P-1
[illegible]	4 lane (Steel Railing)	0+000 to 0+[illegible]			Total Length= 400 [illegible]							710800	P-1
										Total =	5382337	3200768	



(7)

0	30	28+100	28+100	widening	30	1x4.00	widening	30	1x2.00	28+100	The schedule proposed for widening of slab culvert 1x4m span at ch.28+100 but at site,the slab culvert at this chainage having one span of 2m which was widened.Hence a change of scope for widening of slab culvert in 2m span in place of 4m as proposed in schedule. Therefore it is recommended to consider the Negative change of scope.	Committee Agreed to consider Negative Change of Scope as recommended by E	1932041	4526046	[illegible]
											Total =		5738612	5871327	

1. Positive Variation Highway Work As per Page No. 04 Amount **Rs.53,82,330.00**
2. Positive Variation Structure Work As per Page No. 07 Amount **Rs.57,38,612.00**

Total Positive = **Rs. 1,11,20942.00**

3. Negative Variation Highway Work As per Page No. 04 Amount **Rs.32,00,768.00**
4. Negative Variation Structure Work As per Page No. 07 Amount **Rs.58,71,327.00**

Total Negative = Rs. 90,72,095.00
Total Net Positive Variation = Rs. 20,48,847.00
Cost of Safety Fund = Rs. 21,36,000.00
Diffrence of Amount = Rs. 87,153.00

Note :- Financial Implication has been calculated as SOR w.e.f. 01.02.2013. Premium /Discount may be finalised at Head Office Level

(Nitin Srivastava)	(Manoj Vaidya)	(Anil Srivastava)	Pankaj Ojha	(BS Meena)
General Manager	Proprietor	AGM (MDR)	DM (Gwalior)	General Manager
M/s DBL	Vaidya Organisation	MPRDC	MPRDC	MPRDC-Bhopal

Annexure 11: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Development of Betul - Sarni – Tekhnadhon-Junnardeo – Parasia (SH-43) Road in the State of Madhya Pradesh on DBFOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Betul - Sarni – Tekhnadhon-Junnardeo – Parasia (SH-43) Road in the State of Madhya Pradesh on DBFOT (Toll+Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Betul-Sarni	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Betul Sarni Tollways Limited (herein after referred to as the "Concessionaire") had augmented the existing two lanes road "Betul-Sarni-Tikadhan-Junnardeo-Parasiya (SH-43) in the State of Madhya Pradesh, in accordance with the provisions of the Concession Agreement executed on July 11, 2013 with Madhya Pradesh Road Development Corporation (herein after referred to as the "MPRDC) on DBFOT Toll+ Annuity basis. The Project Highway starts at Km 0+000 (Kamani Gate at Betul) and ends at Km 124+100 (Bus stand Parasiya). The State Highway (SH - 43) connects Betul-Sarni-Tikadhan-Junnardeo-Parasiya.

Total length of the Project Highway is 124.100 Km. The Project road passes through Plain, rolling and hilly terrain, predominantly agriculture land and balance constitute Built up area. It also passes through forest area. Project Location map is given at Fig 1-1.

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL BETUL SARNI TOLL WAYS LIMITED vide agreement dated 26.03.2018.

SHREM FINANCE PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

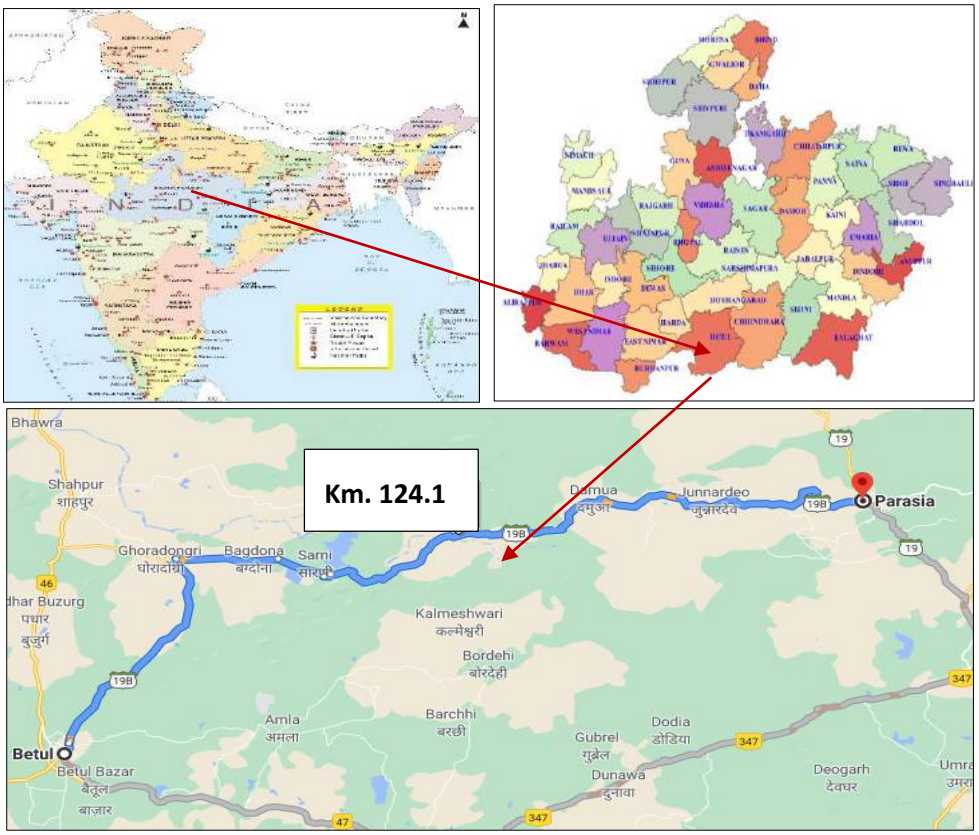

Figure 1.1: Project Location Map

1.2 Project Data

The details of the Project are listed in the following table.

Table 1.1: Salient features of the Project

S. No.	Particulars	Details
1	Name of the project	Construction of Betul - Sarni - Junnardeo – Parasia (SH-43), development, maintenance and management on design, build, finance, operate and transfer (DBFOT) Toll Plus Annuity Basis in the State of Madhya Pradesh.
2	Road Type	State Highway (SH)-43
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL BETUL SARNI Toll ways Limited
5	Name of the EPC Contractor	Dilip Build con Limited
6	Design Length as per Schedule B	124.100 Kms.
7	Length omitted under negative Change in Scope	---
8	Actual Length Constructed	124.100 Kms.
9	Project Lane Configuration	2 Lane/4 Lane
10	Total Project Cost	Rs. 237.64 Cr
11	Nature of contract	BOT(Toll + Annuity)
12	Toll collected by	Concessionaire
13	Concession Period	15 years from the Appointed date
14	Appointed date	07.04.2014
15	Concession End Date	06.04.2029
16	Construction Period	730 days from the Appointed date.
17	Schedule Commercial Operation Date	April 05, 2016
18	Date of issuance of Provisional Certificate	May 12, 2015. (Annexure-7)
19	Commercial Operation Date	May 12, 2015.
20	Date of issuance of Completion Certificate	February 28, 2019. (Annexure-8)
21	Annuity Amount (every six months)	Rs 15.48 Cr
22	Total Number of Annuities payable	26 Nos.
23	First Annuity Payment Date	November 12,2015
24	Total Number of Annuities Paid	11

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of the CA including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per Schedule B of CA	As per COS*	As per Site
1	Total Length	124.10		124.10
2	Two lane length with earthen shoulder	93.100 Km	6.444 Km is converted into Paved Shoulder	86.656 Km
3	Two lane with paved shoulder	25.750 Km	Flexible pavement with paved shoulder for an additional length of 1.760 km	27.510 Km
4	Four Lane	5.250 Km	---	5.250 Km
5	Two lane Rigid Pavement	-	Rigid pavement with PQC in 10 m width for a length of 2.624 km and 2.06 km with 7 m concrete pavement over existing concrete base treated as DLC	4.684 Km
6	Major Junctions	05 Nos.	-	05 Nos.
7	Minor Junctions	10 Nos.	-	10 Nos.
8	Toll Plaza	02 Nos.	-	02 Nos.
9	Bus Bays/ Shelter	22 Nos.	-	22 Nos.
10	Truck Lay bye	02 Nos.	-	02 Nos.
11	Major Bridges	09 Nos.	-	09 Nos.
12	Minor Bridges	36 Nos.	-	36 Nos.
13	Pipe Culverts	252 Nos.	-16Nos., +9Nos.	245 Nos.
14	Slab/Box Culverts	33 Nos.	-1No., +4Nos.	36 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule during the Construction as shown below.

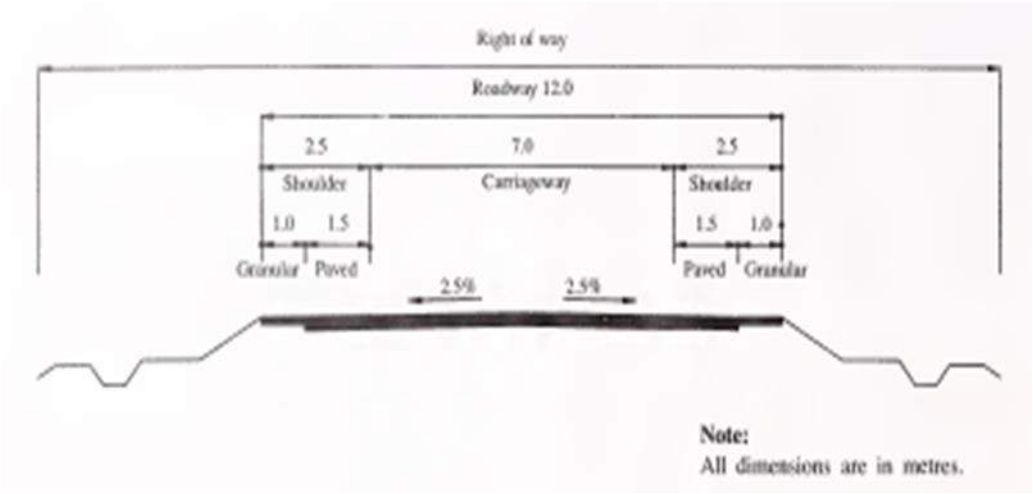

Figure 2.1: TCS 2.1 of Schedule D
Two Laning with Granular Shoulder. (Cross Section In Open Areas & Rural Areas having

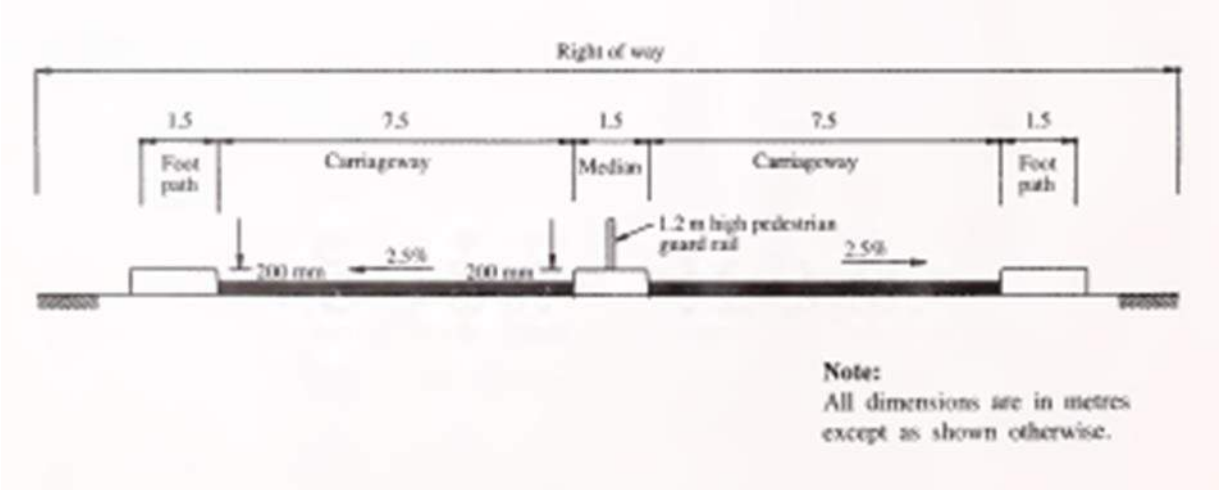

Figure 2.2: TCS 2.2 of Schedule D
Widening to 4 Lane divided Carriageway with footpath Built up area.

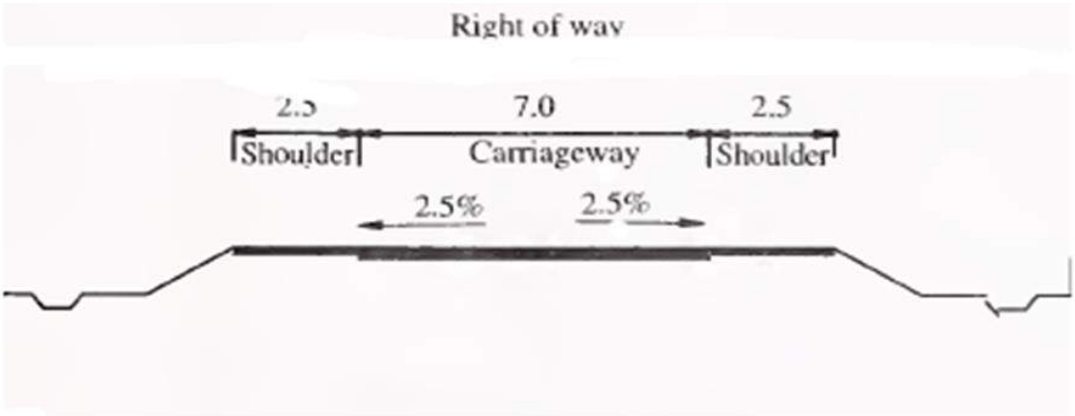

Figure 2.3: TCS 2.3 of Schedule D
The Carriageway shall be 7.0 m with Paved shoulder (In Built up Areas)

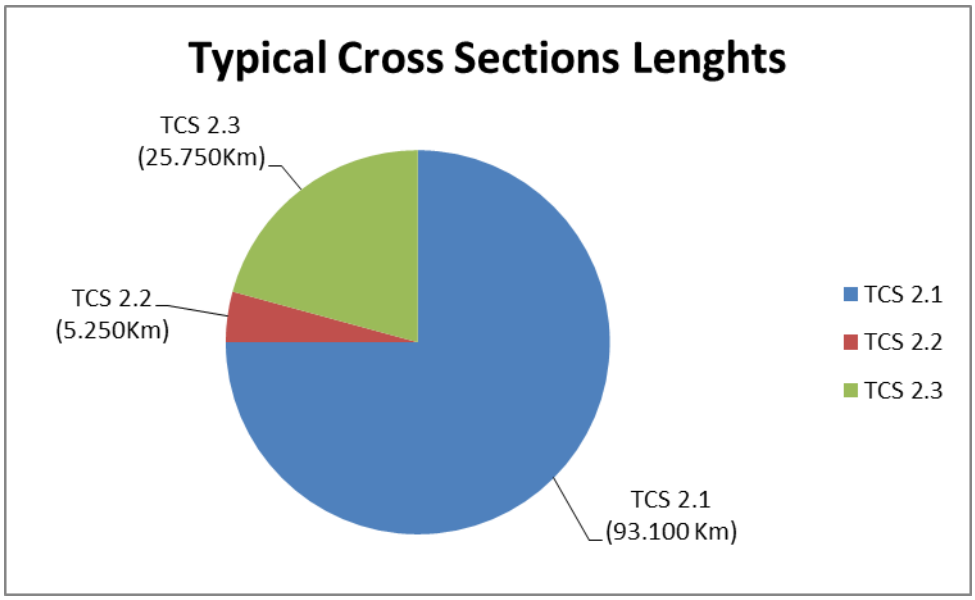

Figure 2.4: Pictorial Diagram of TCS Lengths.

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	Chainage (km.)		Length (m)	Type of TCS
	From	To		
1	0+000	0+900	900	TCS.2.1
2	0+900	1+350	450	TCS.2.3
3	1+350	3+400	2050	TCS.2.1
4	3+400	4+000	600	TCS.2.3
5	4+000	20+650	16650	TCS.2.1
6	20+650	21+300	650	TCS.2.3
7	21+300	37+100	15800	TCS.2.1
8	37+100	38+300	1200	TCS.2.3
9	38+300	39+500	1200	TCS.2.3
10	39+500	40+900	1400	TCS.2.3
11	40+900	46+800	5900	TCS.2.1
12	46+800	48+800	2000	TCS.2.2
13	48+800	69+750	20950	TCS.2.1
14	69+750	70+500	750	TCS.2.3
15	70+500	70+700	200	TCS.2.3
16	70+700	85+800	15100	TCS.2.1
17	85+800	86+450	650	TCS.2.3
18	86+450	87+750	1300	TCS.2.1
19	87+750	88+800	1050	TCS.2.3
20	88+800	91+000	2200	TCS.2.1
21	91+000	92+000	1000	TCS.2.3

S. No.	Chainage (km.)		Length (m)	Type of TCS
	From	To		
22	92+000	93+200	1200	TCS.2.1
23	93+200	93+950	750	TCS.2.3
24	93+950	94+850	900	TCS.2.1
25	94+850	95+950	1100	TCS.2.3
26	95+950	96+650	700	TCS.2.1
27	96+650	97+850	1200	TCS.2.3
28	97+850	99+400	1550	TCS.2.1
29	99+400	100+500	1100	TCS.2.3
30	100+500	101+100	600	TCS.2.3
31	101+100	103+000	1900	TCS.2.1
32	103+000	103+300	300	TCS.2.3
33	103+300	105+600	2300	TCS.2.3
34	105+600	107+400	1800	TCS.2.1
35	107+400	107+900	500	TCS.2.3
36	107+900	108+400	500	TCS.2.1
37	108+400	109+400	1000	TCS.2.3
38	109+400	109+500	100	TCS.2.3
39	109+500	109+700	200	TCS.2.3
40	109+700	110+500	800	TCS.2.3
41	110+500	110+600	100	TCS.2.1
42	110+600	111+550	950	TCS.2.3
43	111+550	112+700	1150	TCS.2.3
44	112+700	114+000	1300	TCS.2.1
45	114+000	115+600	1600	TCS.2.3
46	115+600	115+700	100	TCS.2.1
47	115+700	116+000	300	TCS.2.3
48	116+000	116+700	700	TCS.2.3
49	116+700	118+200	1500	TCS.2.1
50	118+200	119+100	900	TCS.2.3
51	119+100	119+700	600	TCS.2.1
52	119+700	120+750	1050	TCS.2.3
53	120+750	120+850	100	TCS.2.1
54	120+850	124+100	3250	TCS.2.2

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from side drains are constructed along the main carriage way on both flanks as specified in Schedule B of the CA in strict adherence to the Standard Specifications set forth in Schedule D of the CA.

The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.5 Bypass/Realignment

Bypass/Realignment are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.6 Intersections

As per provisions of Schedule B of the CA, 5 Major Intersection and 10 Minor Intersections are provided. Details are given below.

Table 2.3: Summary of Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
1	0+000	X	Major
2	21+000	T	Minor
3	21+200	X	Major
4	24+150	X	Minor
5	24+200	X	Minor
6	30+000	X	Major
7	30+500	T	Minor
8	33+600	T	Minor
9	93+300	T	Minor
10	102+600	X	Major
11	114+750	T	Minor
12	119+500	X	Minor
13	121+700	X	Minor
14	122+750	T	Minor
15	124+050	X	Major

2.7 Grade Separated Structures and underpasses:

There are no Grade separated structures in the Project, as per provisions of Schedule B of the CA.

2.8 Road Over Bridge:

There are no Road Over Bridge in the Project, as per provisions of Schedule B of the CA.

2.9 Summary of the carriageway and Pavement Details:

Table 2.4: Summary of Carriageway and Pavement Details

S. No.	Description	Flexible (Kms.)	Rigid (kms.)	TCS Type
1	2 Lane with Earthen shoulder	93.100	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	25.750	---	Fig 2.3 of Schedule D

S. No.	Description	Flexible (Kms.)	Rigid (kms.)	TCS Type
3	4 Lane	5.250	---	Fig 2.2 of Schedule D
4	Total Length	124.100	---	
5	TYPE OF ALIGNMENT			
6	New Alignment	---	---	
7	Realignment	---	---	
8	Strengthening	---	---	
9	Reconstruction	124.100	---	
10	Total Length of the Project	124.100	---	

2.10 Summary of Structures:

Table 2.5: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	5	9	34	23
2	Widening	-	1	61	6
3	Reconstruction	4	26	157	4
4	New	-	-	-	-
5	Improvement	-	-	-	-
6	Total	9	36	252	33

2.11 Toll Plazas:

As per Schedule C of the CA provisions, two Toll Plazas have been constructed at Km. 31+000 and 111+950. Salient features of Toll Plaza are provided below.

- Each side comprises of, two normal lane and one extra wide lane.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- C.C. Cameras are installed and monitored in administrative building.

2.12 Bus Bays/Shelters and truck lay byes

As per the provisions of Schedule C of the CA, 22 Nos. Bus shelters and 2 Nos. Truck lay byes are provided in the entire length of Project. Details such as Chainage Location and Name of Village are listed in the following table.

Table 2.6: Truck lay byes Details

S. No.	Location (Km.)	Side	Remarks
1	44+000	LHS	Before Sarni
2	105+000	RHS	Near Junnardev

Table 2.7: Bus Bays/Shelters Details

S. No.	Location (Km.)	Location	S. No.	Location (Km.)	Location
1.	1+125	Godhana	12.	95+400	Kautia
2.	3+700	Chiklar	13.	97+250	Dugariya
3.	20+975	Ranipur	14.	100+250	Dawala
4.	37+700	Saliya	15.	103+300	Junnardeo (Jamai)
5.	39+600	Bagdona (Sarni)	16.	107+650	Jamkunda
6.	48+150	Sarni	17.	110+100	Nzarpur
7.	70+225	Rampur	18.	111+650	Gudi
8.	86+125	Madi	19.	114+800	Ekalhara
9.	88+275	Damua	20.	116+200	MajipaniBamodi)
10.	91+500	Ghodawadi	21.	118+650	Chandameta
11.	93+575	Neemdhana	22.	122+475	Parasiya

2.13 Other Project Facilities Provided as per Schedule C of the CA

- Roadside furniture: Sign boards, KM stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained
- Tree plantation: Tree plantation is provided on both sides, for the full length of project corridor and being maintained.
- Medical Aid Post: Provided at toll plaza location and operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza location and is functional.

W Beam MCB at approaches at Km.13+500

Toll Plaza board at Km. 31+000

Km. 104+000 **MNB approaches at Km.4+300**

Figure 2.5: Representative Photographs of Project Facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in the following table. Couple of representative photographs are given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Villages	31 Nos.
4	Two lane length	114.166Km
5	Four Lane	5.250 km
6	Two lane Rigid Pavement	4.684 km
7	Earthen shoulder	1.0 m to 1.5m Width on site
8	Bypasses	Nil
9	Embankment	Average height of 0.8 m
10	Junctions	15 Nos.
11	Toll Plaza	Km.31+000 & Km.111+950
12	Sign boards	Sign boards are provided as per requirement
13	Road Markings	Lane markings are provided as per requirement
14	Bus Bays /shelters	22 Nos.
15	Truck Lay bye	2 Nos.
17	Street Lighting	Highway lighting provided as per requirement

3.3 Pavement Condition

Pavement Condition survey was carried out on the Project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future Pavement Conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general Pavement Condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively. The Pavement Condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement Condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP 19 and is given in **ANNEXURE 1.** The summary of Pavement Condition is given below.

Table 3.3: Pavement condition summary

From (km.)	To (km.)	Length (kms)	Condition
0+000	124+100	124.100	Good

Km. 15+000

Km. 33+000

Km.50+900

Km. 104+000

Figure 3.1: Representative Photographs of Pavement Condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Condition of the Existing structures

Inspection of existing structures on the project road was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 09 Nos Major Bridge, 36 Nos Minor Bridges, 245 Nos Pipe culverts, 36 Slab/Box culverts are there along this project road.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	09 No's
2	Minor Bridge	36No's
3	Pipe culverts	245 No's
4	Slab/Box Culverts	36 No's.

For major bridges the type of superstructure is RCC Solid slab for some structures and RCC / PSC I Girder for some structures with wall type abutments and Wall type / circular type piers resting on open foundations. There are 36 minor bridges in which some are RCC solid slab type bridges with wall type abutments or piers resting on open foundations. Also, there are some RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of box culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

In Betul-Sarni-Parasia Road, there are total 09 major bridges. Type of superstructure is Solid slab, RCC I Girder and PSC I Girder with wall type abutment, wall type piers and circular piers resting on open foundations. The superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. Crash barrier has been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	14+700	3 x 30.0	90.00
2	17+000	9 x 15.0	135.00
3	17+860	3 x 30.0	90.00
4	31+950	5 x 20.0	100.00
5	58+850	2 x 28.2 + 1 x 33.0	89.40
6	67+750	7 x 20.0	140.00
7	69+600	6 x 12.0	72.00

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
8	75+950	2 x 12.5 + 2 x 21.7	68.40
9	86+950	6 x 12.0	72.00

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Km. 14+700

Km. 17+860

Km. 58+850

Km. 67+750

Figure 4.1: Representative photographs of Major Bridges

4.4 Details of Minor Bridges

In Betul-Sarni-Parasia Road there are 36 minor bridges. The type of superstructure for minor bridges are RCC box type and RCC Solid slab and the substructure is of RCC/PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper or neoprene bearings. RCC crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span(m)	Total Length of Bridge (m)	Description
1	4+300	1 x 10.00	10.00	MNB has RCC solid slab superstructure

S. No.	Chainage (Km.)	Span(m)	Total Length of Bridge (m)	Description
				supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
2	6+380	2 x 15.00	30.00	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
3	11+050	2 x 7.70	15.40	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
4	12+060	3 x 10.00	30.00	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
5	12+400	3 x 13.10	39.30	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
6	12+670	3 x 13.10	39.30	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
7	13+000	3 x 13.50	40.50	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
8	13+850	5 x 10.00	50.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
9	14+050	5 x 11.55	57.75	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
10	14+360	5 x 11.00	55.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
11	18+610	1 x 10.00	10.00	MNB is RCC box type minor bridge.
12	20+465	3 x 11.40	34.20	MNB is RCC box type minor bridge.
13	31+000	2 x 8.00	16.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
14	33+000	2 x 7.00	14.00	MNB is RCC box type minor bridge.

S. No.	Chainage (Km.)	Span(m)	Total Length of Bridge (m)	Description
15	41+400	2 x 6.00	12.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
16	46+860	2 x 9.00	18.00	MNB has RCC Grid slab superstructure supported on conventional RCC/PCC wall type abutments and RCC column type piers resting on open foundations. Buried type expansion joints.
17	50+080	2 x 3.00	6.00	MNB is RCC box type minor bridge.
18	50+850	2 x 7.00	14.00	MNB is RCC box type minor bridge.
19	63+500	3 x 11.00	33.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
20	64+150	2 x 3.00	6.00	MNB is RCC box type minor bridge.
21	65+300	1 x 7.60	7.60	MNB is RCC box type minor bridge.
22	66+160	1 x 6.60	6.60	MNB is RCC box type minor bridge.
23	66+375	5 x 7.00	35.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
24	72+850	5 x 6.50	32.50	MNB has RCC solid slab superstructure supported on conventional CRM wall type piers and abutments resting on open foundations. Buried type expansion joints.
25	81+500	1 x 10.00	10.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
26	83+300	1 x 6.00	6.00	MNB is RCC box type minor bridge.
27	89+100	1 x 10.00	10.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
28	90+050	3 x 6.50	19.50	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
29	92+150	2 x 6.30	12.60	MNB is RCC box type minor bridge.
30	93+530	2 x 10.00	20.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
31	99+100	1 x 10.00	10.00	MNB has RCC solid slab superstructure

S. No.	Chainage (Km.)	Span(m)	Total Length of Bridge (m)	Description
				supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
32	99+850	3 x 10.00	40.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
33	101+225	4 x 10.00	40.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
34	107+010	2 x 10.00	20.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
35	115+150	2 x 7.50	15.00	MNB has RCC solid slab superstructure supported on conventional RCC/PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
36	116+241	1 x 6.10	6.10	MNB is RCC box type minor bridge.

Km. 4+300

Km. 13+850

Km. 50+850

Km. 65+300

Km. 72+850

Km. 92+150

Figure 4.2: Representative photographs of Minor Bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of box culverts are given in **ANNEXURE 3** and pipe culverts are given in **ANNEXURE 4.**

General description of the Slab/Box Culverts

There are 36 Nos. of slab / Box culverts in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span	S. No.	Chainage (Km.)	Span
1	3+360	1 x 4.0	19	40+190	1 x 2.0
2	4+780	1 x 4.0	20	41+180	1 x 2.5
3	7+530	1 x5.7	21	47+650	1 x 3.3
4	23+199	1 x 2.0	22	47+680	1 x 3.0
5	30+770	1 x 1.0	23	47+925	1 x4.60
6	32+285	1 x 2.0	24	48+315	1 x 4.0
7	32+500	1 x 2.3	25	49+015	1 x 3.0
8	33+250	1 x 2.0	26	49+265	1 x 4.0
9	33+355	1 x 3.0	27	72+275	1 x 4.6
10	33+890	1 x 3.0	28	76+200	2 x 4.0
11	34+000	1 x 3.0	29	84+300	1 x 5.6
12	34+600	1 x 3.0	30	84+690	1 x 4.0
13	34+800	1 x 5.9	31	90+785	1 x 4.5
14	35+515	1 x 2.0	32	91+375	1 x 3.0
15	36+200	1 x 5.7	33	96+565	1 x 2.5
16	37+040	1 x 2.0	34	97+660	1 x 4.0
17	38+825	1 x 3.0	35	117+475	1 x 3.0
18	39+710	1 x 2.0	36	120+010	1 x 3.0

The general condition of above slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.34+800 **Km.90+785**

Figure 4.3: Representative photos of Box Culverts

General description of the Pipe Culverts

There are 245 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (km.)	Span (m)	S. No.	Chainage (km.)	Span (m)
1	0+150	1 x 1.20	124	60+540	1 x 1.00
2	1+770	1 x 1.20	125	60+990	1 x 0.90
3	2+019	1 x 1.20	126	61+090	1 x 1.20
4	2+625	1 x 1.20	127	61+230	2 x 1.20
5	2+876	1 x 1.20	128	61+615	2 x 1.20
6	3+500	1 x 1.20	129	62+360	1 x 1.20
7	5+008	1 x 1.20	130	62+750	1 x 1.20
8	5+793	1 x 1.20	131	63+120	3 x 1.20
9	6+650	1 x 0.90	132	64+040	2 x 1.20
10	6+770	1 x 1.20	133	65+000	2 x 1.20
11	6+885	1 x 1.20	134	65+070	2 x 1.20
12	6+920	1 x 1.20	135	66+900	2 x 1.20
13	7+210	1 x 1.20	136	67+310	2 x 1.20
14	8+014	1 x 1.20	137	67+450	1 x 1.20
15	8+130	1 x 1.20	138	67+550	1 x 1.20
16	8+420	1 x 0.90	139	67+640	1 x 1.20
17	10+750	1 x 1.20	140	68+050	1 x 1.20
18	10+825	1 x 1.20	141	69+165	2 x 1.20
19	11+250	1 x 1.20	142	69+500	2 x 1.00

S. No.	Chainage (km.)	Span (m)
20	11+390	1 x 1.20
21	11+425	2 x 1.00
22	11+586	1 x 0.90
23	15+540	1 x 1.20
24	15+665	1 x 1.20
25	16+435	1 x 1.20
26	16+525	1 x 1.00
27	17+350	1 x 1.20
28	19+425	2 x 1.20
29	19+950	1 x 1.00
30	21+000	1 x 1.00
31	21+700	1 x 1.20
32	21+970	1 x 1.20
33	22+255	1 x 1.20
34	22+980	1 x 1.20
35	23+160	1 x 1.00
36	23+400	1 x 1.20
37	24+350	1 x 1.20
38	24+850	1 x 1.20
39	24+970	1 x 1.20
40	25+265	1 x 1.20
41	25+775	1 x 1.20
42	26+700	1 x 0.90
43	26+800	2 x 1.20
44	27+040	1 x 0.90
45	27+100	2 x 1.20
46	27+315	2 x 1.20
47	27+635	3 x 0.90
48	27+900	2 x 1.20
49	28+380	1 x 1.20
50	28+560	1 x 1.20
51	28+790	1 x 1.20
52	29+850	1 x 1.20
53	30+090	1 x 1.20
54	30+375	1 x 0.90
55	32+600	1 x 1.20
56	32+740	1 x 1.20
57	33+700	1 x 1.20
58	34+450	1 x 1.20
59	35+010	1 x 1.20

S. No.	Chainage (km.)	Span (m)
143	69+860	1 x 0.90
144	69+920	1 x 1.20
145	70+250	1 x 1.20
146	70+480	2 x 1.20
147	70+815	1 x 0.90
148	71+010	1 x 1.20
149	71+150	2 x 1.20
150	71+240	1 x 1.20
151	71+450	1 x 1.20
152	71+680	1 x 1.20
153	71+850	1 x 1.20
154	72+210	1 x 1.20
155	72+300	1 x 1.20
156	72+425	1 x 1.20
157	74+550	1 x 1.20
158	74+610	1 x 1.20
159	74+850	1 x 1.20
160	75+000	1 x 1.20
161	75+050	1 x 1.20
162	75+075	1 x 1.20
163	75+190	1 x 1.20
164	75+420	1 x 1.20
165	75+510	1 x 1.20
166	76+850	1 x 1.20
167	77+240	2 x 1.20
168	77+300	2 x 1.20
169	77+360	1 x 1.20
170	77+460	1 x 1.20
171	77+580	1 x 1.20
172	77+725	1 x 1.20
173	77+825	1 x 1.20
174	77+900	1 x 1.20
175	78+060	1 x 1.20
176	78+160	1 x 1.20
177	78+250	1 x 1.20
178	78+375	1 x 1.20
179	78+650	1 x 1.20
180	78+860	1 x 1.20
181	78+990	1 x 1.20
182	80+375	1 x 1.20

S. No.	Chainage (km.)	Span (m)	S. No.	Chainage (km.)	Span (m)
60	35+275	1 x 1.20	183	80+590	1 x 1.20
61	35+740	1 x 1.20	184	80+750	1 x 1.20
62	35+910	1 x 1.20	185	80+860	1 x 1.20
63	35+990	1 x 1.20	186	81+640	1 x 1.20
64	36+930	1 x 1.20	187	81+920	1 x 1.20
65	39+175	1 x 1.20	188	82+200	2 x 0.90
66	40+760	1 x 1.20	189	83+190	1 x 1.20
67	41+010	1 x 1.20	190	83+460	1 x 1.20
68	43+800	1 x 1.20	191	83+760	1 x 1.20
69	43+840	1 x 1.20	192	83+900	1 x 1.20
70	44+615	1 x 1.20	193	84+200	1 x 1.20
71	46+610	1 x 1.20	194	84+940	1 x 1.20
72	49+575	1 x 1.20	195	85+520	2 x 1.20
73	49+770	1 x 1.20	196	85+600	1 x 1.20
74	50+340	2 x 1.20	197	85+725	1 x 1.20
75	50+625	2 x 1.00	198	85+850	1 x 1.20
76	50+700	1 x 1.20	199	86+400	2 x 0.90
77	51+110	2 x 1.00	200	86+580	1 x 1.20
78	51+350	1 x 1.20	201	87+435	1 x 1.20
79	51+560	1 x 1.00	202	87+950	1 x 1.20
80	51+960	1 x 0.90	203	88+200	1 x 1.00
81	52+300	1 x 1.20	204	88+325	2 x 1.00
82	52+320	1 x 1.00	205	88+500	3 x 1.00
83	52+450	1 x 1.20	206	88+600	2 x 1.20
84	52+490	1 x 1.20	207	88+700	1 x 1.00
85	52+540	1 x 1.20	208	88+915	2 x 1.00
86	52+880	4 x 1.20	209	89+580	1 x 1.00
87	52+965	1 x 1.20	210	93+015	2 x 1.00
88	53+125	2 x 1.20	211	94+860	2 x 1.00
89	53+270	2 x 0.90	212	96+960	2 x 1.20
90	53+460	2 x 1.20	213	97+050	1 x 1.00
91	53+500	3 x 1.20	214	99+350	1 x 1.20
92	53710	1 x 1.20	215	99+550	1 x 1.00
93	53+800	2 x 1.00	216	99+650	1 x 1.00
94	54+010	2 x 0.90	217	99+750	1 x 1.00
95	54+100	2 x 1.00	218	100+210	1 x 1.00
96	54+400	2 x 1.20	219	100+400	1 x 1.00
97	54+450	1 x 1.20	220	100+620	1 x 1.00
98	54+515	2 x 1.00	221	100+950	1 x 1.20
99	54+610	2 x 1.20	222	101+050	1 x 0.90

S. No.	Chainage (km.)	Span (m)	S. No.	Chainage (km.)	Span (m)
100	54+700	1 x 1.20	223	102+585	2 x 1.20
101	54+870	3 x 1.20	224	103+575	2 x 1.20
102	54+990	1 x 0.90	225	104+240	2 x 1.00
103	55+260	3 x 1.20	226	104+400	1 x 1.00
104	55+550	1 x 1.00	227	104+600	1 x 1.20
105	55+660	4 x 0.90	228	105+650	2 x 1.00
106	55+850	2 x 0.90	229	109+575	1 x 1.20
107	56+000	3 x 0.90	230	110+025	1 x 1.20
108	56+220	3 x 0.90	231	112+700	1 x 1.20
109	56+360	2 x 0.90	232	113+160	2 x 1.00
110	56+450	3 x 1.00	233	113+400	1 x 1.00
111	56+600	1 x 0.90	234	114+470	2 x 1.00
112	56+690	2 x 1.20	235	115+040	1 x 1.20
113	56+860	1 x 1.20	236	115+615	1 x 1.00
114	56+950	1 x 1.20	237	116+290	1 x 1.00
115	57+070	2 x 1.20	238	116+450	1 x 1.00
116	57+590	2 x 1.20	239	117+350	1 x 1.20
117	57+700	3 x 0.90	240	118+385	1 x 1.00
118	57+980	1 x 0.90	241	119+300	1 x 1.00
119	58+240	1 x 0.90	242	119+560	1 x 1.00
120	58+350	1 x 0.90	243	120+650	1 x 1.00
121	58+550	1 x 0.90	244	121+385	1 x 1.20
122	59+660	2 x 0.90	245	122+150	1 x 1.20
123	60+440	1 x 0.90			

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.74+550

Km.75+510

Figure 4.4: Representative photos of Pipe Culverts

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULE

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	7%
2	Design Life (Years)	10 years for BT 15 years for Granular
3	Actual Traffic	7.8 MSA for 10 Years & 14.4 MSA for HS-1 3.5 MSA for 10 Years & 6.4 MSA for HS-2
4	Design Traffic (MSA)	10 MSA for HS-1 & HS-2 14.4 MSA for Granular
5	Surface course (BC)	40 mm
6	Binder course (DBM)	60 mm
7	Base course (WMM)	250 mm
8	Sub Base course (GSB)	230 mm

5.3 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Flexible Pavement Design Traffic Validation (TP-1)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	945	188	62	78	180	508	0.49	0.49	2	Actual
2017	1077	198	66	69	186	519	0.50	0.98	3	Actual
2018	1181	214	63	75	239	591	0.57	1.55	4	Actual
2019	1265	236	63	66	248	613	0.59	2.14	5	Actual
2020	1428	247	61	63	214	584	0.56	2.70	6	Actual
2021	1499	259	64	66	225	614	0.59	3.29	7	Projected
2022	1574	272	67	69	236	644	0.62	3.90	8	Projected
2023	1653	286	70	73	248	676	0.65	4.55	9	Projected
2024	1736	300	74	77	260	710	0.68	5.23	10	Projected
2025	1822	315	77	80	273	746	0.71	5.95	11	Projected
2026	1913	331	81	84	287	783	0.75	6.70	12	Projected
2027	2009	347	85	89	301	822	0.79	7.48	13	Projected
2028	2110	365	90	93	316	863	0.83	8.31	14	Projected
2029	2215	383	94	98	332	907	0.87	9.18	15	Projected

Table 5.3: Flexible Pavement Design Traffic Validation (TP-2)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	324	45	15	9	14	84	0.08	0.08	2	Actual
2017	792	116	36	20	27	199	0.19	0.27	3	Actual
2018	807	109	35	14	25	183	0.18	0.45	4	Actual
2019	829	116	35	13	80	244	0.23	0.68	5	Actual
2020	857	107	38	10	21	176	0.17	0.85	6	Actual
2021	899	113	40	11	22	185	0.18	1.03	7	Projected
2022	944	118	42	11	23	195	0.19	1.21	8	Projected
2023	992	124	44	12	24	204	0.20	1.41	9	Projected
2024	1041	130	46	12	26	214	0.21	1.61	10	Projected
2025	1093	137	48	13	27	225	0.22	1.83	11	Projected
2026	1148	144	51	14	28	236	0.23	2.06	12	Projected
2027	1205	151	53	14	30	248	0.24	2.29	13	Projected
2028	1266	159	56	15	31	261	0.25	2.54	14	Projected
2029	1329	166	59	16	33	274	0.26	2.81	15	Projected

Based on the above actual traffic, estimated MSA at 10 years and 15 years are 5.23, 9.18 of TP1 respectively. Similarly estimated MSA at 10 years and 15 years of TP2 are 1.61, 2.81 respectively.

Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

Details of Pavement design for Rigid Pavement are as follows:

Table 5.4: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	7 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	230
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB/CRM) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	605

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 10 MSA for a design life of 10 years for Bituminous layers (up to end of year 2024) and 14.4 MSA for 15 years for granular layers respectively (up to end of year 2029), whereas the actual traffic is 7.8 MSA and 14.4 MSA for HS-1 and 3.5 MSA and 6.4 MSA for HS-2 for 8 years and 15 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

Routine maintenance - Every year

Periodic Renewal for Flexible Pavement – Next Proposed Periodic Renewal on or before 2022.

Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction (as per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special publication SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC:SP- 88	Manual of Road Safety Audit

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good

		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

S Curve board at Km. 13+000

Speed Limit board at Km. 76+000

W Beam at approaches at Km.13+300

Road safety at the Head wall of Structure at 74+850

Right Turn board at Km. 76+000 **Left Turn board at Km. 75+510**

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are done for road users along the project road and the same is found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the operation and maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There are two toll Plazas on the project road at Km.31+000 and Km.111+950. Both Toll Plazas comprises of 6 lanes. Two lanes in each direction is operational and the third lane is used as bike lane and extra wide lane. The lane width in both the plazas is 3.20m. The width of islands provided is 1.8m. The single canopy is provided to cover the toll lanes. The lane is provided with tolling system from Rajdeep. Both Toll plazas are provided with G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment's

The equipment list was not made available at the toll plaza. But based on our visual observations we have listed down the equipment provided in the TMS.

Table 7.1: List of Tolling Equipment

S. No.	Description	Toll Plaza 1	Toll Plaza 2	Total
Lane and Booth Equipment				
1	RFID Readers	6	6	12
2	LPIC Cameras	6	6	12
3	Monitors	6	2	8
4	ICS Camera	6	6	12
5	Key Boards	6	6	12
6	PLC	6	6	12
7	Printers	4	4	8
8	Office Systems	2	1	3
9	Server	1	1	2
10	Office Printers	1	1	2
11	WIFI Routers	1	1	2
12	Barrier Gates	2	1	3
13	Fire wall	1	1	2
14	Switch	1	1	2
15	Booth Cam-1	1	1	2
16	Booth Cam-2	1	1	2
17	NVR	-	1	1
18	PTZ Cam-1	-	1	1
19	PTZ Cam-2	-	1	1

7.3 Control Room Equipment's

A server is provided in the control room for all plaza operations. Along with the server an three workstations are provided to manage the Audit and other purpose.

Table 7.2: Equipment provided at Control Room

S. No.	Description	Toll Plaza 1	Toll Plaza 2
Plaza room equipment			
1	TMS Server with monitor	1	1
2	Hard Disk	1	1
3	Joystick	1	1
4	PTZ Camera with pole	2	2
5	Incident Management Work Station	1	1
6	Intercom Master Unit	1	1
7	Computer	1	1
8	Printer	1	2
9	Scanner	1	1
10	42” TV	1	1
11	DVR	1	1
12	POS	1	1
13	Camera	1	1
UPS			
1	3 KVA	1	1
2	6 KVA	1	1
Generator			
1	62.5 KVA	1	1

7.4 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.3: List of Vehicles

S. No.	Vehicle Type	Toll Plaza 1	Toll Plaza 2
1	Patrol Vehicle	Tata Genio – 1 No TVS Bike – 1 No	TVS Bike – 1 No
2	Ambulance	Maruthi Van – 1 No	Maruthi Van – 1 No

Toll Plaza at 31+000

Toll Building at 31+000

Toll Plaza at 111+950

Figure 7.1: Representative Photographs of Toll Plazas

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

(A) Sarni toll plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr-Mar 2015-16	306322	60943	20158	25213	58261	470897
Apr-Mar 2016-17	392943	72099	24188	25124	68047	582401
Apr-Mar 2017-18	431063	78100	23165	27193	87311	646832
Apr-Mar 2018-19	461613	86128	22989	24218	90575	685523
Apr-Mar 2019-20	522599	90341	22184	23039	78317	736480
AACGR* (%)						**12.04%**

*AACGR- Annual Average Compound Growth Rate

(B) Parasia toll plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr-Mar 2015-16	104837	14738	4865	2824	4653	131917
Apr-Mar 2016-17	288992	42299	13090	7384	9763	361528
Apr-Mar 2017-18	294637	39725	12855	5109	9265	361591
Apr-Mar 2018-19	302706	42351	12906	4796	29019	391778
Apr-Mar 2019-20	313535	39268	13865	3745	7702	378115
AACGR* (%)						**30.12%**

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8-2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

(A) Sarni toll plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	265147	19177	73415	22120	22385	78047	480291
Toll Revenue collection in Rs.	9280145	1534191	6447050	3993740	4844000	33779840	59878966

(B) Parasia toll plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	169401	8239	30674	13483	3616	7624	233037
Toll Revenue collection in Rs.	5866790	659150	2684890	2385555	774265	3273160	15643810

The figures shown in Table 8-1 are Real time traffic data (AADT) on project road for the past five years and the growth rate is calculated to be 12.04% in TP-1 & 44.73% for TP-2. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8-2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5% even though the growth as per table 8-1 is >5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8-3.

Table 8.3: Projected traffic

(A) Sarni toll plaza (Km. 31+000)

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
	PCU Factor						1	1.5	3	3	4.5		
2020	779	201	61	61	214	537	779	302	182	184	962	1630	Actual
2021	818	211	64	64	225	564	818	317	191	193	1010	1711	Projected
2022	859	222	67	68	236	592	859	333	200	203	1061	1797	Projected
2023	902	233	70	71	248	622	902	349	210	213	1114	1887	Projected
2024	947	244	74	75	260	653	947	367	221	224	1170	1981	Projected
2025	994	257	77	78	273	685	994	385	232	235	1228	2080	Projected
2026	1044	270	81	82	287	719	1044	404	244	247	1289	2184	Projected
2027	1096	283	85	86	301	755	1096	425	256	259	1354	2293	Projected
2028	1151	297	90	91	316	793	1151	446	269	272	1422	2408	Projected
2029	1208	312	94	95	332	833	1208	468	282	285	1493	2528	Projected

(B) Parasia toll plaza (Km.111+950)

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
	PCU Factor						1	1.5	3	3	4.5		
2020	487	84	37	10	21	152	487	126	111	30	94	361	Actual
2021	511	88	39	10	22	159	511	132	116	31	99	379	Projected
2022	537	93	41	11	23	167	537	139	122	33	104	398	Projected
2023	563	97	43	11	24	176	563	146	128	34	109	417	Projected
2024	592	102	45	12	25	184	592	153	135	36	114	438	Projected
2025	621	107	47	13	27	194	621	161	141	38	120	460	Projected
2026	652	113	50	13	28	203	652	169	149	40	126	483	Projected
2027	685	118	52	14	29	214	685	177	156	42	132	507	Projected
2028	719	124	55	15	31	224	719	186	164	44	139	533	Projected
2029	755	130	57	15	32	235	755	196	172	46	146	559	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in table 8-4

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1	Toll plaza 2
Location	Sarni (Km. 31+000)	Parasia (Km.111+950)
4 lane length in km	0	0
2 lane length in km	50.000	72.000
Agreement Date	20.05.2013	01.09.2015
Appointed Date	07-04-2014	07-04-2014
Concession period	15	15
Commercial operation date (PCOD)	11-11-2015	11-11-2015
Concession End Date	06-Apr-29	09-Apr-29
Traffic study year	2020	2020
Vehicle Type	**AADT**	**AADT**
Car/Jeep/Van	779	487
2-axle Bus	201	84
LCV/LGV	61	37
2A-Truck	61	0
MAV (2A-6A)	214	10
Growth Rate (%)	5%	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 @ Km.31+000	Annual Revenue of TP2 @ Km.111+950	Total	Remarks
2019-20	598.790	156.438	755.228	Actual
2020-21	648.244	167.138	815.382	
2021-22	715.863	179.803	895.666	
2022-23	778.869	191.789	970.658	
2023-24	837.216	217.503	1054.719	
2024-25	907.873	233.366	1141.239	
2025-26	998.826	249.405	1248.232	
2026-27	1078.940	267.095	1346.035	
2027-28	1158.106	299.347	1457.453	
2028-29	1267.038	319.374	1586.411	
2029-30	22.473	5.612	28.085	6 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.
- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behaviour of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution.
- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments.

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

- Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
- Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
- carrying out preventive and periodic maintenance of the Project road;
- undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- Functioning of the lighting system;
- Functioning of the Patrolling System
- Functioning of rescue and medical aid services
- Ambulance as and when required

- Functioning of the Project Facilities
- Administrative, Operational and Maintenance Base Camp
- Truck Lay byes
- Pickup Bus stops / Bus Bays
- Protection of the environment and provision of equipment and materials therefore;
- Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
- Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are 2+1 lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance:

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table -1: Schedule and status of for Periodic Maintenance

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2022	Executed
2	2nd Periodic Maintenance	2028	scheduled
3	2nd Periodic Maintenance	2029	scheduled

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per Programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction
c. Construction of Diversions
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Oct 2020. As per Schedule K of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage

conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Oct 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.1: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expanses	Total cost per year
2020	0.780	0.322		1.73	2.83
2021	0.803	0.332		1.78	2.91
2022	0.827	0.342	9.69	1.83	12.69
2023	0.852	0.352	9.69	1.89	12.78
2024	0.878	0.363		1.94	3.18
2025	0.904	0.374		2.00	3.28
2026	0.931	0.385		2.06	3.38
2027	0.959	0.396		2.12	3.48
2028	0.988	0.408	6.82	2.19	10.40
2029	1.018	0.421	16.30	2.25	19.99
2030	0.017	0.007		0.04	0.06
Total	**8.96**	**3.70**	**42.49**	**19.84**	**74.99**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D of the CA
- operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA)
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

Provide performance security to the Authority

- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of the CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the CA. Provisional Completion Certificate given in **ANNEXURE 7**.

10.8 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8**

-

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope, proposals were initiated during construction period and consented by the MPRDC. Details are given in **ANNEXURE 10**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents.
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any un authorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of the CA (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8):

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y of the CA, the sum of Rs 15.48 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	Ist Annuity	15-Dec-15
2	2nd Annuity	12-May-16
3	3rd Annuity	23-Nov-16
4	4th Annuity	25-May-17
5	5th Annuity	5-Dec-17
6	6th Annuity	4-Jun-18
7	7th Annuity	29-Nov-18
8	8th Annuity	28-May-19
9	9th Annuity	14-Nov-19
10	10th Annuity	22-May-20
11	11th Annuity	12-Nov-20
12	12th Annuity	15-Dec-15
13	13th Annuity	12-May-16

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Accordingly, the following policies being maintained by the concessionaire copies of the same are provided in **Annexure-9**.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks.

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Policy
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001990	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Employees Compensation Insurance Policy	HDFC Ergo General Insurance Company	3114203388063900000	20.05.2020	19.05.2021	Employees Insurance of DBL & Sub-contractor engaged in DBL

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. Drainage system is effective along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed is 12.04% in TP-1 & 44.73% for TP-2, whereas 5% growth as standard practice is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Km.31+000 and 111+950 is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per site requirement. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively. Based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- 1st Major maintenance (MM) /Periodic maintenance was scheduled in the year 2022 and 2nd MM is scheduled in 2028 & 2029.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000								G		P+E	Fair	Fair	LD	F	
1+000	2+000								G		P+E	Fair	Fair	LD	F	
2+000	3+000								G	4	E	Fair	Fair	ULD	PF	
3+000	4+000								G		P+E	Fair	Fair	LD	F	
4+000	5+000								G	3	E	Fair	Fair	ULD	PF	
5+000	6+000								G	3	E	Fair	Fair	ULD	PF	
6+000	7+000								G		E	Fair	Fair	ULD	PF	
7+000	8+000								G	4	E	Fair	Fair	ULD	PF	
8+000	9+000								G	4	E	Poor	Fair	ULD	PF	
9+000	10+000								G		E	Fair	Fair	ULD	PF	
10+000	11+000								G		E	Fair	Fair	ULD	PF	
11+000	12+000								G		E	Fair	Fair	ULD	PF	
12+000	13+000								G		E	Fair	Fair	ULD	PF	
13+000	14+000								G	4	E	Fair	Fair	ULD	PF	
14+000	15+000								G	4	E	Fair	Fair	ULD	PF	
15+000	16+000								G		E	Fair	Fair	ULD	PF	
16+000	17+000								G	4	E	Fair	Fair	ULD	PF	
17+000	18+000								G	3	E	Fair	Fair	ULD	PF	
18+000	19+000								G	3	E	Fair	Fair	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
19+000	20+000								G		E	Fair	Fair	ULD	PF	
20+000	21+000								G		P+E	Fair	Fair	LD	F	
21+000	22+000								G		P+E	Fair	Fair	LD	F	
22+000	23+000								G	4	E	Fair	Fair	ULD	PF	
23+000	24+000								G	3	E	Fair	Fair	ULD	PF	
24+000	25+000								G	4	E	Fair	Fair	ULD	PF	
25+000	26+000								G	3	E	Fair	Fair	ULD	PF	
26+000	27+000								G	4	E	Fair	Fair	ULD	PF	
27+000	28+000								G		E	Fair	Fair	ULD	PF	
28+000	29+000								G	4	E	Fair	Fair	ULD	PF	
29+000	30+000								G		E	Fair	Fair	ULD	PF	
30+000	31+000								G	3	E	Fair	Fair	ULD	PF	
31+000	32+000								G	3	E	Fair	Fair	ULD	PF	
32+000	33+000								G	3	E	Fair	Fair	ULD	PF	
33+000	34+000								G		E	Fair	Fair	ULD	PF	
34+000	35+000								G		E	Fair	Fair	ULD	PF	
35+000	36+000								G		E	Fair	Fair	ULD	PF	
36+000	37+000								G	3	E	Fair	Fair	ULD	PF	
37+000	38+000								G		P+E	Fair	Fair	LD	PF	
38+000	39+000								G		P+E	Fair	Fair	LD	PF	
39+000	40+000								G		P+E	Fair	Fair	LD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
40+000	41+000								G		P+E	Fair	Fair	LD	F	
41+000	42+000								G	4	E	Fair	Fair	ULD	PF	
42+000	43+000								G	3	E	Fair	Fair	ULD	PF	
43+000	44+000								G		E	Fair	Fair	ULD	PF	
44+000	45+000								G	4	E	poor	Fair	ULD	PF	
45+000	46+000								G		E	Fair	Fair	ULD	PF	
46+000	47+000								G		P+E	Fair	Fair	LD	F	
47+000	48+000								G		P+E	Fair	Fair	LD	F	
48+000	49+000								G		P+E	Fair	Fair	LD	F	
49+000	50+000								G		E	Fair	Fair	ULD	PF	
50+000	51+000								G	3	E	Fair	Fair	ULD	PF	
51+000	52+000								G		E	Fair	Fair	ULD	PF	
52+000	53+000								G	3	E	Fair	Fair	ULD	PF	
53+000	54+000								G	3	E	Fair	Fair	ULD	PF	
54+000	55+000								G	4	E	Fair	Fair	ULD	PF	
55+000	56+000								G	3	E	Fair	Fair	ULD	PF	
56+000	57+000								G	4	E	Fair	Fair	ULD	PF	
57+000	58+000								G	4	E	Fair	Fair	ULD	PF	
58+000	59+000								G		E	Fair	Fair	ULD	PF	
59+000	60+000								G	3	E	Fair	Fair	ULD	PF	
60+000	61+000								G	4	E	Fair	Fair	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
61+000	62+000								G	3	E	Fair	Fair	ULD	PF	
62+000	63+000								G	3	E	Fair	Fair	ULD	PF	
63+000	64+000								G	3	E	Fair	Fair	ULD	PF	
64+000	65+000								G		E	Fair	Fair	ULD	PF	
65+000	66+000								G	4	E	Fair	Fair	ULD	PF	
66+000	67+000								G	3	E	Fair	Fair	ULD	PF	
67+000	68+000								G	3	E	Fair	Fair	ULD	PF	
68+000	69+000								G	4	E	Fair	Fair	ULD	PF	
69+000	70+000								G		P+E	poor	Fair	LD	F	
70+000	71+000								G		P+E	Fair	Fair	LD	F	
71+000	72+000								G		E	Fair	Fair	ULD	PF	
72+000	73+000								G	4	E	poor	Fair	ULD	PF	
73+000	74+000								G	4	E	Fair	Fair	ULD	PF	
74+000	75+000								G		E	Fair	Fair	ULD	PF	
75+000	76+000								G		E	Fair	Fair	ULD	PF	
76+000	77+000								G	3	E	Fair	Fair	ULD	PF	
77+000	78+000								G	3	E	Fair	Fair	ULD	PF	
78+000	79+000								G		E	Fair	Fair	ULD	PF	
79+000	80+000								G		E	Fair	Fair	ULD	PF	
80+000	81+000								G	4	E	poor	Fair	ULD	PF	
81+000	82+000								G	3	E	Fair	Fair	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
82+000	83+000								G		E	Fair	Fair	ULD	PF	
83+000	84+000								G	3	E	Fair	Fair	ULD	PF	
84+000	85+000								G		E	Fair	Fair	ULD	PF	
85+000	86+000								G		P+E	Fair	Fair	LD	F	
86+000	87+000								G		P+E	Fair	Fair	LD	F	
87+000	88+000								G		P+E	Fair	Fair	LD	F	
88+000	89+000								G		P+E	Fair	Fair	LD	F	
89+000	90+000								G	3	E	Fair	Fair	ULD	PF	
90+000	91+000								G		E	Poor	Fair	ULD	PF	
91+000	92+000								G		P+E	Fair	Fair	LD	F	
92+000	93+000								G		P+E	Fair	Fair	LD	F	
93+000	94+000								G		P+E	Fair	Fair	LD	F	
94+000	95+000								G		P+E	Fair	Fair	LD	F	
95+000	96+000								G		P+E	Fair	Fair	LD	F	
96+000	97+000								G		P+E	Fair	Fair	LD	F	
97+000	98+000								G		P+E	Fair	Fair	LD	F	
98+000	99+000								G	3	E	Fair	Fair	ULD	PF	
99+000	100+000								G		P+E	Fair	Fair	LD	F	
100+000	101+000								G		P+E	Fair	Fair	LD	F	
101+000	102+000								G		P+E	Fair	Fair	LD	F	
102+000	103+000								G		P+E	Fair	Fair	LD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
103+000	104+000								G		P+E	Fair	Fair	LD	F	
104+000	105+000								G		P+E	Fair	Fair	LD	F	
105+000	106+000								G	3	E	Fair	Fair	ULD	PF	
106+000	107+000								G		E	Fair	Fair	ULD	PF	
107+000	108+000								G		P+E	Fair	Fair	LD	F	
108+000	109+000								G		P+E	Fair	Fair	LD	F	
109+000	110+000								G		P+E	Fair	Fair	LD	F	
110+000	111+000								G		P+E	Fair	Fair	LD	F	
111+000	112+000								G		P+E	Fair	Fair	LD	F	
112+000	113+000								G		P+E	Fair	Fair	LD	F	
113+000	114+000								G		E	Fair	Fair	ULD	PF	
114+000	115+000								G		P+E	Fair	Fair	LD	F	
115+000	116+000								G		P+E	Fair	Fair	LD	F	
116+000	117+000								G		P+E	Fair	Fair	LD	F	
117+000	118+000								G	3	E	Fair	Fair	ULD	PF	
118+000	119+000								G		P+E	Fair	Fair	LD	F	
119+000	120+000								G		P+E	Fair	Fair	LD	F	
120+000	121+000								G		P+E	Fair	Fair	LD	F	
121+000	122+000								G	3	E	Fair	Fair	ULD	PF	
122+000	123+000								G		E	Fair	Fair	ULD	PF	
123+000	124+100								G		E	Fair	Fair	ULD	PF	

Annexure 2: Condition of Structures

S. No.	Chainage (Km.)	Type of Structure	Sub structure	Super structure	Crash barrier	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	4+300	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
2	6+380	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
3	11+050	Minor Bridge	Good	Good	Fair	Good	Good	Fair	-	Fair
4	12+060	Minor Bridge	Fair	Good	Good	Good	Good	Fair	-	Fair
5	12+400	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
6	12+670	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
7	13+000	Minor Bridge	Good	Fair	-	Good	Good	Fair	-	Fair
8	13+850	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
9	14+050	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
10	14+360	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
11	14+700	Major Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
12	17+000	Major Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
13	17+860	Major Bridge	Good	Good	-	Good	Good	-	-	Fair
14	18+610	Minor Bridge	Good	Fair	Good	Good	Good	Fair	-	Fair
15	20+465	Minor Bridge	Fair	Good	Good	Good	Good	Fair	-	Fair
16	31+000	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
17	31+950	Major Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
18	33+000	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
19	41+400	Minor Bridge	Fair	Good	Good	Good	Good	Fair	-	Fair
20	46+860	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
21	50+080	Minor Bridge	Good	Fair	Good	Good	Good	Fair	-	Fair
22	50+850	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
23	58+850	Major Bridge	Good	Good	-	Good	Good	Fair	-	Fair
24	63+500	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair

S. No.	Chainage (Km.)	Type of Structure	Sub structure	Super structure	Crash barrier	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
25	64+150	Minor Bridge	Good	Fair	Good	Good	Good	Fair	-	Fair
26	65+300	Minor Bridge	Good	Good	Fair	Good	Good	Fair	-	Fair
27	66+160	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
28	66+375	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
29	67+750	Major Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
30	69+600	Major Bridge	Good	Good	-	Good	Good	Fair	-	Fair
31	72+850	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
32	75+950	Major Bridge	Good	Good	-	Good	Good	Fair	-	Fair
33	81+500	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
34	83+300	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
35	86+950	Major Bridge	Good	Good	Good	Good	Good	-	-	Fair
36	89+100	Minor Bridge	Fair	Good	-	Good	Good	Fair	-	Fair
37	90+050	Minor Bridge	Good	Fair	Good	Good	Good	Fair	-	Fair
38	92+150	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
39	93+530	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
40	99+100	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
41	99+850	Minor Bridge	Good	Good	-	Good	Good	Fair	-	Fair
42	101+225	Minor Bridge	Fair	Good	-	Good	Good	Fair	-	Fair
43	107+010	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair
44	115+150	Minor Bridge	Good	Fair	Good	Good	Good	Fair	-	Fair
45	116+241	Minor Bridge	Good	Good	Good	Good	Good	Fair	-	Fair

Annexure 3: Condition of Box/Slab/Pipe Culverts

Condition of Box/Slab Culverts

S. No.	Chainage (Km.)	Box/Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall
1	3+360	Good	Fair	Fair	Fair	Fair
2	4+780	Good	Fair	Fair	-	Fair
3	7+530	Good	Fair	Fair	Fair	Fair
4	23+199	Good	Fair	Fair	Fair	Fair
5	30+770	Good	Fair	Fair	Fair	Fair
6	32+285	Good	Fair	Fair	Fair	Fair
7	32+500	Good	Fair	Fair	Fair	Fair
8	33+250	Good	Fair	Fair	Fair	Fair
9	33+355	Good	Fair	Fair	Fair	Fair
10	33+890	Good	Fair	Fair	Fair	Fair
11	34+000	Good	Fair	Fair	Fair	Fair
12	34+600	Good	Fair	Fair	Fair	Fair
13	34+800	Good	Fair	Fair	Fair	Fair
14	35+515	Good	Fair	Fair	Fair	Fair
15	36+200	Good	Fair	Fair	Fair	Fair
16	37+040	Good	Fair	Fair	Fair	Fair
17	38+825	Good	Fair	Fair	Fair	Fair
18	39+710	Good	Fair	Fair	Fair	Fair
19	40+190	Good	Fair	Fair	Fair	Fair
20	41+180	Good	Fair	Fair	Fair	Fair
21	47+650	Good	Fair	Fair	Fair	Fair
22	47+680	Good	Fair	Fair	Fair	Fair
23	47+925	Good	Fair	Fair	Fair	Fair
24	48+315	Good	Fair	Fair	Fair	Fair
25	49+015	Good	Fair	Fair	Fair	Fair
26	49+265	Good	Fair	Fair	Fair	Fair
27	72+275	Good	Fair	Fair	Fair	Fair
28	76+200	Good	Fair	-	Fair	Fair
29	84+300	Good	Fair	Fair	Fair	Fair
30	84+690	Good	Fair	Fair	Fair	Fair
31	90+785	Good	Fair	Fair	Fair	Fair
32	91+375	Good	Fair	Fair	Fair	Fair
33	96+565	Good	Fair	Fair	Fair	Fair
34	97+660	Good	Fair	Fair	Fair	Fair
35	117+475	Good	Fair	Fair	Fair	Fair
36	120+010	Good	Fair	Fair	Fair	Fair

Condition of Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+150	Good	Good	Fair	Fair
2	1+770	Good	Good	Fair	Fair
3	2+019	Good	Good	Fair	Fair
4	2+625	Good	Good	Fair	Fair
5	2+876	Good	Good	Fair	Fair
6	3+500	Good	Good	Fair	Fair
7	5+008	Good	Good	Fair	Fair
8	5+793	Good	Good	Fair	Fair
9	6+650	Good	Good	Fair	Fair
10	6+770	Good	Good	Fair	Fair
11	6+885	Good	Good	Fair	Fair
12	6+920	Good	Good	Fair	Fair
13	7+210	Good	Good	Fair	Fair
14	8+014	Good	Good	Fair	Fair
15	8+130	Good	Good	Fair	Fair
16	8+420	Good	Good	Fair	Fair
17	10+750	Good	Good	Fair	Fair
18	10+825	Good	Good	Fair	Fair
19	11+250	Good	Good	Fair	Fair
20	11+390	Good	Good	Fair	Fair
21	11+425	Good	Good	Fair	Fair
22	11+586	Good	Good	Fair	Fair
23	15+540	Good	Good	Fair	Fair
24	15+665	Good	Good	Fair	Fair
25	16+435	Good	Good	Fair	Fair
26	16+525	Good	Good	Fair	Fair
27	17+350	Good	Good	Fair	Fair
28	19+425	Good	Good	Fair	Fair
29	19+950	Good	Good	Fair	Fair
30	21+000	Good	Good	Fair	Fair
31	21+700	Good	Good	Fair	Fair
32	21+970	Good	Good	Fair	Fair
33	22+255	Good	Good	Fair	Fair
34	22+980	Good	Good	Fair	Fair
35	23+160	Good	Good	Fair	Fair
36	23+400	Good	Good	Fair	Fair
37	24+350	Good	Good	Fair	Fair
38	24+850	Good	Good	Fair	Fair
39	24+970	Good	Good	Fair	Fair
40	25+265	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
41	25+775	Good	Good	Fair	Fair
42	26+700	Good	Good	Fair	Fair
43	26+800	Good	Good	Fair	Fair
44	27+040	Good	Good	Fair	Fair
45	27+100	Good	Good	Fair	Fair
46	27+315	Good	Good	Fair	Fair
47	27+635	Good	Good	Fair	Fair
48	27+900	Good	Good	Fair	Fair
49	28+380	Good	Good	Fair	Fair
50	28+560	Good	Good	Fair	Fair
51	28+790	Good	Good	Fair	Fair
52	29+850	Good	Good	Fair	Fair
53	30+090	Good	Good	Fair	Fair
54	30+375	Good	Good	Fair	Fair
55	32+600	Good	Good	Fair	Fair
56	32+740	Good	Good	Fair	Fair
57	33+700	Good	Good	Fair	Fair
58	34+450	Good	Good	Fair	Fair
59	35+010	Good	Good	Fair	Fair
60	35+275	Good	Good	Fair	Fair
61	35+740	Good	Good	Fair	Fair
62	35+910	Good	Good	Fair	Fair
63	35+990	Good	Good	Fair	Fair
64	36+930	Good	Good	Fair	Fair
65	39+175	Good	Good	Fair	Fair
66	40+760	Good	Good	Fair	Fair
67	41+010	Good	Good	Fair	Fair
68	43+800	Good	Good	Fair	Fair
69	43+840	Good	Good	Fair	Fair
70	44+615	Good	Good	Fair	Fair
71	46+610	Good	Good	Fair	Fair
72	49+575	Good	Good	Fair	Fair
73	49+770	Good	Good	Fair	Fair
74	50+340	Good	Good	Fair	Fair
75	50+625	Good	Good	Fair	Fair
76	50+700	Good	Good	Fair	Fair
77	51+110	Good	Good	Fair	Fair
78	51+350	Good	Good	Fair	Fair
79	51+560	Good	Good	Fair	Fair
80	51+960	Good	Good	Fair	Fair
81	52+300	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
82	52+320	Good	Good	Fair	Fair
83	52+450	Good	Good	Fair	Fair
84	52+490	Good	Good	Fair	Fair
85	52+540	Good	Good	Fair	Fair
86	52+880	Good	Good	Fair	Fair
87	52+965	Good	Good	Fair	Fair
88	53+125	Good	Good	Fair	Fair
89	53+270	Good	Good	Fair	Fair
90	53+460	Good	Good	Fair	Fair
91	53+500	Good	Good	Fair	Fair
92	53710	Good	Good	Fair	Fair
93	53+800	Good	Good	Fair	Fair
94	54+010	Good	Good	Fair	Fair
95	54+100	Good	Good	Fair	Fair
96	54+400	Good	Good	Fair	Fair
97	54+450	Good	Good	Fair	Fair
98	54+515	Good	Good	Fair	Fair
99	54+610	Good	Good	Fair	Fair
100	54+700	Good	Good	Fair	Fair
101	54+870	Good	Good	Fair	Fair
102	54+990	Good	Good	Fair	Fair
103	55+260	Good	Good	Fair	Fair
104	55+550	Good	Good	Fair	Fair
105	55+660	Good	Good	Fair	Fair
106	55+850	Good	Good	Fair	Fair
107	56+000	Good	Good	Fair	Fair
108	56+220	Good	Good	Fair	Fair
109	56+360	Good	Good	Fair	Fair
110	56+450	Good	Good	Fair	Fair
111	56+600	Good	Good	Fair	Fair
112	56+690	Good	Good	Fair	Fair
113	56+860	Good	Good	Fair	Fair
114	56+950	Good	Good	Fair	Fair
115	57+070	Good	Good	Fair	Fair
116	57+590	Good	Good	Fair	Fair
117	57+700	Good	Good	Fair	Fair
118	57+980	Good	Good	Fair	Fair
119	58+240	Good	Good	Fair	Fair
120	58+350	Good	Good	Fair	Fair
121	58+550	Good	Good	Fair	Fair
122	59+660	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
123	60+440	Good	Good	Fair	Fair
124	60+540	Good	Good	Fair	Fair
125	60+990	Good	Good	Fair	Fair
126	61+090	Good	Good	Fair	Fair
127	61+230	Good	Good	Fair	Fair
128	61+615	Good	Good	Fair	Fair
129	62+360	Good	Good	Fair	Fair
130	62+750	Good	Good	Fair	Fair
131	63+120	Good	Good	Fair	Fair
132	64+040	Good	Good	Fair	Fair
133	65+000	Good	Good	Fair	Fair
134	65+070	Good	Good	Fair	Fair
135	66+900	Good	Good	Fair	Fair
136	67+310	Good	Good	Fair	Fair
137	67+450	Good	Good	Fair	Fair
138	67+550	Good	Good	Fair	Fair
139	67+640	Good	Good	Fair	Fair
140	68+050	Good	Good	Fair	Fair
141	69+165	Good	Good	Fair	Fair
142	69+500	Good	Good	Fair	Fair
143	69+860	Good	Good	Fair	Fair
144	69+920	Good	Good	Fair	Fair
145	70+250	Good	Good	Fair	Fair
146	70+480	Good	Good	Fair	Fair
147	70+815	Good	Good	Fair	Fair
148	71+010	Good	Good	Fair	Fair
149	71+150	Good	Good	Fair	Fair
150	71+240	Good	Good	Fair	Fair
151	71+450	Good	Good	Fair	Fair
152	71+680	Good	Good	Fair	Fair
153	71+850	Good	Good	Fair	Fair
154	72+210	Good	Good	Fair	Fair
155	72+300	Good	Good	Fair	Fair
156	72+425	Good	Good	Fair	Fair
157	74+550	Good	Good	Fair	Fair
158	74+610	Good	Good	Fair	Fair
159	74+850	Good	Good	Fair	Fair
160	75+000	Good	Good	Fair	Fair
161	75+050	Good	Good	Fair	Fair
162	75+075	Good	Good	Fair	Fair
163	75+190	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
164	75+420	Good	Good	Fair	Fair
165	75+510	Good	Good	Fair	Fair
166	76+850	Good	Good	Fair	Fair
167	77+240	Good	Good	Fair	Fair
168	77+300	Good	Good	Fair	Fair
169	77+360	Good	Good	Fair	Fair
170	77+460	Good	Good	Fair	Fair
171	77+580	Good	Good	Fair	Fair
172	77+725	Good	Good	Fair	Fair
173	77+825	Good	Good	Fair	Fair
174	77+900	Good	Good	Fair	Fair
175	78+060	Good	Good	Fair	Fair
176	78+160	Good	Good	Fair	Fair
177	78+250	Good	Good	Fair	Fair
178	78+375	Good	Good	Fair	Fair
179	78+650	Good	Good	Fair	Fair
180	78+860	Good	Good	Fair	Fair
181	78+990	Good	Good	Fair	Fair
182	80+375	Good	Good	Fair	Fair
183	80+590	Good	Good	Fair	Fair
184	80+750	Good	Good	Fair	Fair
185	80+860	Good	Good	Fair	Fair
186	81+640	Good	Good	Fair	Fair
187	81+920	Good	Good	Fair	Fair
188	82+200	Good	Good	Fair	Fair
189	83+190	Good	Good	Fair	Fair
190	83+460	Good	Good	Fair	Fair
191	83+760	Good	Good	Fair	Fair
192	83+900	Good	Good	Fair	Fair
193	84+200	Good	Good	Fair	Fair
194	84+940	Good	Good	Fair	Fair
195	85+520	Good	Good	Fair	Fair
196	85+600	Good	Good	Fair	Fair
197	85+725	Good	Good	Fair	Fair
198	85+850	Good	Good	Fair	Fair
199	86+400	Good	Good	Fair	Fair
200	86+580	Good	Good	Fair	Fair
201	87+435	Good	Good	Fair	Fair
202	87+950	Good	Good	Fair	Fair
203	88+200	Good	Good	Fair	Fair
204	88+325	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
205	88+500	Good	Good	Fair	Fair
206	88+600	Good	Good	Fair	Fair
207	88+700	Good	Good	Fair	Fair
208	88+915	Good	Good	Fair	Fair
209	89+580	Good	Good	Fair	Fair
210	93+015	Good	Good	Fair	Fair
211	94+860	Good	Good	Fair	Fair
212	96+960	Good	Good	Fair	Fair
213	97+050	Good	Good	Fair	Fair
214	99+350	Good	Good	Fair	Fair
215	99+550	Good	Good	Fair	Fair
216	99+650	Good	Good	Fair	Fair
217	99+750	Good	Good	Fair	Fair
218	100+210	Good	Good	Fair	Fair
219	100+400	Good	Good	Fair	Fair
220	100+620	Good	Good	Fair	Fair
221	100+950	Good	Good	Fair	Fair
222	101+050	Good	Good	Fair	Fair
223	102+585	Good	Good	Fair	Fair
224	103+575	Good	Good	Fair	Fair
225	104+240	Good	Good	Fair	Fair
226	104+400	Good	Good	Fair	Fair
227	104+600	Good	Good	Fair	Fair
228	105+650	Good	Good	Fair	Fair
229	109+575	Good	Good	Fair	Fair
230	110+025	Good	Good	Fair	Fair
231	112+700	Good	Good	Fair	Fair
232	113+160	Good	Good	Fair	Fair
233	113+400	Good	Good	Fair	Fair
234	114+470	Good	Good	Fair	Fair
235	115+040	Good	Good	Fair	Fair
236	115+615	Good	Good	Fair	Fair
237	116+290	Good	Good	Fair	Fair
238	116+450	Good	Good	Fair	Fair
239	117+350	Good	Good	Fair	Fair
240	118+385	Good	Good	Fair	Fair
241	119+300	Good	Good	Fair	Fair
242	119+560	Good	Good	Fair	Fair
243	120+650	Good	Good	Fair	Fair
244	121+385	Good	Good	Fair	Fair
245	122+150	Good	Good	Fair	Fair

Annexure 4: Toll Revenue Calculations

Toll Plaza-I & II:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT)**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)	Traffic (AADT)
	Km.31+000	Km.111+950
Car/Taxi/Van	779	487
LCV	201	84
Bus	61	37
Truck	61	10
MAV	214	21

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Km.31+000			
Car/Taxi/Van	93%	7%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%
Km.111+950			
Car/Taxi/Van	95%	5%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates :**

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Km.31+000	Km.111+950
Car/Taxi/Van	35	35
LCV	90	85
Bus	180	170
Truck	215	210
MAV	430	420

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	9280145	1534191	6447050	3993740	4844000	33779840	59878966	598.790	598.790
2020-21	9744152	1711582	6937718	4412940	5288456	36729593	64824441	648.244	1247.034
2021-22	11692983	1797161	7689304	4755524	5799674	39851608	71586253	715.863	1962.897
2022-23	12277632	1998020	8498704	5249366	6219225	43643939	77886886	778.869	2741.765
2023-24	12891513	2214472	8923639	5646270	6802277	47243439	83721610	837.216	3578.982
2024-25	13536089	2325196	9838312	6069740	7428086	51589835	90787259	907.873	4486.854
2025-26	15989505	2569953	10822143	6669656	8099471	55731904	99882633	998.826	5485.680
2026-27	16788981	2698451	11879762	7158764	8661934	60706107	107893998	1078.940	6564.620
2027-28	17628430	2975042	12473750	7843515	9425759	65464153	115810649	1158.106	7722.727
2028-29	20566501	3272546	13666891	8407268	10244312	70546238	126703758	1267.038	8989.765
2029-30	21594826	3436174	14948162	9187943	10938842	76605979	2247319	22.473	9012.238

Toll Plaza-2 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	5866790	659150	2684890	2385555	774265	3273160	15643810	156.44	156.438
2020-21	6225487	735364	2898693	2548287	835296	3470638	16713765	167.138	323.576
2021-22	6536761	772132	3212718	2750026	896994	3811718	17980350	179.803	503.379
2022-23	6863599	858430	3373354	2965569	983703	4134248	19178903	191.789	695.168
2023-24	8236319	951426	3728444	3277734	1076841	4479502	21750266	217.503	912.671
2024-25	8648135	998997	4110609	3527661	1153759	4897434	23336596	233.366	1146.037
2025-26	9080542	1104155	4316140	3884730	1259904	5295048	24940518	249.405	1395.442
2026-27	9534569	1159363	4747754	4173826	1373780	5720179	26709470	267.095	1662.537
2027-28	11262709	1278197	5211739	4482120	1469182	6230718	29934665	299.347	1961.883
2028-29	11825845	1406017	5472326	4915391	1598737	6719072	31937388	319.374	2281.257
2029-30	12417137	1476318	5995766	5270973	1737574	7240684	561180	5.612	2286.869

Toll Plaza-1&2 Total Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	15146935	2193341	9131940	6379295	5618265	37053000	75522776	755.228	755.228
2020-21	15969639	2446946	9836411	6961227	6123752	40200231	81538206	815.382	1570.610
2021-22	18229744	2569293	10902022	7505550	6696668	43663326	89566603	895.666	2466.276
2022-23	19141231	2856450	11872058	8214935	7202928	47778187	97065789	970.658	3436.934
2023-24	21127832	3165898	12652083	8924004	7879118	51722941	105471876	1054.719	4491.652
2024-25	22184224	3324193	13948922	9597401	8581845	56487270	114123855	1141.239	5632.891
2025-26	25070047	3674108	15138283	10554386	9359375	61026952	124823151	1248.232	6881.123
2026-27	26323549	3857814	16627516	11332590	10035715	66426286	134603469	1346.035	8227.157
2027-28	28891139	4253240	17685489	12325635	10894941	71694871	145745315	1457.453	9684.610
2028-29	32392346	4678564	19139217	13322659	11843049	77265310	158641146	1586.411	11271.022
2029-30	34011963	4912492	20943928	14458916	12676416	83846664	2808499	28.085	11299.107

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	119.416	12	4	350	2,006,189	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	km	27.51	24	4	350	924,336	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	27.51	52	1	1939	2,773,778	01 Nos of Labour
4	Watering in Avenue plants	Once in Week	Km	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	27.51	12	0	21000	-	02 Nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km	59.708	2	5	350	208,978	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	281	2	2	650	730,600	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	119.416	4	2	350	334,365	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	22	6	2	350	92,400	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	4.00	6	60	350	504,000	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	36	2	2	350	50,400	02 Nos of Labour for removal of vegetation/Structure
								7,625,046	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	10000	10,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	5.3	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	5.3	12	0	12000	3,150	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	5.3	12	0	2500	10,500	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1		-	
9	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	5000/month
								83,650	
1	Patrolling vehicle	Monthly	Nos	12		1	10000	10000	
2	Ambulance	Monthly	Nos	12		2	10000	20000	
3	Tow away trucks and Crane	Monthly	Nos	12			5000	0	
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								90,000	
								7,798,696.00	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	2909	516	1,501,044	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	1	1	600	168	100,800	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1791.24	225	1,209,087	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	119.42	4	30	2250	270,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	0.00	4000	-	Considered 1% of the total volume
	Total amount for 1 Year							**3,222,931**	

Operational Expenses Statement

S. No.	PARTICULARS	Amount
1	Man Power	₹ 7,368,000
2	Fuel for Generator & Vehicles	₹ 9,456,000
3	Electricity	₹ 330,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 49,563
6	Refurbishment of Toll Plaza Equipment	₹ 60,000
	Total Amount	₹ 17,273,563

Summary of Major Maintenance Cost

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2022	18,69,28,904	1.20	3.0%	19,36,58,345	19.37
2nd Major Maitenance - Highways	01-04-2028	5,60,78,671	7.20	3.0%	6,81,91,664	6.82
2nd Major Maitenance - Highways	01-04-2029	13,08,50,233	8.20	3.0%	16,30,39,390	16.30
				Total	**₹ 42,48,89,400**	**42.49**

Major Maintenance BOQ

BOQ Item No.	Description	Unit	1st Cycle			2nd Cycle		
			Quantity	Rate	Amount	Quantity	Rate	Amount
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.							
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	9,60,442.00	14.00	1,34,46,188	9,60,442.00	14.00	1,34,46,188
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum		7,480.00			7,480.00	
	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	12,005.53	6,800.00	8,16,37,570	12,005.53	6,800.00	8,16,37,570
	Micro Surfacing	Sqm	4,80,221.00	160.00	7,68,35,360	4,80,221.00	160.00	7,68,35,360
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS		250.00			250.00	
4	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm		130.00			130.00	

	Total				**17,19,19,118**			**17,19,19,118**
	Junctions, Traffic Signs Marking and Other Appurtenances							
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt		380.00			380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	29,088.73	516.00	1,50,09,786	9,088.73	516.00	1,50,09,786
3	Road Studs	Nos		750.00			750.00	
4	Kerb painting			250.00			250.00	
	Total				**1,50,09,786**			**1,50,09,786**
	Grand Total				**18,69,28,904**			**18,69,28,904**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC//BOT/B-S-P/2013/ 264
Bhopal, dated 4 April, 2013

M/s Dilip Buiodcon Ltd.,
E-5/99, Arera Colony,
Bhopal

Sub: Development of Betul Sarni-Junnardeo-Parasia (SH-43) Road on BOT (Toll +Annuity) basis.

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Betul-Sarni-Junnardeo-Parasia (SH-43) Road on BOT (Toll +Annuity) basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **Rs. 15,48,00,000.00 (Rupees fifteen crores forty eight lacs only)** as Annuity Amount payable in terms of Clause.25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

(Duplicate LOA to be returned after acknowledgement)

(Arun Paliwal)
Dy. General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

TES

Theme Engineering Services Pvt. Ltd.
Sri Dhansingh Sisodiya, Itarasi road ,Infront of oil mill, Back side of Bajrang Mandir,Betul 460001,MP
Contact No. 07141238944
Email-tesptlbt@gmail.com

PROVISIONAL CERTIFICATE

1. I, **K.H.Waghmare** Team Leader (Theme Engineering Services Pvt. Ltd.), acting as Independent Engineer, under and in accordance with the Concession Agreement dated 20th May 2013 for **two lanning of Betul-Sarni-Technadon-Parasia (SH-43) Road** from KM 0+000 to KM 124+100 on Build, Operate and Transfer (BOT), Toll+Annuity basis, through **M/s DBL BETUL-SARNI TOLLWAYS LIMITED**, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
2. Constructions Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and /or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to force majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the concessionaire,) I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby Provisionally declared fit for entry into commercial operation on this the 12th day of May 2015.

ACCEPTED, SIGNED, SEALED
AND DELIEVERED For and on
behalf of **CONCESSIONAIRE by:**

T.K. SINHA
PROJECT MANAGER
M/s DBL BETUL-SARNI TOLLWAYS LIMITED, BHOPAL
VPO- Ghoradongri Dist.- Betul (M.P.)

ACCEPTED, SIGNED, SEALED
AND DELIEVERED For and on
behalf of **INDEPENDENT ENGINEER by:**

K. H. WAGHMARE
TEAM LEADER
THEME ENGINEERING SERVICES PVT. LTD.
c/o Sri Dhan Singh Sisodiya, Itarsi Road Infront of Oil mill, Betul (M.P.)

Annexure 8: Completion Certificate

TES

Theme Engineering Services Pvt. Ltd.
Sri Dhan singh Sivadiya, Ramai road, Jaitpur or old m.t. Back side of Bajrang Mandir, Betul 460001 MP
Contact No. 07141238944
Email-tebaptbt@gmail.com

COMPLETION CERTIFICATE

1. I K.H. Waghmare, Team Leader (Theme Engineering Services Pvt. Ltd.), acting as Independent Engineer under and in accordance with the Concession Agreement Dated 20th May 2013 for Two Lanning of Betul –Sarni – Technadon – Parasia (SH-43) Road From Km 0+000 To KM. 124+100 on Build, Operate and Transfer (BOT), Toll + Annuity Basis, Through M/S DBL BETUL SARNI TOLLWAYS LIMITED, hereby certify that the Tests specified in Article 14 and Schedule – 1 of the Agreement have been successfully undertake to determine compliance of the Project Highway, can be safely and reliably in commercial service of the users therefore. Except Tiger Corridor area from km 75+500 to km 80+280, due to permission not obtained / given by Ministry of Environment, Forest and Climate Change, New Delhi for execution of project.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two Lanning have been complete and the project highways is hereby declared fit for entry in to commercial operation on this the **11th November 2015.** Except 4.780 Km (from km 75+500 to km 80+280), due to permission not obtained / given by Ministry of Environment, Forest and Climate Change (Forest Conservation division).

SIGNED, SEAL AND DELIVERED

For and an behalf of

Independent Engineer By:

K.H. WAGHMARE
Team Leader
Theme Engineering Services Pvt. Ltd

Head Office: B-34, Gulal Vatika, Jawahar Circle, Jaipur-302018, Ph. No. +91-141-2724495-91 Fax- +91-141-2724491
E-mail: [illegible] Website: [illegible]

Annexure 9: Insurance

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001990

जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355
बिक्री चैनल कोड/**Sales Channel** Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL BETUL SARNI TOLLWAYS LTD
पता/ Address: PLOT NO5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI,KOLAR ROAD, BHOPAL -462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881841
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAECD6222A

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 32,40,726.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 2,91,665.00		
SGST/UTGST	₹ 2,91,665.00		
IGST	₹ 0.00		
केरला बाढ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	8800200327087011 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनःप्राप्त योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 38,24,056.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Thirty Eight Lakh Twenty Four Thousand Fifty Six Only.)
Location: Development of Betul-Sarni-Tekknadon-Junnardeo-Parasia (SH-43) Road on BOT (Toll+Annuity) Basis, Madhya Pradesh Betul, Betul, 460001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic	Zone IV	3,03,80,00,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	20,20,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.

Printed on 27/03/2020 by ID: 75159

Page no: 1

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Employees Compensation Policy

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL BETUL SARNI TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203388063900000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203388063900000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203388063900000 **Employees Compensation Insurance**

Insured Name	DBL BETUL SARNI TOLLWAYS LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	13/05/2020

Period of Insurance	From Date & Time	20/05/2020 00:01 AM	To Date & Time	19/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203388063900000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation. | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall). | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 10: Change of Scope

CIN No.: U45203MP2004SGC0167

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD

(Govt. of M.P. Undertaking)
45 - A, Arera Hills, Bhopal - 462 011, Madhya Pradesh
Tel.: (O) 0755-2765205, 2527202 - 299 (PRL Line) **Fax:** +91-755-2572643
Website: www.mprdc.nic.in

Letter No. ...../MPRDC/Betul-Sarni-Parasia/Ch of Sc, Bhopal dated.....

To,

General Manager,
MPRDC, Narmadapuram
Bhopal

Sub:- Development of Betul-Sarni-Parasia Road Project on BOT Basis – Reg.(Ref- Change of Scope)

Ref:- TL of IE Letter Theme/MPRDC/Betul-Sarani/336 Dt 29.09.2015.

The Advisory Committee in its meeting held on dated 07.04.2016 has agreed for In-principle approval of the proposal of works under change of scope as forwarded by TL of IE through the letter under reference. Minutes of Advisory Committee meeting for change of scope, as approved by Managing Director MPRDC, are enclosed herewith.

Please refer T.O. letter no. 6168, dated 22.07.2015 (Copy enclosed), as per instruction of MD, MPRDC after in-principle approval of Change of Scope, Financial Implication of approved Change of Scope should be checked and certified by a Committee formed at the level of General Manager concerned. The Committee will be headed by General Manager (Field), IE, concern DM & AGM along with one member of MPRDC, HQ of the level of DGM.

You are requested to calculate the financial implication of all works under change of scope approved by MPRDC as per the as built drawings and actual work done on site & submit to this office upto 15.9.2016.

Encl.:-As above.

Sd/-

General Manager (BOT)
MPRDC, Bhopal

Endt. No. 8748/MPRDC/Betul-Sarni-Parasia/Ch of Sc, Bhopal dated 1-9-16

Copy to-

1. Divisional Manager, MPRDC, Narmadapuram. Please get the Financial Implications of approved Change of Scope from IE and submit to this office through General Manager.
2. Team Leader, M/s Theme Engineering Services Pvt. Ltd., Opposite Soya Mill, Hanuman Temple, Itarsi Road, Betul (M.P.) for information and necessary action.
3. M/s DBL Betul-Sarni Tollways Ltd.,E-5/99, Arera Colony, Bhopal. Please submit the Financial Implications of Change of Scope through TL of IE immediately.

General Manager (BOT)
MPRDC, Bhopal

Connecting People Through quality infrastructure

Minuts of Meeting

Meeting of advisory committee of MPRDC for change of scope for Development of Betul -Sarni- Tekhnadhon -Junnardeo -Parasiya -Road SH -43 On BoT Toll Annuity Basis in The State of Madhya Predesh has been held in the office of MPRDC on dated 07/04/16. Following officials were presenting in the meeting:-

1. Shri A.S Chendke, Technical Advisor, MPRDC, Bhopal
2. Shri Anil Chansoria, Chief Engineer(BOT), MPRDC, Bhopal
3. Shri A.L.Suryavanshi, General Manager(BOT), MPRDC, Bhopal
4. Shri B.S. Meena, Divisional Manager, MPRDC, Bhopal
5. Shri K.H Waghmare, Team Leader, Independent Engineer, M/S Theme Engineering Services. Pvt.ltd.
6. Shri Nitin Shrivastava, General Manager, Concessionaire, M.S DBL Bhopal

The change of Scope Recommended by Independent Engineer vide its letter no.Theme/MPRDC/Betul-Sarni/356 dated 29.09.2015 has been discussed by advisory committee. Item wise reason & recommandation of Team leader were checked & decision of advisory commitee recorded as below.:-

Dovelopment of Betul -Sarni- Tekhnadhon -Junnardeo -Parasiya -Road SH -43 On Bot Toll Aunuity Basis in The State of Madhya Predesh

Client :- Madhya Predesh Road Development Corporation Limited
Concessioner :- DBL Betul Sarni Toll Ways Limited
Independent Engineer :- Theme Engineering Service Pvt. Ltd
EPC Contractor :- Dilip Buildcon Ltd.

Details of Concrete Pavement

Item No.	Scheduled Chainage	Designed Chainage	Existing Detail as per Schedule d - A	Development Proposal as per Schedule - B			Actual Construction By Concessionaire At Site			Reasons and Recommendation of Independent Engineer	Decision of Committee
				From	To	Length	From	To	Length		
1	38+640 To 40+000			N/A	N/A	N/A	38+640	40+000	1360	The Concrete pavement (PQC) carriage way with 7 m width was available at different location. Cracks and sattlement are noticed at many streches it was in poor condition as per Chief Engineer (BOT) inspection note dated 27th April, 2014 para 2&3 the existing rigid pavement should be treated as DLC because of poor condition and new PQC should be laid over it. Hence concessionaire has constructed 2.624Km, rigid pavement with PQC in 10mtr width along with paved shoulder and 2.06 km with 7 m concrete pavement road over existing 7 m concrete base treated as DLC. Concrete pavement (PQC) length of 4.684 km is recomended as (+) change of scope. Flexible pavement of 4.684 Km will be (-) Variation.	Committee agreed to consider Positive Change of Scope, as Recommended by I.E that Concrete pavement (PQC) length of 2.624 km length in 10mtr width and 2.060 km length in 7 mtr width PQC, positive(+) ve Change of Scope and 4.684 Km for flexible Pavement will be (-) ve Change of scope.
2	40+950 To 41+800			N/A	N/A	N/A	40+950	41+800	850		
3	43+000 To 43+500			N/A	N/A	N/A	43+000	43+500	500		
4	45+410 To 46+120			N/A	N/A	N/A	45+410	46+120	710		
5	108+926 To 110+190			N/A	N/A	N/A	108+926	110+190	1264		
							Total (Km)		4684		

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Dovelopment of Betul -Sarni- Tekhnadhon -Junnardeo -Parasiya -Road SH -43 On Bot Toll Aunuity Basis in The State of Madhya Predesh

Client :- Madhya Predesh Road Development Corperation Limited

Concessioner :- DBL Betul Sarni Toll Ways Limited

Independent Engineer :- Theme Engineering Service Pvt. Ltd

EPC Contractor :- Dilip Buildcon Ltd.

Details of 2-Lane with Paved Shoulder

Item No.	Scheduled Chainage	Existing Detail as per Scheduled A	Development Proposal as per Schedule - B			Actual Contraction By Concessionaire At Site			Reasons and Recommendation of Independent Engineer	Decision of Committee
			From	To	Length	From	To	Length		
	0+900 to 1+350		0+900	1+350	450	0+000	0+150	150	The Section 46+640 to 47+158,47+358 to 48+330,and km 120+850 to 123+350 constructed and developed as two lanning with Paved shoulder in available ROW. The section 103+670 to 101+670 is constructed and develop as 4 lanning with paved shoulder instead of two lanning with paved shoulder as decided in collector meeting Chhindwara on dated 12th Feb 2015 and Betul dated 31st Jun 2015. Hence it is recommended to consider additional length of paved shoulder about 1.760 km(+) change of scope.	Committee agreed to consider Positive Change of Scope, as Recommended by I.E, to consider additional length of Paved shoulder 1.760 km Positive (+) Change of Scope.
	3+400 to 4+000		3+400	4+000	600	0+530	1+150	620		
	20+650 to 21+300		20+650	21+300	650	3+400	4+000	600		
	37+100 to38+300		37+100	38+300	1200	20+430	21+080	650		
	38+300 to 39+500		38+300	39+500	1200	36+730	37+930	1200		
	39+500 to 40+900		39+500	40+900	1400	37+930	38+640	710		
	69+750 to 70+500		69+750	70+500	750	40+000	40+530	530		
	70+500 to 70+700		70+500	70+700	200	46+640	47+158	518		
	85+800 to 86+450		85+800	86+450	650	47+358	48+330	972		
	87+750 to 88+800		87+750	88+800	1050	69+540	69+830	290		
	91+000 to 92+000		91+000	92+000	1000	69+830	70+030	200		
	93+200 to 93+950		93+200	93+950	750	86+120	86+770	650		
	94+850 to 95+950		94+850	95+950	1100	88+550	88+770	220		
	96+650 to 97+850		96+650	97+850	1200	88+770	89+040	270		
	99+400 to 100+500		99+400	100+500	1100	91+280	92+260	980		
	100+500 to 101+100		100+500	101+100	600	93+360	94+110	750		
	103+000 to 103+300		103+000	103+300	300	95+130	96+230	1100		
	103+300 to 104+600		103+300	104+600	1300	96+950	98+210	1260		
	107+400 to 107+900		107+400	107+900	500	99+640	100+740	1100		
	108+400 to 109+400		108+400	109+400	1000	100+740	101+340	600		
	109+400 to 109+500		109+400	109+500	100	103+670	104+730	1060		
	109+500 to 109+700		109+500	109+700	200	107+470	107+970	500		
	109+700 to 110+500		109+700	110+500	800	108+420	109+420	1000		
	110+600 to 111+550		110+600	111+550	950	109+420	109+520	100		
	111+550 to 112+700		111+550	112+700	1150	109+520	109+720	200		
	114+000 to 115+600		114+000	115+600	1600	109+720	110+520	800		
	115+700 to 116+000		115+700	116+000	300	110+520	111+570	1050		
	116+000 to 116+700		116+000	116+700	700	111+570	112+720	1150		
	118+200 to 119+100		118+200	119+100	900	114+060	115+660	1600		
	119+700 to 120+750		119+700	120+750	1050	115+760	116+060	300		
						116+060	116+760	700		
						118+070	119+160	1090		
						119+760	122+515	2755		
						122+515	123+350	835		
			Total (Km)		24750	Total(Km)		26510	1.760 km (+) Change of Scope	

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ANNEXURE:IV

DETAIL OF BETUL-PARSIYA ROAD PROJECT (Four lane)

Item No.	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled A	Development Proposal as per Schedule - B			ACTUAL CONSTRUCTION BY CONCESSIONAIRE AT SITE			Reasons and Recommendation of Independent Engineer	Decision of Committee
				From	To	Length (km)	From	To	Length(mtr)		
1	46+630 to 48+630			46+630	48+630	2.0 (Sarni)	38+640	40+000	1360 (Bagdona)	There was a provision of four Lane of 2 km in Sarni town however land was not available so only 200mtr length constructed at sarni and remaining length 1360 mtr constructed in Bagdona town as four lanning according to the instructrion of Collector Betul so There is a change in location only.	There was a provision of four Lane of 2 km in Sarni town however land was not available so only 200mtr length constructed at sarni and remaining length 1360 mtr constructed in Bagdona town as four lanning according to the instructrion of Collector Betul so There is a change in location only.
							47+158	47+358	200 (Sarni)		
2	120+850 to 124+100			120+850	124+100	3.25 (Parasia)	98+210	99+190	980 (Dungariya)	There was a provision of four Lane of 3.25 km in Parasia town however land was not available so only 750 mtr length constructed at Parasia town and 980 mtr length construted in Dungariya,and remaining 2000 mtr length constructed in Junnardeo as four lanning as per instructrion of Collector Chindwara so There is a change in location only.	There was a provision of four Lane of 3.25 km in Parasia town however land was not available so only 750 mtr length constructed at Parasia town and 980 mtr length construted in Dungariya,and remaining 2000 mtr length constructed in Junnardeo as four lanning as per instructrion of Collector Chindwara so There is a change in location only.
							101+670	103+670	2000 (Junnardeo)		
							123+350	124+100	750 (Parasia)		
				Total (Km)		5.25	Total(Km)		5.29		

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Development of Betul -Sarni- Tekhnadhon -Junnardeo -Parasiya -Road SH -43 On Bot Toll Aunnuity Basis in The State of Madhya Predesh

Client :- Madhya Predesh Road Development Corporation Limited
Concessioner :- DBL Betul Sarni Toll Ways Limited
Independent Engineer :- Theme Engineering Service Pvt. Ltd
EPC Contractor :- Dilip Buildcon Ltd.

Slab culvert Reconstruction

Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
1	49+015	48+378	Slab span 1x3	Reconstruction as Slab Culvert span 1x3	Widening (lhs 6.3mtr) span 1x3 from 3mtr to 12 mtr.	The existing structure is in good condition hence widening of 1 span of 3 m, existing width 5.7 m is done to 12 m. Recommended (+)ve COS for Widenning of 1 span 3 m from 5.7 m to 12 m and (-)ve COS For Reconstruction of slab culvert 1 span 3 m of 12 m width.	. (+)ve COS for Widenning of 1 span 3 m from 5.7 m to 12 m and (-)ve COS For Reconstruction of slab culvert 1 span 3 m of 12 m width, as recommended by I.E.
2	97+660	96+166	Slab span 1x2.5	Reconstruction as Slab Culvert span 1x4	Widening (rhs 6.7mtr) span 1x4 m from 5.3mtr to 12 mtr.	As per Site the existing structure is a brick masonary arch of 1x4.0 m span width 5.3 m and it is in good condition hence widening is Done from 5.3 m to 12 m. Recommended (+)ve Cos for Widenning of 1 span 4 m from 5.3 m to 12 m and (-)ve COS for Reconstruction of a slab culvert 1 span of 4 m with 12 m width.	(+)ve Cos for Widenning of 1 span 4 m from 5.3 m to 12 m and (-)ve COS for Reconstruction of a slab culvert 1 span of 4 m with 12 m width, as recommended by I.E.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
3	99+450	NA	Slab span 1x2.0	Reconstruction as Slab Culvert span 1x3	As per site no C.D. work is needed	No such type of structure exist at site and there is no need of C.D. work hence reconstruction of Slab culvert Span 1X 3mtr with 12mt width will be (-)ve COS	Reconstruction of Slab culvert Span 1X 3mtr with 12mt width will be (-)ve COS as there is no need of any CD work, as recommended by I.E.
Extra Slab Culvert Reconstruction							
1	72+020	70+822	Rcc Solid slab 1x4.0, width 7.3 mtr	Retained	Reconstruction 1x4 mtr box, width 12mtr	Due to change of alignment for improving Geometrics,existing structure is abondoned.Concessionaire has constructed new culvert having 1 span of 4 mtr with 12mtr width Recommended as (+)ve change of scope for reconstruction of Slab Culvert 1X 4 mt span with 12mtr width.	(+)ve change of scope for reconstruction of Slab Culvert 1X 4.mt span with 12mtr width because of the provision as retained structure in schedule'B', as recommended by I.E.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
2	96+565	95+067	There is no structure shown in the schedule but physically an arch stone masonery 1x2.5mtr culvert was existing there	Not shown in shedule	Reconstruction as Box culvert 2.5x4.2mtr, width 12mtr	There was an existing arch stone masonary 1x2.5mtr structure which was in a very poor condition hence reconstructed as box culvert 2.5x 4.2mtr in 12mtr width is constructed, recommended as (+)ve COS for reconstruction of Box culvert 2.5x 4.2 mtr width 12 mtr	Reconstructed as box culvert 2.5x 4.2mtr in 12mtr width will be (+)ve COS. constructed as new culvert because not provided in Schedule, as recommended by I.E
Slab Culvert widening							
1	3+360	3+346	Slab 1x4.0, width 7.4 mt	Widening	Widening of existing slab culvert from 7.4mtr to 12 mtr and reconstruction of slab in 12 mtr width after dis mentling the existing slab of 7.4 mtr width.	Slab of the existing structure was in very poor condition.sub structure and other component in good condition Therefore existing slab is replaced in addition to the widening of structure from 7.4mt To 12mtr, recomended (+)ve change of scope.for reconstruction of slab span1x4mtr for 7.4mtr width.	(+)ve change of scope.for reconstruction of slab span1x4mtr for 7.4mtr width as the existing slab was in very poor condition, as recommended by I.E.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
Extra Slab Culvert widening							
1	4+780	4+760	Rcc Solid slab 1x4.0, width 8.5 Mtr	Retained with minor repaires	Widening (rhs 3.5mtr) from 8.5mtr to 12 mtr.	As per provision of IRC SP-73 2007 width should be 12.0 mtr.Structure is in good condition therfore slab culvert span 1x4mtr proposed under widening from 8.5mtr to 12.0mtr . Recommended (+) COS for widening of a slab culvert span 1x4mtr from 8.5mtr to 12mtr width.	As recommended by I.E (+) COS for widening of a slab culvert span 1x4mtr from 8.5mtr to 12mtr width because provided in the schedule as retained structure.
2	32+285	31+914	HPC 1x600 dia, width 7.5 mtr as per site width is 8.5mtr.	Reconstruction as HPC 1x1200 mm	Widening as slab culvert 1x4.1 (lhs 3.5mtr) from 8.5mtr to 12mtr.	Existing structure is a slab culvert 1x4.1mtr span and width 8.5mtr in good condition. As per provision of IRC SP-73 2007 width should be 12.0 mtr. Therefore proposed under widening, of Slab culvert span 1x4.1mtr from 8.5mtr to 12.0mtr , recomended (+)ve COS for widening of Slab culvert span 1x4.1mtr from 8.5mtr to 12mtr width and (-)ve COS for reconstruction of HPC 1row 1200mm.	As recommended by I.E (+)ve COS for widening of Slab culvert span 1x4.1mtr from 8.5mtr to 12mtr width and (-)ve COS for reconstruction of HPC 1row 1200mm, as in schedule B, it is reconstruction as HPC 1 Row 1200mm where as site it is found as slab culvert 1x4.1mtr width 8.5mtr in good condition.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
3	33+890	33+523	Rcc Solid slab 1x3.0, width 7.5 mtr as per site width is 8.5mtr	Retained with minor repaires	Widening 1x3.0 (rhs 3.5 mtr) from 8.5 mtr to 12mtr.	Existing structure is a 1x3mtr,width 8.5mtr slab culvert and in good condition. Hence widening is done from 8.5mtr to 12mtr .As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended under widening of slab culvert span 1x3mtr, from 8.5mtr to 12.0mtr width as (+)ve COS.	As recommended by I.E (+) COS for widening of slab culvert span 1x3mtr from 8.5mtr to 12mtr width as provided as retained structure in schedule-B.
4	34+000	33+635	Rcc Solid slab 1x3.0, width 7.5 mtr as per site width is 8.5 mtr	Retained with minor repaires	Widening 1x3.0 (rhs 3.5 mtr) from 8.5 mtr to 12mtr.	Existing structure is a 1x3 mtr,width 8.5mtr slab culvert and in good condition.hence widening is done from 8.5mtr to 12mtr. As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) COS under widening, slab culvert span 1x3mtr from 8.5mtr to 12.0mtr width.	As recommended by I.E (+) COS under widening, slab culvert span 1x3mtr from 8.5mtr to 12.0mtr width, as provided as retained structure in schedule-B

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
5	34+600	34+228	Rcc Solid slab 1x3.0, width 7.5 mtr as per site width is 8.5 mtr	Retained with minor repaires	Widening 1x3.0 (rhs 3.5mtr) from 8.5mtr to 12mtr.	Existing structure is a 1x3.0,width 8.5mtr slab culvert and in good condition. Hence widening is done from 8.5mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) COS under widening slab culvert span 1x3mtr , from 8.5mtr to 12.0mtr width.	As recommended by I.E (+) COS under widening, slab culvert span 1x3mtr from 8.5mtr to 12.0mtr width, as provided as retained structure in schedule-B
6	34+800	34+441	Rcc Solid slab 1x5.9, width 7.5 mtr as per site width is 8mtr	Retained with minor repaires	Widening 1x5.9 (lhs 4.00mtr) from 8mtr to 12mtr	Existing structure is a 1x5.9,width 8.0mtr slab culvert and in good condition. Hence widening is done from 8mtr to 12mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) COS under widening slab culvert span 1x5.9mtr, from 8.0mtr to 12.0mtr Width.	As recommended by I.E (+) COS under widening slab culvert span 1x5.9mtr, from 8.0mtr to 12.0mtr Width as provided as retained structure in schedule-B.
7	35+515	35+151	Rcc Solid slab 1x2.0, width 7.7 mtr as per site width is 9 mtr	Retained with minor repaires	Widening 1x2.0 (rhs 3.00mtr) from 9mtr to 12 mtr	Existing structure is a 1x2.0,width 9.0mtr slab culvert and in good condition. Hence widening is done from 9 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) COS under widening slab culvert span 1x2mtr , from 9.0mtr to 12.0mtr	As recommended by I.E (+) COS under widening slab culvert span 1x2mtr , from 9.0mtr to 12.0mtr, as provided as retained structure in schedule-B

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
8	37+040	36+668	Rcc Solid slab 1x2.0, width 7.4 mtr as per site width is 8.5 mtr.	Retained with minor repaires	Widening 1x2.0 (rhs 3.50mtr) from 8.5mtr to 12mtr.	Existing structure is a 1x2.0,width 8.5mtr slab culvert and in good condition. Hence widening is done from 8.5mtr to 12mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) COS under widening slab culvert span 1x2mtr , from 8.5mtr to 12.0mtr	As recommended by I.E (+) COS under widening slab culvert span 1x2mtr , from 8.5mtr to 12.0mtr, as provided as retained structure in schedule-B
9	38+825	38+455	Rcc Solid slab 1x3.0, width 7.4 mtr as per site width is 8.8mtr	Retained with minor repaires	Widening 1x3.0 (rhs 3.2 mtr) from 8.8 mtr to 12 mtr.	Existing structure is a 1x3.0,width 8.8mtr slab culvert and in good condition. Hence widening is done from 8.8 mtr to 12 mtr. As per provision of IRC SP-73 2007 width should be 12.0 mtr.Recommended (+) COS under widening slab culvert span 1x3mtr , from 8.8mtr to 12.0mtr	As recommended by I.E (+) COS under widening slab culvert span 1x3mtr , from 8.8mtr to 12.0mtr,as provided as retained structure in schedule-B.
10	39+710	39+342	Rcc Solid slab 1x2.0, width 7.4 mtr as per site width is 11.6 mtr	Retained with minor repaires	Widening 1x2.0 (B/S 3.7mtr) from 11.6 mtr to 19mtr because of four lanning.	As per site Existing structure is a slab culvert span 1x2mtr ,width 11.6 mtr and in good condition because of four lanning in this reach slab culvert span 1x2mtr is widened from 11.6mtr to 19.0mtr. Recommended as (+)ve COS for widening of slab culvert span 1x2mtr from 11.6mtr to 19.0mtr width	As recommended by I.E (+)ve COS for widening of slab culvert span 1x2mtr from 11.6mtr to 19.0mtr width, because of Four lanning as provided as retained structure in schedule-B.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
11	40+190	39+820	Rcc Solid slab 1x2.0, width 7.4 mtr as per site width is 12.5 mtr	Retained with minor repaires	Widening 1x2.0 (rhs 3.00mtr and lhs 3.5mtr) from 12.5 mtr to 19mtr because of four lanning.	As per site Existing structure is a slab culvert span 1x2.mtr,width 12.5mtr and in good condition because of four lanning in this reach slab culvert span 1x2mtr is widened from 12.5mt to 19.0mtr. Recommended (+)veCOS for widening of slab culvert span 1x2 mtr from 12.5mtr to 19mtr width.	As recommended by I.E (+)veCOS for widening of slab culvert span 1x2 mtr from 12.5mtr to 19mtr width, because of four lanning as provided as retained structure in schedule-B.
12	41+180	40+811	Rcc Solid slab 1x3.6, width 7.5 mtr as per site width is 8.7 mtr	Retained with minor repaires	Widening 1x2.5 (rhs 3.3mtr) from 8.7 mtr to 12 mtr.	Existing structure is a 1x2.5,width 8.7 mtr slab culvert and in good condition. Hence widening is done 8.7 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr.Recommended (+) ve COS under widening of slab culvert span 1x2.5mtr, from 8.7mtr to 12.0mtr .	As recommended by I.E (+) ve COS under widening of slab culvert span 1x2.5mtr, from 8.7mtr to 12.0mtr width, as provided as retained structure in schedule-B.
13	47+680	47+148	Not given	Not given	Widening slab culvert 2x2 (lhs 9.0mtr) from 10mtr to 19mtr because of four lanning	Existing structure is slab culvert span 2x2mtr,width 10.0mtr in good condition. Because of four lanning in this reach salb culvert span 2x2 mtr is widened from 10.mtr to 19mtr Recomended (+) ve COS under widening slab culvert span 2x2mtr , from 10mtr to 19.0mtr width.	As recommended by I.E (+) ve COS under widening slab culvert span 2x2mtr , from 10mtr to 19.0mtr width, because of four lanning as not provided in schedule-B in any category.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
14	48+315	47+899	Rcc Solid slab 1x1.5, width 7.2 mtr as per site width is 8 mtr	Reconstruction as HPC 2x1200 dia	Widening as slab culvert 1x5.8 (rhs 4.0mtr) from 8mtr to 12 mtr	Existing structure is slab culvert span 1x5.8mtr,width 8.0mtr in good condition.Hence widening is done from 8 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+) ve COS under widening slab culvert span 1x5.8mtr, from 8.0mtr to 12.0mtr width. And (-) ve COS for reconstruction of 2 rows of 1200mm HPC of 12mtr width.	As recommended by I.E (+) ve COS under widening slab culvert span 1x5.8mtr, from 8.0mtr to 12.0mtr width. And (-) ve COS for reconstruction of 2 rows of 1200mm HPC of 12mtr width, as provided in Schedule -B.
15	91+375	89+899	Rcc Solid slab 1x3.0, width 5.6 mtr as per site width is 6.2 mtr	Retained	Widening 1x3.0 (lhs 5.8mtr)) from 6.2mtr to 12 mtr	Existing structure is slab culvert span 1x3.0mtr ,width 6.2mtr in good condition. Hence widening is done from 6.2 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+)ve COS under widening slab culvert span 1x3mtr , from 6.2mtr to 12.0mtr width .	As recommended by I.E (+)ve COS under widening slab culvert span 1x3mtr , from 6.2mtr to 12.0mtr width ,as provided as retained structure in schedule-B.

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Item No	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire	Reasons and Recommendation of Independent Engineer	Decision of Committee
16	99+350	97+846	HPC 1x1000dia as per site slab culvert 1x2.40mtr slab culvert width 6 mtr.	Retained	Widening as slab culvert 1x2.40mtr (lhs 4.0mtr and rhs 2.0mtr) from 6mtr to 12 mtr.	Existing structure is slab culvert span 1x2.40mtr width 6.0mtr in good condition. Hence widenning is done from 6 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr. Recommended (+)ve COS under widening slab culvert span 1x2.40mtr , from 6.0mtr to 12.0mtr width.	As recommended by I.E (+)ve COS under widening slab culvert span 1x2.40mtr , from 6.0mtr to 12.0mtr width,as provided as retained structure in schedule-B
17	100+400	98+881	HPC 1x1000 dia, Width 11.0 mtr as per site slab culvert 1x2.7 mtr slab culvert width 5.8 mtr	Retained	Widening as slab culvert 1x2.7 (b/s 3.7 and 2.5) from 5.8mtr to 12mtr	Existing structure is slab culvert span 1x2.7mtr ,width 5.8mtr in good condition. Hence widening is done from 5.8 mtr to 12 mtr.As per provision of IRC SP-73 2007 width should be 12.0 mtr.Recommended (+) ve COS under widening slab culvert span 1x2.7mtr, from 5.8mtr to 12.0mtr width.	As recommended by I.E (+) ve COS under widening slab culvert span 1x2.7mtr, from 5.8mtr to 12.0mtr width,,as provided as retained structure in schedule-B

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TA

Dovelopment of Betul -Sarni- Tekhaadhon -Junnardeo- Parasiya -Road SH -43 On Bot Toll Annunity Basis in The State of Madhya Pradesh

Client :- Madhya Predesh Road Development Corporation Limited

Concessioner :- DBL Betul Sarni Toll Ways Limited

Independent Engineer :- Theme Engineering Service Pvt. Ltd

EPC Contractor :- Dilip Buildcon Ltd.

S.no	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
1	21+450	21+106	2 Row 900	RC as 1 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of HPC 1 Row of 1200mm as not reconstruted
2	26+665	26+316	1 Row 900	RC as 1 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of HPC 1 Row of 1200mm as not reconstruted
3	46+925	46+675	slab 1 x 1.5	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 2 rows of 1200mm HPC as not reconstruted
4	47+000	46+987	slab 1 x 1.5	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 2 rows of 1200mm HPC as not reconstruted
5	48+315	48+215	slab 1 x 1.5	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 2 rows of 1200mm HPC as not reconstruted
6	48+515	48+425	slab 1 x 1.5	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 2 rows of 1200mm HPC as not reconstruted
7	48+660	48+605	slab 1 x 1.0	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 2 rows of 1200mm HPC as not reconstruted

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CE (BOT)

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S.no.	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
15	72+825	71+224	1 Row 900	RC as 1 row 1200	Widenning as 1 row 1200	existing structure is HPC of 1row 1200mm width 7.4 mtr and is in good condition.Hence widening is done from7.4 mtr to 12 mtr (-)ve COS for reconstruction 1row of 1200mm HPC width 12 mtr and (+)ve COS for widening 1row of 1200mm HPC from 7.4 mtr to 12.0mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction 1row of 1200mm HPC width 12 mtr and (+)ve COS for widening 1row of 1200mm HPCfrom 7.4 mtr to 12.0mtr
16	74+550	73+327	1 Row 900	RC as 1 row 1200	Widenning as 1 row 1000	existing structure is HPC of 1row 1000mm width 5 mtr and is in good condition.Hence widening is done from 5mtr to 12 mtr (-)ve COS for reconstruction 1row of 1200mm HPC width 12 mtr and (+)ve COS for widening 1row of 1000mm HPC from 5 mtr to 12.0mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction 1row of 1200mm HPC width 12 mtr and (+)ve COS for widening 1row of 1000mm HPCfrom 5 mtr to 12.0mtr
17	89+015	88+922	1 Row 900	RC as 1 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr.	Committee agreed as recommended by IE to consider (-)ve COS fo reconstruction ef 1row of 1200mm HPC width 12mtr as not reconstruted
18	94+860	93+359	1 Row 900	RC as 1 row 1200	Widenning as 1 row 1200	Existing structure is HPC of 1 row 1200mm Barrel Length 12.7 mtr and is in good condition.Barrel length is increased from 12.7 mtr to 15 mtr with formation width 12mtr. (-)ve COS for reconstruction 1row of 1200mm HPC formation width 12 mtr ,barrel length 15 mtr and (+)ve COS for widening 1row of 1200mm HPC for barrel length 12.7 mtr to 15.0mtr with formation width 12 mtr because of high Embankment.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction 1row of 1200mm HPC formation width 12 mtr ,barrel length 15 mtr and (+)ve COS for widening 1row of 1200mm HPC for barrel length 12.7 mtr to 15.0mtr with formation width 12 mtr because of high Embankment.
19	100+950	99+443	1 Row 900	RC as 1 row 1200	Widenning as 1 row 1200	Existing structure is HPC of 1 row 1200mm Barrel Length 12.4 mtr and is in good condition.Barrel length is increased from 12.4 mtr to 15 mtr with formation width 12mtr. (-)ve COS for reconstruction 1row of 1200mm HPC formation width 12 mtr ,barrel length 15 mtr and (+)ve COS for widening 1row of 1200mm HPC for barrel length 12.4 mtr to 15.0mtr with formation width 12 mtr because of high Embankment.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction 1row of 1200mm HPC formation width 12 mtr ,barrel length 15 mtr and (+)ve COS for widening 1row of 1200mm HPC for barrel length 12.4 mtr to 15.0mtr with formation width 12 mtr because of high Embankment.
20	105+650	105+575	1 Row 1000	RC as 2 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 2 Row of 1200mm width12mtr.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of HPC 2Row of 1200mm width 12mtr as not reconstruted

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21	115+160	111+582	1 Row 1000	RC as 1 row 1200	Retain	Existing structure is in good condition HPC 1row 1200mm width 12mtr hence retained . (-)ve COS fo reconstruction of 1 row 1200mm HPC width 12 mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction HPC 1 row of 1200mm width 12 mtr because it is retained; where as in shedule B it is under reconstruction as 1row of 1200mm HPC
22	117+850	116+241	1 Row 900	RC as 1 row 1200	RC as Minor Bridge span 1x6.1 Box type	To maintain and improve the Geometrics specially the verticle curves and heavy water suply pipe line, it is found suitable to have a minor bridge. As per site verification at this chainage there is a Arch culvert, with the span arrangement as 1 x 3.6mtr . As per the hydraulic design minor bridge of 6.1 x 4.6 mtr box bridge is required. Because of the variation in provision of the aggrement and site and as per the provision of hydraulic design, there is a (-)ve COS for reconstruction of HPC 1row 1200mm reconstruction. It is certified that there is a position of minor bridge 1x10 mtr span at ch-99+100 which is not needed as per the site requirment and retained as HPC. This minor bridge considered and included under the Scope of Minor Bridge.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of HPC 1row 1200mm width 12 mtr.
23	120+425	118+801	slab 1 x 1	RC as 1 row 1200	Retain	Existing structure is in good condition HPC 1 row 1200mm having width 12.0mtr hence retained . (-)ve COS for reconstruction of 1 row 1200mm HPC width12 mtr	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction HPC 1 row of 1200mm width 12 mtr because it is retained.
24	122+159		1 Row 1000	RC as 1 row 1200	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work (-)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr.	Committee agreed as recommended by IE to consider (-)ve COS for reconstruction of 1 row 1200mm HPC width 12 mtr as not reconstruted
widening HPC							
1	2	3	4	5	6	7	8
25	22+255	21+912	1 Row 900	Widening as 1 row 900	Proposed as Utility Duct	As per site condition, theire is utility duct. With 12 mtr width hence widening is not done (-)ve €OS for widening of 1 row of 900mm HPC	Committee agreed as recommended by IE to consider (-)ve COS for widening of 1 row of 900mm HPC
26	28+560	26+206	1 Row 1000	Widening as 1 row 1000	RC as 2 row 1200	Existing structure 1 row of 1000mm HPC width 7.5 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm width 12mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC width 12 and (-)ve COS for widening for 1row of 1000mm HPC from 7.5mtr to 12.mtr In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC width 12 mtr and (-)ve COS for widening for 1row of 1000mm HPC from 7.5 mtr to 12mtr

A.T.L. Divisional Manager MPRDC, Narmadapuram General Manager M.P.R.D.C Bhopal CE(BOT) TA

S.no	Scheduled Chainage	Designed Chainage	Existing Detail as per Schedule - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reports and Recommendation of Independent Engineer	Decision of Committee
27	30+375	30+008	1 Row 1000	Widening as 1 row 1000	RC as 1 row 1200	Existing structure 1 row of 1000mm HPC width 7.5 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 16.25mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 16.25 mtr and (-)ve COS for widening for 1row of 1000mm HPC from 7.5mtr to 12 mtr with barrel length 16.250mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 16.25 mtr and (-)ve COS for widening for 1row of 1000mm HPC from 7.5mtr to 12 mtr with barrel length 16.250mtr because of high embankment.
28	51+110	50+468	1 Row 900	Widening as 1 row 900	RC as 1 row 1200	Existing structure 1 row of 900mm HPC width 7.6 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 17.6mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.6 mtr and (-)ve COS for widening for 1row of 900 mm HPC from 7.6 mtr to 12 mtr with barrel length 17.6mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.6 mtr and (-)ve COS for widening for 1row of 900 mm HPC from 7.6 mtr to 12 mtr with barrel length 17.6mtr because of high embankment.
29	53+125	52+179	1 Row 900	Widening as 1 row 900	RC as 1 row 1200	Existing structure 1 row of 900mm HPC width 8.5mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm width 12 mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC width 12mtr and (-)ve COS for widening for 1row of 900mm HPC from 8.5mtr to 12mtr In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC width 12 mtr and (-)ve COS for widening for 1row of 900mm HPC from 8.5mtr to 12mtr.
30	53+500	52+518	2 Row 900	Widening as 2 row 900	RC as 1 row 1200	Existing structure 2 row of 900mm HPC width 10.5 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 19.2mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 19.2 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from10.5 mtr to 12 mtr with barrel length 19.2 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 19.2 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from10.5 mtr to 12 mtr with barrel length 19.2 mtr because of high embankment.

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S.No.	Scheduled Chainage	Designed Chainage	Existing Detail as per Schedule - A	Development Proposal as per Schedule - B	As-Built Application by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
31	53+800	52+796	1 Row 900	Widening as 1 row 900	RC 1 x 1200	Exisiting structure 1 row of 900mm HPC width 9.8 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 21mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 21 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 9.8 mtr to 12 mtr with barrel length 21 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 21 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 9.8 mtr to 12 mtr with barrel length 21 mtr because of high embankment.
32	54+870	53+896	1 Row 1000	Widening as 2 row 1000	RC 1 x 1200	Existing structure 2 row of 1000mm HPC width 8.7 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 17.5 mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.5 mtr and (-)ve COS for widening for 2 row of 1000 mm HPC from 8.7 mtr to 12 mtr with barrel length 17.5 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.5 mtr and (-)ve COS for widening for 2 row of 1000 mm HPC from 8.7 mtr to 12 mtr with barrel length 17.5 mtr because of high embankment.
33	56+600	55+758	2 Row 900	Widening as 2 row 900	RC 2 x 1200	Existing structure 2 row of 900mm HPC width 10 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 21 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 21 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 10 mtr to 12 mtr with barrel length 21mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 21 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 10 mtr to 12 mtr with barrel length 21mtr because of high embankment.

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S.no.	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
34	56+950	56+018	3 Row 900	Widening as 3 row 900	RC 2 x 1200	Existing structure 3 row of 900mm HPC width 5.8 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 16.25 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 16.25 mtr and (-)ve COS for widening for 3 row of 900 mm HPC from 5.8mtr to 12 mtr with barrel length 16.25mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 16.25 mtr and (-)ve COS for widening for 3 row of 900 mm HPC from 5.8mtr to 12 mtr with barrel length 16.25mtr because of high embankment.
35	57+070	56+075	2 Row 900	Widening as 2 row 900	RC 2 x 1200	Existing structure 2 row of 900mm HPC width 7.4 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 15 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 15 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 7.4 mtr to 12 mtr with barrel length 15 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 15 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 7.4 mtr to 12 mtr with barrel length 15 mtr because of high embankment.
36	67+310	66+073	1 Row 1000	Widening as 1 row 1000	RC as 2 row 1200	Existing structure 1 row of 1000mm HPC width 7.4 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 28.70 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 28.70 mtr and (-)ve COS for widening for 1 row of 1000 mm HPC from 7.4 mtr to 12 mtr with barrel length 28.70 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 28.70 mtr and (-)ve COS for widening for 1 row of 1000 mm HPC from 7.4 mtr to 12 mtr with barrel length 28.70 mtr because of high embankment.
37	67+550	66+309	1 Row 900	Widening as 1 row 900	RC as 2 row 1200	Existing structure 1 row of 900mm HPC width 8.5 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 26.25 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 26.25 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from8.5 mtr to 12 mtr with barrel length 26.25 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 26.25 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from8.5 mtr to 12 mtr with barrel length 26.25 mtr because of high embankment.

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S.no	Scheduled Chainage	Designed Chainage	Existing Data as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
38	67+640	66+390	1 Row 900	Widening as 1 row 900	RC as 2 row 1200	Existing structure 1 row of 900mm HPC width 6.8 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 21.25 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 21.25 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 6.8 mtr to 12 mtr with barrel length 21.25 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 21.25 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 6.8 mtr to 12 mtr with barrel length 21.25 mtr because of high embankment.
39	69+860	68+514	1 Row 900	Widening as 1 row 900	Retain	Existing structure is HPC 1 row of 900mm,width 12 mtr is in good condition , sufficient to accomadate the discharge Hence HPC 1 row 900mm retained (-)ve COS for widening of 1 row of 900mm HPC	Committee agreed as recommended by IE to consider (-)ve COS for widening of 1 row of 900mm HPC as structure is retained
40	70+250	69+045	2 Row 1000	Widening as 2 row 900	RC as 2 row 1200	Existing structure 2 row of 900mm HPC width 7.5 mtr is not in good condition.hence reconstruted HPC 2 rows of 1200mm formation width 12mtr and barrel length 18.70 mtr (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 18.70 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 7.5 mtr to 12 mtr with barrel length 18.70 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 2 rows of 1200 mm HPC formation width 12 mtr and barrel length 18.70 mtr and (-)ve COS for widening for 2 row of 900 mm HPC from 7.5 mtr to 12 mtr with barrel length 18.70 mtr because of high embankment.
41	83+190	81+706	1 Row 900	Widening as 1 row 900	RC as 1 row 1200	Existing structure 1 row of 900mm HPC width 10 mtr is not in good condition.hence reconstruted HPC 1 rows of 1200mm formation width 12mtr and barrel length 17.5 mtr (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.5 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 10 mtr to 12 mtr with barrel length 17.5 mtr because of high embankment. In shedule B proposed under widening	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of 1 rows of 1200 mm HPC formation width 12 mtr and barrel length 17.5 mtr and (-)ve COS for widening for 1 row of 900 mm HPC from 10 mtr to 12 mtr with barrel length 17.5 mtr because of high embankment.
42	99+750	-	1 Row 1000	Widening as 1 row 1000	As per site no C.D. work is needed	As per site condition there is no existing structure and further there is no need for C.D. work. Recommended (-)ve COS for widening to 12 mtr of 1 row of 1000mm HPC.	Committee agreed as recommended by IE to consider (-)ve COS for widening of 1 row of 1000mm HPC as recommended by I.E.

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S.no	Scheduled Chainage	Designed Chainage	Existing Detail as per Schedule - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reason and Recommendation of Independent Engineer	Decision of Committee
HPC Retain to Widenning							
43	62+750	61+566	1 Row 1000	Retain 1 row 1000	Widenning as 2 row 1200	Existing structure 2 rows of 1200mm HPC width 7.7 mtr is in good condition.hence widening is done from 7.7mtr to 12 mtr with barrel length 21.5 mtr. (+) ve COS for widening 2 rows of 1200 mm HPC from 7.7mtr to 12mtr barrel length 21.5 mtr , because of high embankment	Committee agreed as recommended by IE to consider (+) ve COS for widening 2 rows of 1200 mm HPC from 7.7mtr to 12mtr barrel length 21.5 mtr , because of high embankment
44	86+400	85+127	1 Row 900	Retain as 1 row 900	Widenning as 2 row 900	Existing structure 2 rows of 900mm HPC width 9.3 mtr is in good condition.hence widening is done from 9.3 mtr to 12 mtr with barrel length 21.80 mtr. (+) ve COS for widening 2 rows of 900 mm HPC from 9.3 mtr to 12mtr barrel length 21.80 mtr , because of high embankment	Committee agreed as recommended by IE to consider (+) ve COS for widening 2 rows of 900 mm HPC from 9.3 mtr to 12mtr barrel length 21.80 mtr , because of high embankment
45	88+500	87+024	1 Row 1000	Retain 1 row 1000	Widenning as 3 row 1000	Existing structure 3 rows of 1000mm HPC width 9.6 mtr is in good condition.hence widening is done from 9.6 mtr to 12 mtr with barrel length 20.60 mtr. (+) ve COS for widening 3 rows of 1000 mm HPC from 9.6 mtr to 12mtr barrel length 20.60 mtr , because of high embankment	Committee agreed as recommended by IE to consider (+) ve COS for widening 3 rows of 1000 mm HPC from 9.6 mtr to 12mtr barrel length 20.60 mtr , because of high embankment
46	119+300	117+670	1 Row 1000	Retain 1 row 1000	Widenning as 1 row 1000	Existing structure 1 rows of 1000mm HPC width 10 mtr is in good condition.hence widening is done from 10 mtr to 12 mtr with barrel length 17.50 mtr. (+) ve COS for widening 1 row of 1000 mm HPC from 10 mtr to 12mtr barrel length 17.50 mtr , because of high embankment	Committee agreed as recommended by IE to consider (+) ve COS for widening 1 row of 1000 mm HPC from 10 mtr to 12mtr barrel length 17.50 mtr , because of high embankment
47	120+010	118+392	slab 1 x 1	Retain as slab 1 x 1.0	Widenning as 1 row 1000	Existing structure 1 rows of 1000mm HPC width 10 mtr is in good condition.hence widening is done from 10 mtr to 12 mtr with barrel length 18.75 mtr. (+) ve COS for widening 1 row of 1000 mm HPC from 10 mtr to 12mtr barrel length 18.75 mtr , because of high embankment	Committee agreed as recommended by IE to consider (+) ve COS for widening 1 row of 1000 mm HPC from 10 mtr to 12mtr barrel length 18.75 mtr , because of high embankment
HPC Retain to Reconstruction							
48	27+100	26+752	1 Row 1000	Retain as 1 row 1000	Reconstruction as 1 row 1200	Existing structure 1 row of 1000mm HPC width 9.6 mtr is not in good condition.hence reconstructed HPC 1 row of 1200mm width 12mtr . (+) ve COS for reconstruction 1 row of 1200 mm width 12mtr.	Committee agreed as recommended by IE to consider (+) ve COS for reconstruction 1 row of 1200 mm width 12mtr.
49	70+815	69+620	1 Row 1000	Retain as 1 row 1000	RC as 1 x 1200	Existing structure is HPC 1row of 1000mm width 10.0mtr but not in good condition hence reconstructed HPC 1row of 1200mm width 12 mtr (+)ve COS for reconstruction of HPC 1 row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of HPC 1 row of 1200mm width12mtr

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General Manager
M.P.R.D.C Bhopal

CE (BOT)

TA

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S.no.	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development as Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
50	71+150	69+962	2 Rows 900	2 Rows 900 Retained	RC as 1 row 1200	Existing structure is HPC 2 rows of 900 mm width 9 mtr but not in good condition Hence reconstruted HPC 1 row of 1200 mm width 12mtr, which is sufficient to accomadate the discharge. (+)Ve COS for reconstructed 1 row of 1200mm HPC width 12mtr	Committee agreed as recommended by IE to consider (+)Ve COS for reconstruction 1 row of 1200mm HPC width 12mtr
51	74+275	73+060	rcc solid slab 1 x 4.6	Retain as rcc solid slab 1 x 4.6	RC as 1 x 1200	Existing structure is 1 x 4.6 culvert width 9.60mtr but not in good condition hence reconstructed HPC 1row of 1200mm width 12mtr (+)ve COS for reconstruction of HPC 1row of 1200mm width 12 mtr	Committee agreed as recommended by IE to consider (+)ve COS for reconstruction of HPC 1row of 1200mm width 12 mtr OK
Extra HPC- Reconstuction							
52	8+130	8+032	1 Row 900mm	RC as Minor Bridge span 1x10	RC as 1 row 1200	As per site condition 1x1200 dia HPC width 12mtr is sufficient to accommodate the discharge. Hence Reconstructed as HPC 1 row of 1200mm, width 12mtr, when compaired with schedul B, it is (-)ve COS For Reconstruction of minor bridge span 1x 10mtr and (+) COS for reconstruction HPC 1 Row of 1200mm width 12 mtr.	Committee agreed as recommended by IE to consider (-)ve COS For Reconstruction of minor bridge span 1x 10mtr and (+) COS for reconstruction HPC 1 Row of 1200mm width 12 mtr as per hydraulics there is no need of minor bridge OK
53	11+425	11+400	Extra	Extra	RC as 1 row 1200	as per site condition , there is need of C.D. work which is not provided in schedule Hence constructed HPC 1 row of 1200mm width 12.00mtr .(+)ve COS for construction 1row of 1200mm HPC width 12.0mtr	Committee agreed as recommended by IE to consider. (+)ve COS for construction 1row of 1200mm HPC width 12.0mtr OK

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Sun.	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reasons and Recommendation of Independent Engineer	Decision of Committee
54	11+586	11+500	Extra	Extra	RC as 1 row 1200	as per site condition , there is need of C.D. work which is not provided in schedule Hence constructed HPC 1 row of 1200mm width 12mtr.(+)ve COS for construction 1row of 1200mm HPC width 12mtr	Committee agreed as recommended by IE to consider. (+)ve COS forconstruction 1row of 1200mm HPC width 12mtr
55	21+000	20+608	Extra	Extra	RC as 2 row 1200	As per site existing structure is HPC 2 rows of 900mm ,width 7.1mtr not in good condition and not identified in Schedule- A or B. Hence reconstructed HPC 2 Rows of 1200mm width 12mtr (+) ve COS for reconstruction of HPC 2 rows of 1200mm width 12mtr	Committee agreed as recommended by IE to consider (+) ve COS for reconstruction of HPC 2 rows of 1200mm width 12mtr
56	50+625	50+500	Extra	Extra	Reconstruction as 1 row 1200	Existing structure is HPC 1 row of 1200mm width 7.5mtr is not in good condition , not identified in Schedule - A or B.Hence reconstruction is done for HPC 1 row of 1200mm width 12mtr.(+) ve COS for reconstruction of 1row of 1200mm HPC width 12mtr.	Committee agreed as recommended by IE to consider (+) ve COS for reconstruction of 1row of 1200mm HPC width 12mtr.
57	101+050	100+600	Extra	Extra	RC as 1 row 1200	Existing structure is HPC with 1row of 900mm width 8.5mtr not in good condition and not identified in Schedule-Aor B. Reconstructed HPC 1 row of 1200 mm Width 12mtr .(+) ve COS for reconstruction of HPC 1 row of 1200 mm width 12 mtr	Committee agreed as recommended by IE to consider (+) ve COS for reconstruction of HPC 1 row of 1200 mm width 12 mtr
58	102+585	102+070	Extra	Extra	RC as 1 row 1200	As per site condition there is no existing structure and further there is need for C.D. work which is not provided in Schedule-A or B.Hence reconstructed HPC 1 row of 1200mm width 12mtr. (+)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider(+) COS for construction of 1 row of 1200 mm HPC width 12 mtr.

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S.no	Scheduled Chainage	Designed Chainage	Existing Detail as per Scheduled - A	Development Proposal as per Schedule - B	Actual Construction by Concessionaire at Site	Reason and Recommendation of Independent Engineer	Decision of Committee
59	118+385	118+208	Extra	Extra	RC as 1 row 1200	As per site condition there is no existing structure and further there is need for C.D. work which is not provided in Schedule-A or B.Hence reconstructed HPC 1 row of 1200mm width 12mtr. (+)ve COS for reconstruction of HPC 1 Row of 1200mm width12mtr	Committee agreed as recommended by IE to consider (+) COS for construction of 1 row of 1200 mm HPC width 12 mtr.
60	121+385	121+360	Extra	Extra	RC as 1 Row 900mm	As per site condition due to under ground 600mm dia mtr water supply pipe line going throw the shoulder area.it is found suitable to reconstructed HPC of 1row of 900mm width 12 mtr which is suffiecent to accomate to discharge (+)COS reconstruction of 1row of 900mm HPC width 12 mtr.	Committee agreed as recommended by IE to consider. (+)ve COS for reconstruction HPC 1row of 900mm width 12 mtr.

In Principle approval for change of Scope is Agreed and recommended by the committee for above works as per remarks of last column. Further it has been instructed to Independent Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively

Nitin Shrivastava GM M/s DBL	Team leader Independent Engineer	B.S Meena Divisional manager MPRDC	A.L.Suryavanshi GM(BOT) MPRDC	Arun Paliwal GM (Finance) MPRDC, Bhopal)	Anil Chansoria Chief Engineer (BOT) MPRDC Bhopal	A.S Chendke Technical Advisor MPRDC Bhopal

DILIP BUILDCON LTD BHOPAL

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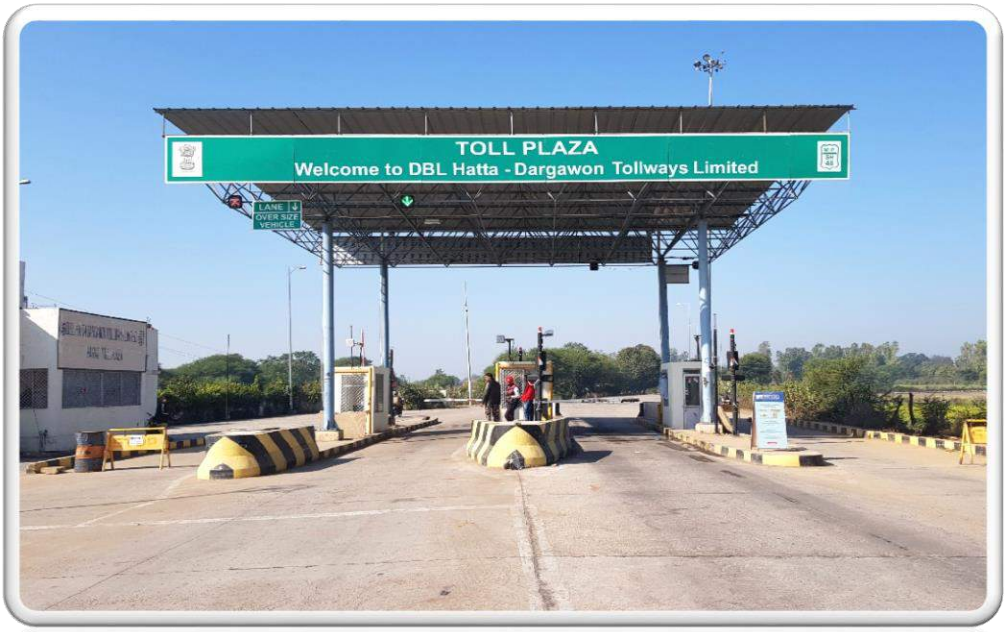
Annexure 11: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Development of Hata – Fatehpur– Rajpura – Silapuri – Bajna - Darguwa (SH-48) Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT



FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
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Development of Hata – Fatehpur– Rajpura – Silapuri – Bajna - Darguwa (SH-48) Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Hata-Darguwa	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL HATA DARGAWAN TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL HATA DARGAWAN Tollways Limited (herein after referred to as the "Concessionaire") had augmented the existing road from Km. 0+000 (Hata town) to Km. 64+400 (Dargawan Tihara) in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 10.08.2015.

Project highway starts at Hata town (Km. 0+000) and ends at Dargawan Tihara (Km. 64+400) passing through Baroda, Fatehpur, Bari, Rajpura, Bhojpura in the state of Madhya Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis.

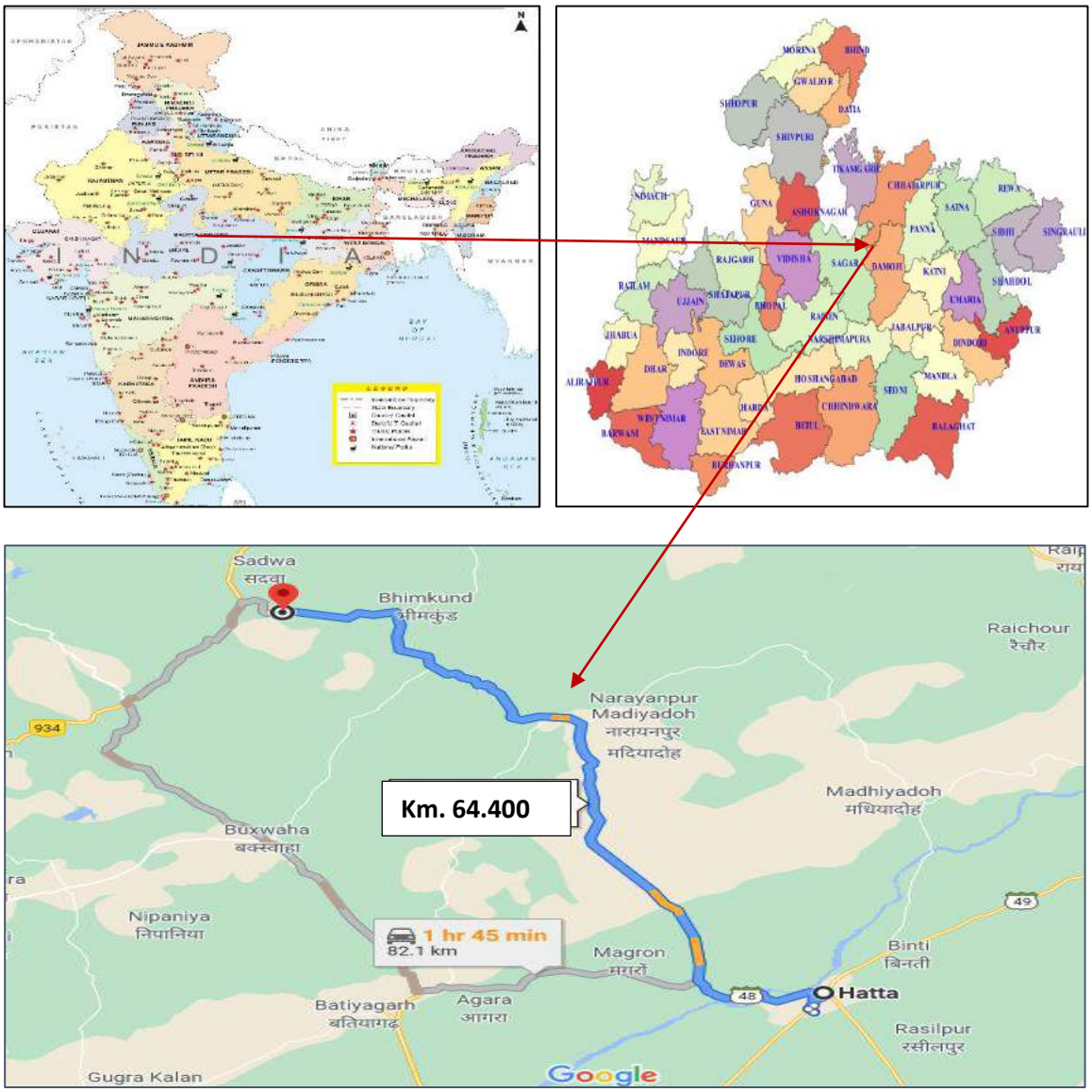

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL HATA DARGAWAN TOLL WAYS LIMITED vides agreement dated 26th March 2018.

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 The Project Data

Table 1.1: The Project Data

S.No.	Particulars	Details
1	Name of the project	Construction, operation and maintenance of road from Hata-Fatehpura-Rajpura-Silapuri-Bajna-Dargawan (SH-48) road on BOT.
2	Road Type	SH-48
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL HATA DARGAWAN Toll ways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	06.06.2015
7	Date of Agreement	10.08.2015
8	Design length as per Schedule B of CA	64.400 Kms.
9	Actual length constructed	64.400 Kms.
10	Project lane configuration	2 Lane
11	EPC cost	87.14 Cr.
12	Nature of contract	BOT (Toll + Annuity)
13	Toll collected by	Concessionaire
14	Concession period	15 years from the appointed date
15	Appointed date	10.04.2016
16	Concession end date	09.04.2031
17	Construction period	730 days from the appointed date.
18	Schedule completion date	09.04.2018
19	Date of issuance of provisional certificate (Commercial operation date)	07.03.2017
20	Annuity amount (every six months)	7.02 Cr
21	Total number of annuities payable	26 No's
22	First annuity payment date	06.09.2017
23	Total number of annuity paid	7 Nos.

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features described in the following Table 2.1 to be developed as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope.

Table 2.1: Salient Features

S.No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of 2Lane (Flexible)	64.40 Kms.	-	64.400 Kms.
2	Toll Plaza	1 Nos.	-	1 No.
3	Bus Bays / Bus Shelters	14 Nos.	-	14 Nos.
4	Major Junction	3 Nos.	-	3 Nos.
5	Minor Junctions	11 Nos.	-	11 Nos.
6	Major Bridges	02 Nos.	-	02Nos.
7	Minor Bridges	15 Nos.	-	15 Nos.
8	Pipe Culverts	73 Nos.	+1 Nos.	74 Nos.
9	Slab/Box Culverts	20 Nos.	-	20 Nos.

2.2 Typical Cross Section (TCS) Schedule

During construction the Concessionaire has followed the Typical Cross Section given in the following figures and schedule of cross sections as given in the Table 2.2 below.

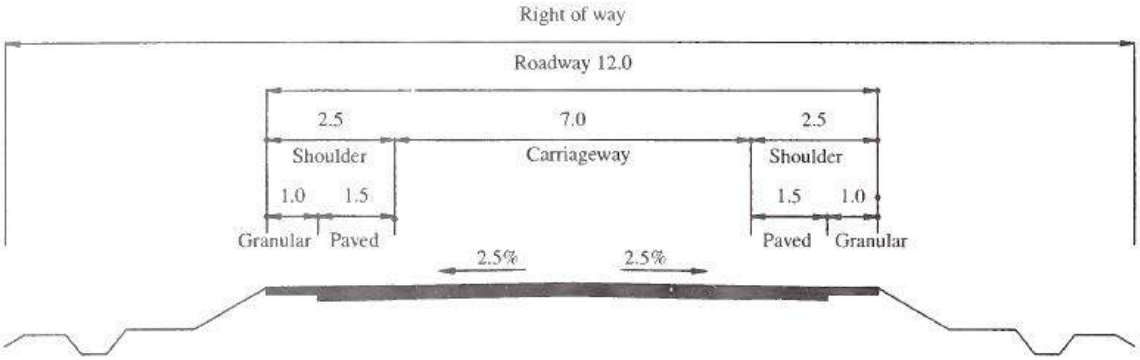

Figure 2.1: TCS 2.3 2-Lane Carriageway with Paved Shoulder (Built-up)

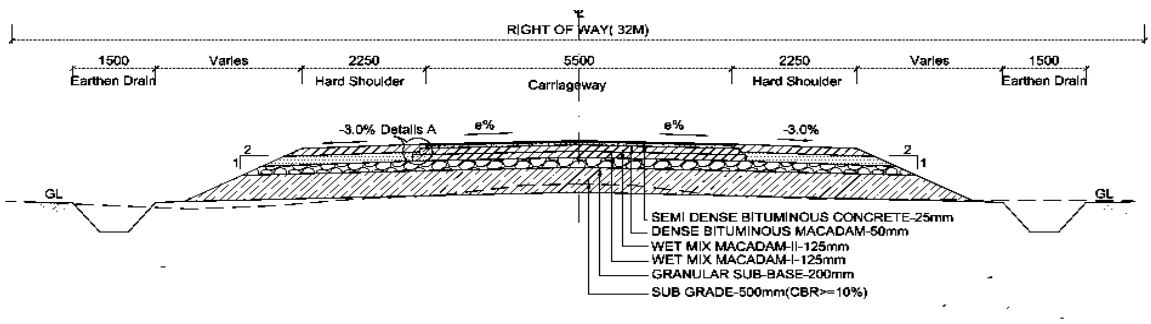

Figure 2.2: **TCS 2.6 Intermediate Lane with Hard Shoulder**

TCS schedule is provided below.

Table 2.2: TCS Schedule

S.No.	From Chainage (Km.)	To Chainage (Km.)	Length (m)	TCS Type
1	0+000	0+320	320	TCS.2.3
2	0+320	0+500	180	TCS.2.3
3	0+500	1+700	1200	TCS.2.3
4	1+700	6+900	5200	TCS.2.6
5	6+900	7+200	300	TCS.2.3
6	7+200	9+050	1850	TCS.2.6
7	9+050	9+600	550	TCS.2.3
8	9+600	15+000	5400	TCS.2.6
9	15+000	16+000	1000	TCS.2.3
10	16+000	21+400	5400	TCS.2.6
11	21+400	22+300	900	TCS.2.3
12	22+300	28+200	5900	TCS.2.6
13	28+200	28+500	300	TCS.2.3
14	28+500	34+350	5850	TCS.2.6
15	34+350	34+750	400	TCS.2.3
16	34+750	35+250	500	TCS.2.6
17	35+250	35+900	650	TCS.2.3
18	35+900	41+500	5600	TCS.2.6
19	41+500	42+300	800	TCS.2.3
20	42+300	52+400	10100	TCS.2.6
21	52+400	53+700	1300	TCS.2.3
22	53+700	56+500	2800	TCS.2.6
23	56+500	57+150	650	TCS.2.3
24	57+150	58+000	850	TCS.2.6
25	58+000	58+350	350	TCS.2.3
26	58+350	58+900	550	TCS.2.6
27	58+900	59+200	300	TCS.2.3
28	59+200	59+500	300	TCS.2.6
29	59+500	60+000	500	TCS.2.3
30	60+000	61+900	1900	TCS.2.6
31	61+900	62+500	600	TCS.2.3
32	62+500	63+700	1200	TCS.2.6
33	63+700	64+400	700	TCS.2.3

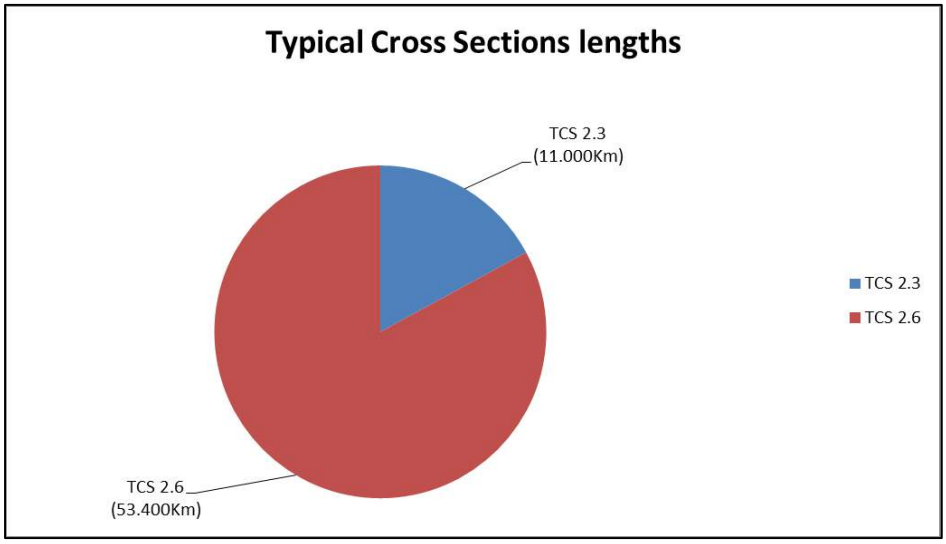

Figure 2.3: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage on the Carriageway, side drains are constructed along the main carriageway on both flanks as specified in Schedule B of the CA in strict adherence to the Standard Specifications set forth in Schedule D of the CA.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.5 Bypass/Realignment

Bypass/Realignment are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.6 Intersections

As per provisions of Schedule B of the CA, 3 Major Junctions and 11 Minor Junctions are provided. Details are given below.

Table 2.3: Summary of Junctions

S.No.	Chainage (Km.)	Type	Side	Major/Minor	Location
1	0+000	T	LHS	Major	To Damoh
2	1+250	T	RHS	Minor	To Hata
3	3+350	T	LHS	Minor	To Village
4	5+800	T	RHS	Minor	To Village
5	7+075	T	LHS	Minor	To Village
6	9+200	T	LHS	Minor	To Village

S.No.	Chainage (Km.)	Type	Side	Major/Minor	Location
7	15+375	T	RHS	Minor	To Village
8	15+950	T	RHS	Minor	To Village
9	22+350	T	LHS	Minor	To Village
10	28+100	T	RHS	Minor	To Village
11	35+275	T	RHS	Minor	To Village
12	37+100	T	LHS	Minor	To Village
13	47+625	T	BHS	Major	To Jatashankar RHS, Baxwaha LHS
14	64+400	T	BHS	Major	To Chatarpur RHS, Sagar LHS

2.7 Grade Separated Structures and underpasses

There are no Grade separated structures in the Project, as per provisions of Schedule B of the CA.

2.8 Road Under Bridge

There is no Road under Bridge in the Project, as per provisions of Schedule B of the CA.

2.9 Summary of the Pavement Details

Table 2.4: Summary of Pavement Details

S.No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	2 Lane with earthen shoulder	53.740	---	Fig 2.1 of Schedule D of CA (TCS 2.6)
2	2 Lane with paved shoulder	10.660	---	Fig 2.3 of Schedule D of CA (TCS 2.3)
3	4 Lane	---	---	Fig 2.2 of Schedule D of CA
4	Total length of the project	64.400	---	---
TYPE OF ALIGNMENT				
5	New alignment	---	---	---
6	Realignment	---	---	---
7	Strengthening	---	---	---
8	Reconstruction	64.400	---	---
9	Total length of the project	64.400	---	---

2.10 Summaryof Structures:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S.No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1	6	57	9
2	Widening	---	6	---	8
3	Reconstruction	1	3	---	---
4	New	---	---	8	3
5	Improvement	---	---	8	---
6	Total	02	15	73	20

2.11 Toll Plazas

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Km. 6+100. Salient features of Toll Plaza are provided below.

- Each side comprises of, one normal lane and one extra wide lane.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- C.C. Cameras are installed and monitored in administrative building.

2.12 Bus shelters

As per the provisions of Schedule C of the CA bus shelters are provided at 14 locations. Details as per Schedule C of the CA and provided as per site condition are given below.

Table 2.6: Bus shelters details

S.No.	Chainage (Km.)	Location
1	0+000	Hatta
2	6+900	Hatta
3	9+050	Baroda
4	15+000	Faehpur
5	21+400	Bari
6	28+200	Hardutolla
7	30+600	Jaupura
8	35+250	Rajpura
9	41+500	Silapuri
10	52+400	Bajana
11	56+500	Dimwara
12	59+500	Bujpura
13	61+900	Darguwan
14	64+400	Surajpura

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained
- Tree plantation: Tree plantation is provided on both sides, for the full length of project corridor and being maintained.
- Medical Aid Post: Provided at toll plaza location and operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza location and is functional.

W Beam crash barrier at approaches at Km. 4+000

Toll Plaza ahead board at Km. 6+100

Km. 10+200

Km. 6+100

Figure 2.4: Project facilities.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in the following Table 3.1. Couple of representative photographs is given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S.No.	Features	Remarks
1	Terrain	Rolling and mild hilly
2	Land Use	Built Up 14 %, Agriculture 64% and Barren 22%
3	Earthen shoulder	1.0 m to 1.5m Width on site
4	Junctions	14 Nos.
5	Toll Plaza	Km. 6+100
6	Sign boards	Sign boards are provided as per requirement
7	Road Markings	Lane markings are provided as per requirement
8	Bus Bays /shelters	14
9	Street Lighting	Highway lighting provided as per requirement
10	Avenue plantation	Provided

3.3 Pavement Condition:

Pavement Condition survey was carried out on the Project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future Pavement Conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general Pavement Condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The Pavement Condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition: -
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement Condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP 19 and is given in **ANNEXURE 1.** The summary of Pavement Condition is given below.

Table 3.3: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
0+000	64+400	64.400	Good

Km. 4+000

Km. 10+200

Km. 13+200

Km. 40+900

Figure 3.1: Representative photographs of pavement condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 02 Nos Major Bridges, 15 Nos Minor Bridges, 74 Nos Pipe culverts and 20 Nos Slab/ Box culverts are there along this project road.

Table 4.1: List of Structures

S.No.	Type of Structure	Numbers
1	Major bridges	02 Nos.
2	Minor Bridge	15 Nos.
3	Pipe culverts	74 Nos.
4	Slab/Box Culverts	20 Nos.

The superstructure of the Major bridges is of RCC Girder type resting on CRSM/RCC wall type Piers and Abutments with open foundation. The Super structure of the Minor bridges is of RCC solid slab and RCC Box structures and the substructures are of PCC/RCC conventional wall type, supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the Retained major bridge at Km. 4+480 is 175.0m with 14 spans. The superstructure consists of RCC Girder. Each pier and abutment are of regular CRM wall type with open foundations. Superstructure is seated on Elastomeric bearings.

The total length of the major bridge at Km 40+900 is 100.0m with 5 spans. The superstructure consists of RCC Girder. Each Pier is of RCC Circular and Abutment are of regular RCC wall type with open foundations Superstructure is seated on Elastomeric bearings. Expansion joints are of strip seal type. RCC crash barrier have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	4+480	14x12.5m	175.0
2	40+900	5x20.0m	100.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and strip seal expansion joints are to be carried out.

Figure 4.1: Overall view of the major bridge at Km. 4+480

Figure 4.2: Overall view of the major bridge at Km. 40+900

4.4 Details of Minor Bridges

There are 15 minor bridges in the project stretch. The type of Superstructure for Minor bridges is RCC solid slab and the Substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
1	1+119	4x10.0m.	40	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
2	4+250	3x1.0m.	32	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	8+870	6x8.7m.	52.2	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are Steel pipe railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
				joints.
4	9+800	1x10.0m.	11.4	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5	14+425	1x10.0m.	11.2	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6	28+200	1X8.8m.	8.8	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	35+610	2x10.0m.	22.3	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	40+000	3X7.0m.	21.0	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	41+550	2x5.8m.	11.6	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
10	43+013	2x7.2m.	14.4	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
11	44+490	1x10.0m.	10	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
12	46+765	1x7.2m.	7.2	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
13	52+935	4x7.5m.	32.3	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
14	56+400	2x7.6m.	15.2	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
15	58+450	1x10.0m.	11	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

Km. 4+250

Km. 8+870

Km. 9+800

Km. 28+200

Figure 4.3: Representative photos for minor bridges

The condition of the minor bridges is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and strip seal expansion joints are to be carried out.

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

General description of the Slab/Box Culverts

There are 20 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S.No.	Chainage (Km.)	Span (m)	Vent Size (m)
1	3+030	1 x 4.0	2.00
2	9+675	2 x 2.0	2.00
3	14+825	2 x 2.0	2.00
4	15+540	1 x 4.0	2.00
5	18+450	1 x 4.0	2.00
6	22+860	1 x 4.0	2.00
7	27+160	1 x 4.0	2.00
8	29+860	1 x 6.0	2.00
9	31+730	1 x 6.0	2.00
10	34+875	1 x 6.0	2.00
11	35+680	1 x 6.0	2.80
12	40+750	1 x 5.2	4.00
13	42+280	1 x 6.0	2.00
14	42+630	1 x 5.0	2.00
15	46+210	1 x 6.0	1.50
16	53+931	1 x 5.0	3.00
17	55+150	1 x 6.5	2.00
18	55+968	1 x 2.5	2.50
19	59+450	1 x 5.0	2.80
20	60+575	1 x 3.5	3.00

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 9+675

Km. 27+160

Km. 46+210

Km. 29+860

Figure 4.4: Representative Photographs of Slab/Box Culverts

General Description of the Pipe Culverts

There are 74 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S.No.	Chainage (Km.)	No. of Rows Dia(m)
1	0+025	1 x 1.0
2	1+460	1 x 1.0
3	2+960	1 x 1.0
4	6+536	1 x 1.0
5	7+630	1 x 1.0
6	8+195	1 x 1.0
7	9+175	1 x 1.0
8	11+125	1 x 1.0
9	12+940	1 x 1.0
10	13+840	1 x 1.0
11	15+100	1 x 1.0
12	15+340	1 x 1.0
13	16+738	1 x 0.90

S.No.	Chainage (Km.)	No. of Rows Dia(m)
38	58+200	1 x 1.0
39	58+550	1 x 1.0
40	59+230	1 x 1.0
41	60+750	1 x 1.0
42	61+180	1 x 1.0
43	62+340	1 x 1.0
44	63+980	1 x 1.0
45	3+410	2 x 1.0
46	9+210	2 x 1.0
47	12+050	2 x 1.0
48	14+825	2 x 1.0
49	21+100	2 x 1.0
50	24+120	2 x 1.0

S.No.	Chainage (Km.)	No. of Rows Dia(m)
14	20+050	1 x 1.0
15	22+400	1 x 1.0
16	22+750	1 x 1.0
17	23+545	1 x 1.0
18	26+290	1 x 1.0
19	26+700	1 x 1.0
20	29+470	1 x 1.0
21	37+110	1 x 0.90
22	38+680	1 x 1.0
23	39+340	1 x 1.0
24	40+500	1 x 1.0
25	41+210	1 x 1.0
26	42+810	1 x 1.0
27	45+570	1 x 1.0
28	46+390	1 x 1.0
29	48+605	1 x 1.0
30	50+550	1 x 1.0
31	51+160	1 x 1.0
32	52+870	1 x 1.0
33	54+350	1 x 1.0
34	54+450	1 x 1.0
35	54+550	1 x 1.0
36	56+701	1 x 1.0
37	56+930	1 x 1.0

S.No.	Chainage (Km.)	No. of Rows Dia(m)
51	24+510	2 x 1.0
52	25+205	2 x 1.0
53	25+865	2 x 1.0
54	31+630	2 x 1.0
55	32+100	2 x 1.0
56	33+250	2 x 1.0
57	34+040	2 x 1.0
58	35+720	2 x 1.2
59	37+970	2 x 1.0
60	47+700	2 x 1.0
61	48+980	2 x 1.0
62	49+180	2 x 1.0
63	5+560	3 x 1.0
64	7+850	3 x 1.0
65	11+560	3 x 1.0
66	13+640	3 x 1.0
67	36+990	3 x 1.0
68	42+340	3 x 1.0
69	57+560	3 x 1.0
70	60+198	4 x 1.0
71	61+700	3 x 1.0
72	62+850	3 x 1.0
73	63+980	1 x 1.0
74	64+980	1 x 1.0

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to that no permanent deflections result in the subgrade, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the top surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

5.3 Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S.No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	7%
2	Design Life (Years)	15 years
3	Design Traffic* (MSA)	3.2 MSA actual 10 MSA design
4	Surface course (BC)	40 mm
5	Binder course (DBM)	60 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	230 mm

5.4 Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Real Time Traffic From COD & Project Traffic Current Years With 5% Growth For CMSA

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2018	140	76	18	7	18	120	0.11	0.11	2	Actual
2019	316	136	23	10	31	201	0.19	0.31	3	Actual
2020	394	136	22	8	34	200	0.19	0.50	4	Actual
2021	413	143	23	9	35	210	0.20	0.70	5	Projected
2022	434	150	24	9	37	220	0.21	0.91	6	Projected
2023	456	158	25	10	39	231	0.22	1.13	7	Projected
2024	478	166	26	10	41	243	0.23	1.36	8	Projected
2025	502	174	28	11	43	255	0.24	1.61	9	Projected
2026	527	182	29	11	45	268	0.26	1.87	10	Projected
2027	554	192	30	12	47	281	0.27	2.13	11	Projected
2028	581	201	32	13	50	295	0.28	2.42	12	Projected
2029	610	211	34	13	52	310	0.30	2.71	13	Projected
2030	641	222	35	14	55	325	0.31	3.03	14	Projected
2031	673	233	37	14	57	342	0.33	3.35	15	Projected

Based on the above actual traffic, estimated MSA at 15 years is 3.35 of TP respectively. However, Traffic considered in pavement design (10 MSA) is more than estimated traffic (3.35 MSA) based on actual traffic. Hence the pavement design adopted is found in order.

Details of Pavement design for Rigid Pavement are as follows:

Table 5.3: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	7 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	250
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	400
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	710

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.5 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 10 MSA for a design life of 15 years for Bituminous layers and Granular layers (up to end of year 2031), whereas the actual traffic is 3.35 MSA for 15 years. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of 7 years of design life and prior to the end of concession period to evaluate the requirement of overlay.

5.6 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed on or before 2023 and 2030.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP-88	Manual of Road Safety Audit

6.2 Road Safety Audit

During the site visit, it is observed that all safety items are provided as shown in the following **Table 6.2.**

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good
		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few locations reflectors were missing on the sign boards and few sign boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly

Accident Warning board at Km. 0+500

Speed Limit board at Km. 4+000

W Beam MCB at approaches at Km. 4+000

Safety at bridge approaches at Km. 4+250

Pedestrian Crossing board at Km. 8+000

Pedestrian Crossing board at Km. 15+540

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are done for road users along the project road same are found to be in conformity with project highway requirements and good industry practice. However, a continues monitoring on safety arrangements is highly appreciated during the operation and maintenance period.

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CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plazas on the project road at Km. 6+100. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes is 3.2 m and in extra wide lane is 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of equipment provided at toll plaza and control room

S.No.	Equipment Description	Quantity
Lane Equipment		
1	Over Head Lane Signals (OHLS)	2
2	Barrier	2
3	LPIC	4
4	Automatic Vehicle Classifier (AVC)	2
5	Traffic light	4
6	Retro Frequency Identification (RFID) Reader	4
7	Printer	2
8	Booth camera	4
9	Audit camera	2
10	Intercom (Internal)	1
11	Keyboard	1
12	Lan hardware / optical fiber	1
13	Panic Foot Switch	4
14	Violation Alarm	4
Equipment in Control Room & Other Rooms		
Control Room		
1	Monitor	1
2	Workstation	1
3	Keyboard	1
4	Mouse	1
Server Room		
1	Server	1
2	Monitor	1
3	POE TENDA	1
4	HIKVISION NVR (Net Work Video Recorder)	1
5	control room camera	1
1.	Building camera	1

S.No.	Equipment Description	Quantity
POS Room		
1	Monitor	1
2	Workstation	1
3	Keyboard	1
4	Mouse	1
5	Printer	1

7.3 Vehicles

The list of vehicles, which were observed at site for operation of highway and toll plaza, is presented below**.**

Table 7.2: List of Vehicles

S.No.	Vehicle Type	No of Vehicles
1	Patrol Vehicle	2
2	Ambulance	1

Toll Plaza at Km. 6+100

Toll Building at Km. 6+100

Figure 7.1: Representative Photos of Toll Plaza at Km. 6+100

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past two years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details as per schedule N of CA

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr 2018-Mar 2019	115293	49705	8345	3787	11424	188554
Apr 2019-Mar 2020	144024	49843	7922	3102	12264	217155
					AACGR* (%)	**15.17**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8.2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	74530	768	31906	7870	3052	12257	130383
Toll Revenue collection in Rs.	2608550	61450	2794940	1437940	673860	5417030	12993770

The figures shown in Table 8.1 are Real time traffic data (AADT) on project road for the past two years and the growth rate is calculated to be 15.17%. It is pertinent to note that the figures given in Table 8.1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (Table 8.2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	206	87	22	8	34	151	206	131	65	25	151	372	Actual
2021	217	92	23	9	35	158	217	138	68	26	159	391	Projected
2022	227	96	24	9	37	166	227	145	71	28	167	410	Projected
2023	239	101	25	10	39	175	239	152	75	29	175	431	Projected
2024	251	106	26	10	41	183	251	159	79	30	184	452	Projected
2025	263	112	28	11	43	193	263	167	83	32	193	475	Projected
2026	276	117	29	11	45	202	276	176	87	34	203	499	Projected
2027	290	123	30	12	47	212	290	184	91	35	213	523	Projected
2028	305	129	32	12	50	223	305	194	96	37	223	550	Projected
2029	320	136	33	13	52	234	320	203	100	39	234	577	Projected
2030	336	142	35	14	55	246	336	214	105	41	246	606	Projected
2031	353	150	37	14	57	258	353	224	111	43	258	636	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in Table 8.4.

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1
Location	Km. 6+100
4 lane length in kms.	0
2 lane length in kms.	64.42
Agreement Date	10-08-2015
Appointed Date	10-04-2016
Concession period	15
Commercial operation date	06-03-2017
Concession End Date	09-04-2031
Traffic study year	2020
Vehicle Type	**AADT**
Car/Jeep/Van	206
2-axle Bus	87
LCV/LGV	22
2A-Truck	8
MAV (2A-6A)	34

Particular	Toll plaza 1
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 at Km. 6+100	Remarks
2019-20	129.9377	Actual
2020-21	141.9371	Projected
2021-22	156.3655	Projected
2022-23	169.5336	Projected
2023-24	183.5495	Projected
2024-25	198.7709	Projected
2025-26	217.6724	Projected
2026-27	235.0047	Projected
2027-28	253.4879	Projected
2028-29	276.8745	Projected
2029-30	298.0787	Projected
2030-31	320.8868	Projected
2031-32	8.509685	9 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
iii. carrying out preventive and periodic maintenance of the Project road;
iv. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

v. undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
vi. Functioning of the lighting system;
vii. Functioning of the Patrolling System
viii. Functioning of rescue and medical aid services
ix. Ambulance as and when required
x. Functioning of the Project Facilities
xi. Administrative, Operational and Maintenance Base Camp
xii. Truck Lay byes
xiii. Pickup Bus stops / Bus Bays
xiv. Protection of the environment and provision of equipment and materials therefore;
xv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xvi. Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance:

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S. No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2023	Planned to Execute
2	2nd Periodic Maintenance	2030	Planned to Execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per Programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness

measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Aug. 2020. As per Schedule K of the CA, If the roughness value exceeds 3000mm in a Km, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Jan 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.360	0.176		0.30	0.84
2021	0.370	0.182		0.31	0.86
2022	0.381	0.187		0.32	0.89
2023	0.393	0.193	10.04	0.33	10.96
2024	0.405	0.199		0.34	0.94
2025	0.417	0.205		0.35	0.97
2026	0.429	0.211		0.36	1.00
2027	0.442	0.217		0.37	1.03
2028	0.455	0.224		0.38	1.06
2029	0.469	0.230		0.40	1.09
2030	0.483	0.237	12.02	0.41	13.15
2031	0.012	0.006		0.01	0.03
Total	**4.62**	**2.27**	**22.06**	**3.89**	**32.83**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D of the CA.
- operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA).
- performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental.

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

Provide performance security to the Authority

- Executed and procured Escrow Agreement & Substitution Agreement.
- Procured all applicable permits specified in Schedule E of the CA.
- Executed financing Agreements and delivering 3 copies of Financial Package.
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire.

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws.
- Procure appropriate rights for obtaining materials.
- Perform and fulfil its obligations under financing Agreements.
- To make reasonable efforts to facilitate the acquisition of land required for execution.
- Transfer the Project road upon termination of the CA.

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date.
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the CA. Provisional Completion Certificate given in **ANNEXURE 7.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDC and the same are given in **ANNEXURE 9**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road.
- Collecting and appropriating the Fee.
- Minimizing the disruption to traffic in the event of accidents.
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment.
- Preventing any un authorized use of the Project road.

- Protection of environment and provision of equipment and materials.
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of the CA (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.

- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8):

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Article 25)

The Annuity payment of Rs 7.02 Crores is due and payable by the Authority to the Concessionaire for each six months after COD as set forth in Clause 25.2.1 and Schedule Y of CA.

Table 10.1: Status of Annuity Payments

Particulars	Payment Paid on
Ist Annuity	4-Oct-17
2nd Annuity	31-Mar-18
3rd Annuity	27-Sep-18
4th Annuity	20-Mar-19
5th Annuity	9-Sep-19
6th Annuity	7-Mar-20
7th Annuity	7-Sep-20
8th Annuity	-
9th Annuity	-
10th Annuity	-
11th Annuity	-
12th Annuity	-
13th Annuity	-
14th Annuity	-
15th Annuity	-

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period.
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 8**.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of Property
			From	To	
Civil Engineering Completed Risk	National Insurance Co. Ltd	32130044190001995	27.3.2020	26.3.2021	Road and structures, tollbooth, Equipment. Road furniture etc.
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/69	7.12.2020	6.12.2021	EEI Equipment-Road and bridge stretch connecting from Hata to Dargawon
Employees compensation Insurance Policy	HDFC ERGO General Insurance Co Ltd	3114203678157100000	12.10.2020	11.10.2021	Employees compensation belongs to Road paving, tarring and road making of DBL and sub-contractor engaged in DBL, Engineers, Supervisors, Managers, daily labour etc.

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. Major defects were not noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted. The traffic growth observed is 15.17%, whereas 5% fairly accurate growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Km.6+100 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per site requirement. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively. Based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM)/Periodic maintenance to be carried out in the year 2023.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000	2	3	1					F		ES	F	F	ULD	PF	
1+000	2+000	2	3						F		ES	F	F	ULD	PF	
2+000	3+000								G		ES	F	F	ULD	PF	
3+000	4+000		1			M			F		ES	F	F	ULD	PF	
4+000	5+000								G		ES	F	F	ULD	PF	
5+000	6+000								G		ES	F	F	ULD	PF	
6+000	7+000	2	3						F		ES	F	F	ULD	PF	
7+000	8+000								G		ES	F	F	ULD	PF	
8+000	9+000	2	3	1					F		ES	F	F	ULD	PF	
9+000	10+000								G		ES	F	F	ULD	PF	
10+000	11+000								G		ES	F	F	ULD	PF	
11+000	12+000		1			M			F		ES	F	F	ULD	PF	
12+000	13+000								G		ES	F	F	ULD	PF	
13+000	14+000								G		ES	F	F	ULD	PF	
14+000	15+000								G		ES	F	F	ULD	PF	
15+000	16+000								G		ES	F	F	ULD	PF	
16+000	17+000								G		ES	F	F	ULD	PF	
17+000	18+000								G		ES	F	F	ULD	PF	
18+000	19+000								G		ES	F	F	ULD	PF	
19+000	20+000								G		ES	F	F	ULD	PF	
20+000	21+000								G	2	ES	F	F	ULD	PF	
21+000	22+000								G		ES	F	F	ULD	PF	
22+000	23+000								G		ES	F	F	ULD	PF	
23+000	24+000								G		ES	F	F	ULD	PF	
24+000	25+000								G		ES	F	F	ULD	PF	
25+000	26+000								G		ES	F	F	ULD	PF	
26+000	27+000								G		ES	F	F	ULD	PF	
27+000	28+000								G		ES	F	F	ULD	PF	
28+000	29+000								G		ES	F	F	ULD	PF	
29+000	30+000								G		ES	F	F	ULD	PF	
30+000	31+000								G		ES	F	F	ULD	PF	
31+000	32+000								G		ES	F	F	ULD	PF	
32+000	33+000								G	2	ES	F	F	ULD	PF	
33+000	34+000								G		ES	F	F	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
34+000	35+000								G		ES	F	F	ULD	PF	
35+000	36+000								G		ES	F	F	ULD	PF	
36+000	37+000								G		ES	F	F	ULD	PF	
37+000	38+000								G		ES	F	F	ULD	PF	
38+000	39+000								G		ES	F	F	ULD	PF	
39+000	40+000		1				3		F		ES	F	F	ULD	PF	
40+000	41+000								G		ES	F	F	ULD	PF	
41+000	42+000								G		ES	F	F	ULD	PF	
42+000	43+000								G		ES	F	F	ULD	PF	
43+000	44+000								G		ES	F	F	ULD	PF	
44+000	45+000								G		ES	F	F	ULD	PF	
45+000	46+000								G		ES	F	F	ULD	PF	
46+000	47+000								G		ES	F	F	ULD	PF	
47+000	48+000								G		ES	F	F	ULD	PF	
48+000	49+000								G		ES	F	F	ULD	PF	
49+000	50+000								G		ES	F	F	ULD	PF	
50+000	51+000								G		ES	F	F	ULD	PF	
51+000	52+000								G		ES	F	F	ULD	PF	
52+000	53+000								G		ES	F	F	ULD	PF	
53+000	54+000								G		ES	F	F	ULD	PF	
54+000	55+000								G		ES	F	F	ULD	PF	
55+000	56+000								G		ES	F	F	ULD	PF	
56+000	57+000								G		ES	F	F	ULD	PF	
57+000	58+000								G		ES	F	F	ULD	PF	
58+000	59+000								G		ES	F	F	ULD	PF	
59+000	60+000								G		ES	F	F	ULD	PF	
60+000	61+000								G		ES	F	F	ULD	PF	
61+000	62+000								G		ES	F	F	ULD	PF	
62+000	63+000								G		ES	F	F	ULD	PF	
63+000	64+000								G		ES	F	F	ULD	PF	
64+000	64+400								G		ES	F	F	ULD	PF	

Annexure 2: Condition of Structures

S.No	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
1	1+119	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Vegetation observed
2	4+250	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
3	4+480	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
4	8+870	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	9+800	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
6	14+425	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
7	28+200	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
8	35+610	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
9	40+000	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
10	40+900	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
11	41+550	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
12	43+013	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
13	44+490	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
14	46+765	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
15	52+935	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
16	56+400	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
17	58+450	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good

Annexure 3: Condition of Culverts

Condition of Box/slab Culverts

S.No	Chainage (Km.)	Box/Slab	Return wall	Quadrant pitching	Toe wall	Aprons	Remarks
1	3+030	Good	Good	Fair	Fair	Fair	-
2	9+675	Good	Good	Fair	Fair	Fair	-
3	14+825	Good	Good	Fair	Fair	Fair	-
4	15+540	Good	Good	Fair	Fair	Fair	-
5	18+450	Good	Good	Fair	Fair	Fair	-
6	22+860	Good	Good	Fair	Fair	Fair	-
7	27+160	Good	Good	Fair	Fair	Fair	-
8	29+860	Good	Good	Fair	Fair	Fair	-
9	31+730	Good	Good	Fair	Fair	Fair	-
10	34+875	Good	Good	Fair	Fair	Fair	-
11	35+680	Good	Good	Fair	Fair	Fair	-
12	40+750	Good	Good	Fair	Fair	Fair	-
13	42+280	Good	Good	Fair	Fair	Fair	-
14	42+630	Good	Good	Fair	Fair	Fair	-
15	46+210	Good	Good	Fair	Fair	Fair	-
16	53+931	Good	Good	Fair	Fair	Fair	-
17	55+150	Good	Good	Fair	Fair	Fair	-
18	55+968	Good	Good	Fair	Fair	Fair	-
19	59+450	Good	Good	Fair	Fair	Fair	-
20	60+575	Good	Good	Fair	Fair	Fair	-

Condition of Hume Pipe Culverts

S. No	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+025	Good	Fair	Fair	Fair
2	1+460	Good	Fair	Fair	Fair
3	2+960	Good	Fair	Fair	Fair
4	6+536	Good	Fair	Fair	Fair
5	7+630	Good	Fair	Fair	Fair
6	8+195	Good	Fair	Fair	Fair
7	9+175	Good	Fair	Fair	Fair
8	11+125	Good	Fair	Fair	Fair
9	12+940	Good	Fair	Fair	Fair
10	13+840	Good	Fair	Fair	Fair
11	15+100	Good	Fair	Fair	Fair
12	15+340	Good	Fair	Fair	Fair
13	16+738	Good	Fair	Fair	Fair
14	20+050	Good	Fair	Fair	Fair
15	22+400	Good	Fair	Fair	Fair
16	22+750	Good	Fair	Fair	Fair
17	23+545	Good	Fair	Fair	Fair
18	26+290	Good	Fair	Fair	Fair
19	26+700	Good	Fair	Fair	Fair
20	29+470	Good	Fair	Fair	Fair
21	37+110	Good	Fair	Fair	Fair
22	38+680	Good	Fair	Fair	Fair
23	39+340	Good	Fair	Fair	Fair
24	40+500	Good	Fair	Fair	Fair
25	41+210	Good	Fair	Fair	Fair
26	42+810	Good	Fair	Fair	Fair
27	45+570	Good	Fair	Fair	Fair
28	46+390	Good	Fair	Fair	Fair
29	48+605	Good	Fair	Fair	Fair
30	50+550	Good	Fair	Fair	Fair
31	51+160	Good	Fair	Fair	Fair
32	52+870	Good	Fair	Fair	Fair
33	54+350	Good	Fair	Fair	Fair
34	54+450	Good	Fair	Fair	Fair
35	54+550	Good	Fair	Fair	Fair
36	56+701	Good	Fair	Fair	Fair
37	56+930	Good	Fair	Fair	Fair
38	58+200	Good	Fair	Fair	Fair

S. No	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
39	58+550	Good	Fair	Fair	Fair
40	59+230	Good	Fair	Fair	Fair
41	60+750	Good	Fair	Fair	Fair
42	61+180	Good	Fair	Fair	Fair
43	62+340	Good	Fair	Fair	Fair
44	63+980	Good	Fair	Fair	Fair
45	3+410	Good	Fair	Fair	Fair
46	9+210	Good	Fair	Fair	Fair
47	12+050	Good	Fair	Fair	Fair
48	14+825	Good	Good	Fair	Good
49	21+100	Good	Fair	Fair	Good
50	24+120	Good	Good	Fair	Fair
51	24+510	Good	Good	Fair	Fair
52	25+205	Good	Good	Fair	Fair
53	25+865	Good	Good	Fair	Fair
54	31+630	Good	Good	Fair	Good
55	32+100	Good	Good	Fair	Good
56	33+250	Good	Good	Fair	Good
57	34+040	Good	Good	Fair	Good
58	35+720	Good	Good	Fair	Good
59	37+970	Good	Good	Fair	Good
60	47+700	Good	Good	Fair	Good
61	48+980	Good	Good	Fair	Good
62	49+180	Good	Good	Fair	Good
63	5+560	Good	Good	Fair	Fair
64	7+850	Good	Good	Fair	Fair
65	11+560	Good	Good	Fair	Fair
66	13+640	Good	Good	Fair	Good
67	36+990	Good	Good	Fair	Good
68	42+340	Good	Good	Fair	Good
69	57+560	Good	Good	Fair	Good
70	60+198	Good	Good	Fair	Good
71	61+700	Good	Good	Fair	Good
72	62+850	Good	Good	Fair	Good
73	63+980	Good	Good	Fair	Good
74	64+980	Good	Good	Fair	Good

Annexure 4: Toll Revenue Calculations

Toll Plaza- at Km. 6+100

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km. 6+100
Car/Taxi/Van	206
LCV	87
Bus	22
Truck	8
MAV	34

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-32	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99%	1%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates :**

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km.6.100
Car/Taxi/Van	35.00
LCV	90.00
Bus	185.00
Truck	220.00
MAV	440.00

Toll Plaza- at Km. 6+100 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in Rs	Total in Lakh.	Cumulative (in Lacs)
2019-20	2608550	61450	2794940	1437940	673860	5417030	12993770	129.9377	129.9377
2020-21	2738978	68555.16	3182624	1570065	737058	5896434	14193713	141.9371	271.8748
2021-22	3286773	71982.91	3341755	1735335	807559.2	6393144	15636549	156.3655	428.2403
2022-23	3451112	80028.06	3693518	1867654	865602.5	6995445	16953360	169.5336	597.7739
2023-24	3623667	88697.77	4072104	2056697	945979.9	7567800	18354946	183.5495	781.3234
2024-25	3804851	93132.66	4479314	2209754	1032231	8257805	19877088	198.7709	980.0943
2025-26	4494480	102936.1	4703280	2425707	1124742	8916093	21767238	217.6724	1197.767
2026-27	4719204	108082.9	5162919	2602362	1202452	9705453	23500472	235.0047	1432.771
2027-28	4955164	119161.4	5656763	2848756	1307666	10461276	25348787	253.4879	1686.259
2028-29	5781025	131077.5	5939601	3052238	1420396	11363110	27687448	276.8745	1963.134
2029-30	6070076	137631.4	6496439	3333044	1541130	12229547	29807868	298.0787	2261.212
2030-31	6373580	151081.8	7094111	3566998	1644286	13258619	32088676	320.8868	2582.099
2031-32	6692259	165533.1	7735310	3886682	1781310	14250405	850968.5	8.509685	2590.609

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km.	64.4	12	4	350	1,081,920	04 Nos. of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km.	10.66	24	4	350	358,176	04 Nos. of Labour
3	Watering in Median Plants	Once in Week	Km.	10.66	52	1	1939	1,074,826	01 Nos. of Labour
4	Watering in Avenue plants	Once in Week	Km.	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km.	10.66	12	0	21000	-	02 Nos. of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km.	32.2	2	5	350	112,700	5 Nos. of l Labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	93	2	2	650	241,800	3 Nos. of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km.	64.4	4	2	350	180,320	02 Nos. of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	15	6	2	350	63,000	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	1.00	6	60	350	126,000	02 Nos. of Labour for 30 days
11	Bridges	Half yearly	Nos.	15	2	2	350	21,000	02 Nos. of Labour for removal of vegetation/Structure
								3,259,742	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12	1	200000	200,000	(2000000 is the cost of vehicle, considering 10% Rental per year)

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
									including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	0.0	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	0.0	12	0	12000	-	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos.		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos.	3.0	12	0	2500	6,000	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1		-	
9	Toll plaza AMC	Yearly	Nos.		12	1	5000	60,000	10000/month
								266,000	

1	Patrolling vehicle	Monthly	Nos.	12			10000	0	(1500000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Ambulance	Monthly	Nos.	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Tow away trucks and Crane	Monthly	Nos.	12			40000	0	(2000000 is the cost of vehicle,

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
									considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								70,000	
								3,595,742.00	

Incidental cost for 1 year

	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	1503	516	775,548	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm.	1	1	302	168	50,736	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	966	225	652,050	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 nos)
5	MBCB	Monthly	RMT.			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	64.4	4	16	2250	144,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total volume

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT.	0		0	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**1,764,334**	

Operational Expenses

S.No.	PARTICULARS	Amount
1	Man Power	₹ 11,88,000
2	Fuel for Generator & Vehicles	₹ 13,92,000
3	Electricity	₹ 3,30,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 33,827
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 30,28,827**

Major Maintenance Summary

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2023	**9,41,71,380**	2.20	3.0%	**10,03,86,691**	**10.04**
2nd Major Maintenance - Highways	01-04-2030	9,41,71,380	9.20	3.0%	**12,01,62,681**	**12.02**
				Total	**₹ 22,05,49,372**	**22.06**

Major Maintenance BOQ

S.No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Chapter 4. Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	4,82,780.00	14.00	67,58,920	4,82,780.00	14.00	67,58,920
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00		-	7,480.00	

S.No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	6,034.75	6,800.00	4,10,36,300	6,034.75	6,800.00	4,10,36,300
	Micro surfacing	Sqm	2,41,390.00	160.00	3,86,22,400	2,41,390.00	160.00	3,86,22,400
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
4	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**8,64,17,620**			**8,64,17,620**
	Chapter 9 Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref.	Sqm	15,026.67	516.00	77,53,760	15,026.67	516.00	77,53,760

S.No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	to Technical specification 803.							
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total Chapter 9			-	**77,53,760**		-	**77,53,760**
	Grand Total				**9,41,71,380**			**9,41,71,380**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.

MPRDC

(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPABX), 0755-2550995, Fax : 91-755-2572643
Website : www.mprdc.nic.in

No. MPRDC/BOT/H-F-Bajna/2015/ 3437
Bhopal, dated 06, June,2015

M/s Dilip Buildcon Ltd.,
Plot No. 05,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal
Fax: 4089998

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Hata-Fatehput-Rajpura-Silapuri-Bajna-Dargawon (SH-48) Road on BOT (Toll + Annuity)basis**

In response to your Pre-Qualification, you have submitted Technical and Financial Bid for development of **Hata-Fatehput-Rajpura-Silapuri-Bajna-Dargawon (SH-48) Road on BOT (Toll + Annuity) basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **₹ 7,02,00,000.00 (Rupees seven crores two lacs only)** as Annuity Amount payable in terms of Clause.25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Thanking you,

Yours faithfully

Encl: **Duplicate copy of LoA**

(Arun Paliwal)
General Manager

Connecting People Through quality infrastructure

Annexure 7: **Provisional Completion Certificate**

MSV International, Inc.
D-7, South City-1, Gurgaon-122001
Haryana, India \
Tel. 0091-124-4002603, 04
Fax : 0091-124-4002605
E-mail : info@msvgroup.com

ISO 9001 : 2008
Certified Company

Bhopal Office :
5, Rishi Nagar, Char Imli,
Bhopal (M.P.)
Phone : 0755-2430131

Ref No.: MSV/ Sagar Zone/2017/1450 **Date: 07.03.2017**

To,
The Project Manager
M/s DBL Hata Dargawan Tollways Ltd.
Hata Darguwan Road Project, Fatepur Base Camp.
At Km 17+100 on SH 48 village fatepur Tah. Hata
District- Damoh (M.P.) Pin code – 470775

Sub: Independent Engineer for Up-gradation, Strengthening, Widening, Operation and Maintenance of **"Hata Fatehpur – Rajpura- Silapuri-Bahna Darguwan Road"**. M.P.State Highway Project under Sager Zone on BOT (Toll + Annuity) Basis. Reg. **Provisional Completion Certificate of Hata – Dargawon Road.**

Ref:- Your letter No. DBL/ Hata – Dargawon/MPRDC/2015/171 Dated 09.02.2017.

Dear Sir,

As you have requested vide your letter under reference, Please find enclosed herewith **"Provisional Completion Certificate"** of Hata – Dargawon Road, issued in pursuance to provision of clause 14.3 with the Punch list of remaining work.

Thanking You,

Sincerely
For MSV International Inc.,

MSV International Inc. Team Leader Sagar Zone, BHOPAL

Sanjay Sharma
Team Leader

Copy to i. The Engineer In Chief MPRDC Bhopal, Enclosed Provisional completion certificate with punch list for further necessary action please.
ii The Divisional Manager MPRDC, Sagar
iii. The Director Project MSV International Inc., Gurgaon

Enclosed: As above

Annexure 8: Insurance

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001995

जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022
State Code: 23, Madhya Pradesh
GSTIN: 23AAACN9967F1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्तुरोत /Business Source: 910355
विक्रय चैनल कोड/**Sales Channel** Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

गुराहक का नाम /Customer Name: DBL HATA DARGAWON TOLLWAYS LTD
पता/ Address: PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD , BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016
Cell: 9826292328

गुराहक आईडी /Customer ID: 9701881847
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAFCD4156J

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 8,99,824.00	कवर नोट संख्या और तिथि / Cover Note Number and Date	NA
CGST	₹ 80,984.00		
SGST/UTGST	₹ 80,984.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	8800200327087182 Dt: 27/03/2020
कम जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt: 27/03/2020
कुल /**Total Amount**	₹ 10,61,792.00	पछिली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Ten Lakh Sixty One Thousand Seven Hundred Ninety Two Only)

Location:Hata-Fatehpur-Rajpura- Silapuri-Bajna-Dargaown (SH-48) Road, Punjab Patiala, Rajpura, 140401.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone III	63,50,00,000.00	1,00,000.00
2	Roads		Zone III	6,50,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable**:Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS

1 Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land
3 No Coverage for (Road) Transportation Tunnels
4 No Coverage for Marine Vessel Impact Damage
5 Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess

Printed on 27/03/2020 by ID: 75159

Page no: 1

INSURANCE

Scanned with CamScanner

Signer: ATUL JERATH
Date: Fri, Dec 11, 2020 12:21:30 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/00**	**Prev Policy No**	:
Cover Note No	:	Cover Note Dt	:
Insured's Code	: 96499054	Issuing Office Code	: 171200
Insured's Name	: DBL HATA DARGAWON TOLLWAYS LTD. (GSTIN: 23AAFCD4156J1ZQ)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Road Hatta Fatehpur Rajpura Silapuri Bajna Dargawon (MP), DAMOH 470775	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / avni.sheth@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000170 (1140)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898205111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2350033/**

Period of Insurance : FROM 00:00 ON 07/12/2020 TO MIDNIGHT OF 06/12/2021

Collection No & Dt : DC_I_INDCSH 3214001222 - 07/12/2020 GST INVOICE NO :2419689119 UIN :0

Gross Premium : 2,787 GST : 502 Stamp Duty : 1 Total : 3,289

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 61,90,056

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Hata to Dargawon

MADHYA PRADESH - 470775

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		61,90,056

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 07/12/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

October 12, 2020

DBL HATA DARGAWON TOLLWAY LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203678157100000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203678157100000 Page 1 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203678157100000 **Employees Compensation Insurance**

Insured Name	DBL HATA DARGAWON TOLLWAY LIMITED (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	12/10/2020

Period of Insurance	From Date & Time	12/10/2020 00:01 AM	To Date & Time	11/10/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203678157100000 Page 2 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

Details of Employees Covered

Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment
Road Paving, Tarring and Road Making - All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled, Unskilled, Engineers, Supervisors, Managers, Daily Labour Etc.	10	2400000.00	Strengthening, Widening, Maintaining & Operating of Hata-Fatehpur-Rajpura-Silapuri-Bajna-Dargaow n (SH-48) Road on BOT (Toll+Annuity) basis

Premium Details (₹)

Basic Premium	**1387.00**
Integrated Tax 18%	**250.00**
Total Premium	**1637.00**

GST Registration No: 24AABCL5045N1ZE.The contract will be cancelled ab intio in case; the consideration under the policy is not realized.

List of Endorsements

Endt No	Description	Effective Date
EC_12_0003	Contractors Employees	12 October 2020
WC-02-0008	Tariff Endorsement	12 October 2020
EC-13-0006	Insurance Contract	12 October 2020
EC-13-0005	Policy Schedule	12 October 2020
WC-02-0010	Medical Expenses Exclusion clause	12 October 2020
EC-13-0007	Communicable Disease Exclusion	12 October 2020
	1) Warranted that there are no known losses and /or circumstances leading to losses (except for the claims and / or circumstances already reported to HDFC ERGO General Insurance Co. Ltd. 2) This policy document is issued basis the information provided though request for quotation and/ or unsigned proposal form and / or other details provided by the insured / insurance intermediary and/ or though discussions and our final quote sheet issued to you enabling the insurer to decide the terms and conditions of insurance contract. Your are requested to inform us within 15 days of receipt of the policy document in the event of any error or omission in the information provided. Business : Construction of Road, Building and Other civil work related to	12 October 2020

3114203678157100000 Page 3 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3800 Fax: 91 22 6638 3899
Email : care@hdfcergo.com

Annexure 9: Change of Scope

CIN No.: U45203MP2004SGC016758

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.

(Govt. of M.P. Undertaking)
45 - A, Arera Hills, Bhopal - 462 011, Madhya Pradesh
Tel.: (O) 0755-2765205, 2527202 - 299 (PRL Line) **Fax:** +91-755-2572643
Website: www.mprdc.nic.in

L.No. 3823 ...../ MPRDC/ BOT/Hatta-Dargawan Road/ COS/2016, Bhopal dt. 2-6-17

To,

M/s DBL Hata-Darguwa Tollways
Plot No. 5, Inside Govind Narayan Singh
Gate, Chuna Bhatti, Kolar Road
Bhopal

Team Leader,
MSV International INC.,
7, Rishi Nagar, Char Imli,
Bhopal (M.P.)

Sub:-Independent Engineer for strengthening, widening, operation & maintenance of Hata-Fatehpur-Rajpura-Bajna-Dargawan Road under BOT (Annuity) basis. Regarding remaining item of Change of Scope.

Ref:- TL, MSV International INC letter No. MSV/BPL/Sagar Zone/2017/1507, dt. 05.05.2017

The Advisory Committee in its meeting held on dated 27.05.2017 & has agreed for In-principle approval of the proposals of works under change of scope as forwarded by IE through the letter under reference. Minutes of Advisory Committee meeting for change of scope, as approved by Managing Director MPRDC, is also enclosed herewith.

You are requested to calculate the financial implication of all works under change of scope approved by MPRDC as per the as built drawings and actual work done on site & submit to this office upto 15.06.2017.

Chief Engineer (BOT)
MPRDC, Bhopal

Endt..No. ...../MPRDC/BOT/Hatta-Dargawan Road/ COS/2016, Bhopal dt.....

Copy to-

1. General Manager, MPRDC Bhopal.
2. Divisional Manager, MPRDC, Division Sagar.

-for information & necessary action.

Sd/-
Chief Engineer (BOT)
MPRDC, Bhopal

Connecting People Through quality infrastructure

Change of scope for Hata Fatehpur – Rajpura- Silapuri-Bahna Darguwa Road Project

"Change of scope for" Hata Fatehpur – Rajpura- Silapuri-Bahna Darguwa Road Project" on BOT (Toll + Annuity) Basis , are as under

MINUTES OF MEETING AT MPRDC BHOPAL

Meeting of advisory committee of MPRDC for "**Change of scope for Hata Fatehpur – Rajpura- Silapuri-Bahna Darguwa Road** " on BOT (Toll + Annuity) Basis , has been conduted in the office of MPRDC on dated 27.05.2017

Following officilals were present in the meeting:-

1. Shri A S.Chendke, Technical Advisor, MPRDC
2. Shri Anil Chansoria, Engineer-in Chief (BOT), MPRDC
3. Shri Sunil Kumar Mukatii, GM (BOT), MPRDC
4. Shri Sanjay Shrama ,Team Leader(Independent Engineer)

The works of change of scope recommended by Independent Engineer vide its letter no. MSV/BPL/Sagar Zone/2016/ 1507 Date:05.05.2017 have been discussed by the committee & decisions taken are recorded below :

Change of scope for Hatta Dargawan Road Project

S N	Location in Km	Existing /Detail schedule 'A'	Provision as per Schedule 'B'	Proposal submitted by concessnaioare	Reasons & Recommendation of Indpendent Engineer on submitted proposal	Descision of Committee
i)	8+870	Solid Slab + C Abt & pier 6x8.7, 8.5 width fair condition	Widening with 12m width	This is the Existing Solid slab 6x8.7, 8.5 width submersible bridge is in good condition, there is no need widening of 12 m width for submersible bridge. Hence this bridge may be retained and wideinig is considered as a (-) negetive Change of Scope	This is the Existing Solid slab 6x8.7, 8.5 width submersible bridge is in good condition, there is no need widening of 12 m width for submersible bridge. Hence this bridge may be retained and wideinig is considered as a (-) negetive Change of Scope	The Advisory Committee agrees with the reasons & recommendation of TL for Negative change of scope for wideining of Minor Bridge .
ii)	64+098	Not in Schedule 'A'	Not in Schedule "B"	Local villagers demanding Hume Pipe Culvert Hence, HPC 1x1000 mm is proposed	As per site condition,at junction of NH-86 and SH-48 HPC 1 x 1000 width of 12.0m is required to drain out the rain water across the road. Hence, it will be+ve Change of Scope.	The Advisory Committee agrees with the reasons & recommendation of TL for Possitive change of scope for construction of 1Rw 1000 mm HPC
	Authorised Representative M/s DBL, Hata- Dargawaan Tollway Pvt. Ltd.		Sh. Sanjay Shrama Team Leader Independent Engineer		Sh. Sunil Kumar Mukati, GM (BOT), MPRDC	Sh. Ashutosh Mishra, CE (BOT), MPRDC
			Sh. Anil Chansoria Engineer In Chief (BOT), MPRDC, Bhopal		Sh. A.S. Chendke Technical Advisor (MPRDC) Bhopal	

SHREM FINANCIAL PRIVATE LIMITED

Development of Silwani – Sultanganj – Jaisinghnagar – Sagar Road (SH-15) in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Silwani – Sultanganj – Jaisinghnagar – Sagar Road (SH-15) in the State of Madhya Pradesh on BOT (Toll Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Silwani-Sultanganj	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL SILWANI SULTANGANJ TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL SILWANI SULTANGANJ TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing two-lane road "Silwani – Sultanganj – Jaisinghnagar - Sagar" (SH-15) in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on 8th September, 2011.

Project road starts at Km. 0+000 located at Silwani (Gairatganj – Bareli - Udaipura Junction) and ends at Km. 75+995, beyond Mainpani Village at Sagar Road Junction on SH-15. It is situated in central part of Madhya Pradesh and passes through settlements namely, Silwani, Sultanganj, Jaisinghnagar and Sagar Road. Project location map is provided at **Figure 1.1**.

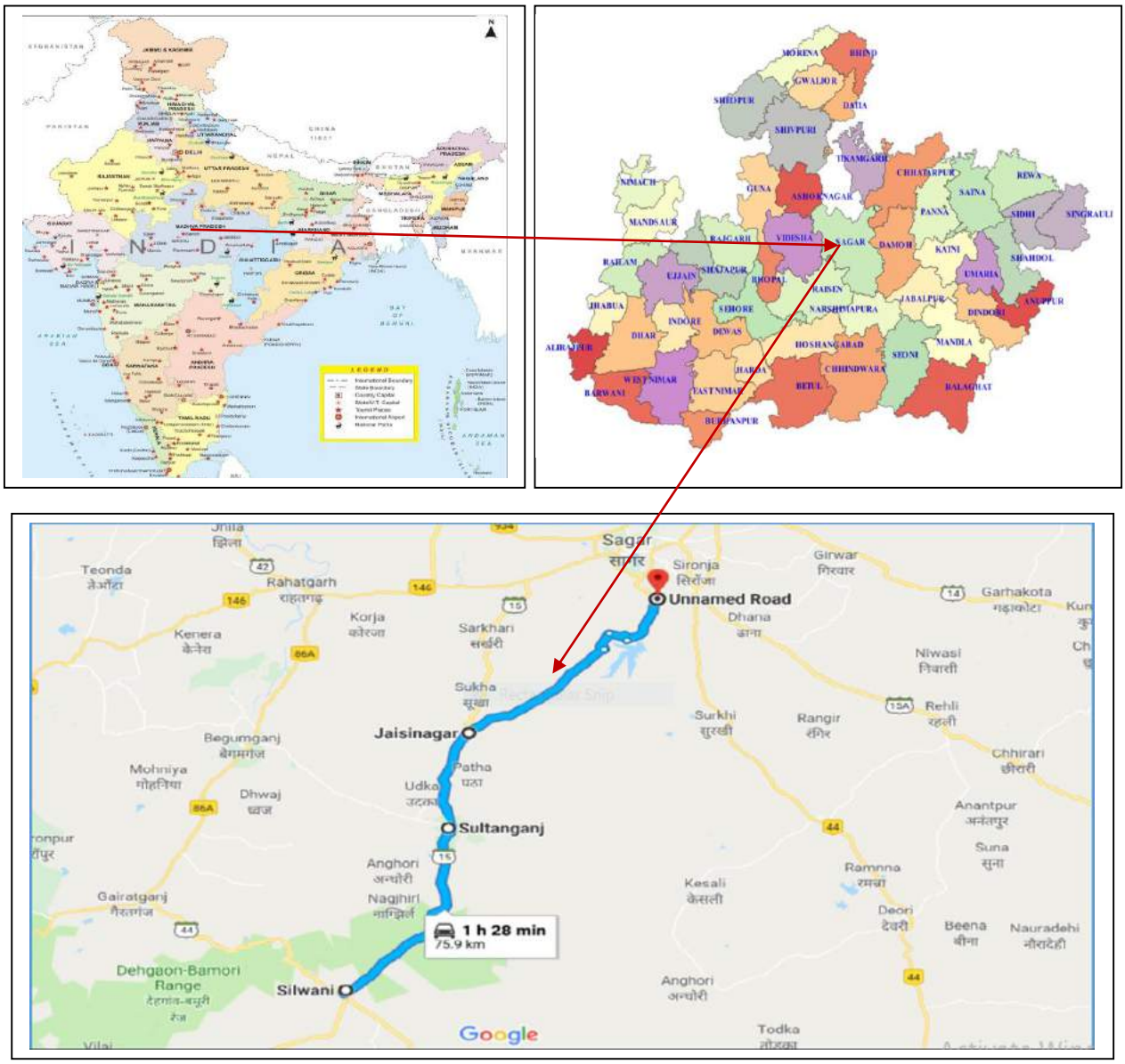

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL SILWANI SULTANGANJ TOLLWAYS LIMITED vide agreement dated 26th March 2018.
SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 The Project Data

Table 1.1: Project Data

S No.	Particulars	Details
1	Name of the project	Construction of Two Lanning of Silwani – Sultanganj – Jaisinghnagar - Sagar Road (SH-15) for development, maintenance and management on design, build, finance, operate and transfer (DBFOT) on Toll + Annuity Basis in the State of Madhya Pradesh.
2	Road Type	State Highway
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
3	Name of the Concessionaire	DBL Silwani Sultanganj Tollways Limited
4	Name of the EPC Contractor	Dilip Buildcon Limited
5	Date of LOA	27.07.2011
6	Date of Agreement	08.09.2011
7	Design Length as per Schedule B of CA	75.995 Km
8	Actual Length Constructed	75.995 Km
9	Project Lane Configuration	Two Lane
10	EPC Cost	115.76 Cr
11	Nature of contract	Toll + Annuity
12	Toll collected by	The Concessionaire
13	Concession Period	15 years from the Appointed Date
14	Appointed date	27.02.2012
15	Concession end date	26.02.2027
16	Construction Period	730 days from the Appointed Date
17	Schedule Completion Date	25.02.2014
18	Date of issuance of Provisional Certificate (Commercial Operation Date)	Section-1: 30.11.2012 Section-2: 25.03.2013
19	Date of issuance of Completion Certificate	Section-1: 28.02.2013 Section-2: 29.05.2013
20	Annuity Amount (every six months)	9.49 Cr.
21	Total Number of Annuities payable	26 Nos.
22	First Annuity Payment Date	25.09.2013
23	Total Number of Annuity Payments paid	15 Nos.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Length (Flexible)	75.995 Kms.	-	75.995 Kms.
2	Two lanes with Paved Shoulder	3.700 Kms.	-	3.700 Kms.
3	Two lanes with Granular Shoulder	72.295 Kms.	-	72.295 Kms.
4	Reconstruction	75.995 Kms.	-	75.995 Kms.
5	Realignment/Bypass	Nil	-	Nil
6	Toll Plaza	02 Nos.	-	02 Nos.
7	Bus Bays / Bus Shelters	6 Nos.		6 Nos.
8	Truck Lay Bays	Nil		Nil
9	Major Junction	03 Nos.		3 Nos.
10	Minor Junctions	15 Nos.		15 Nos.
11	ROB	Nil		Nil
12	Level Crossing	Nil		Nil
13	Major Bridges	01 No		01 No
14	Minor Bridges	09 Nos.	-1 Nos.	17* Nos.
15	Box/ Slab Culverts	20 Nos.	-3+2 Nos	11* Nos.
16	Pipe Culverts	119Nos.	+13 No -2 No	134*Nos.

* 9 Nos. MNB, 4Nos.HPC are constructed as per site requirement. 8Nos. Box culverts were not constructed on site as they are not required as per site.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

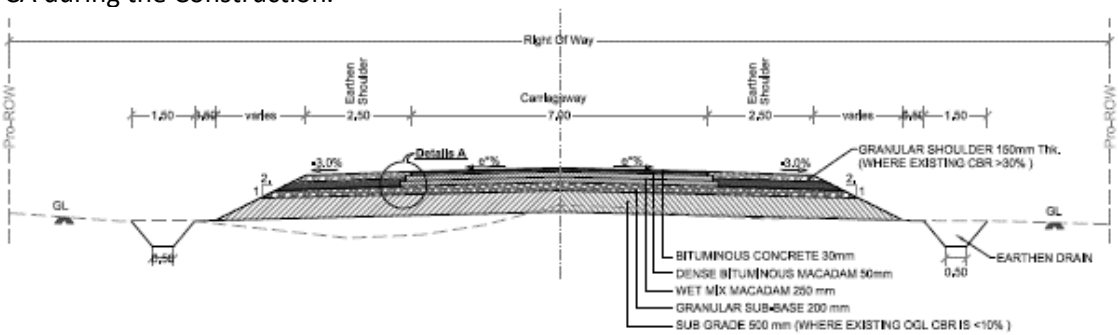

Figure 2.1: TCS-2.1 Open country intermediate lane Carriageway (With Hard Shoulder)

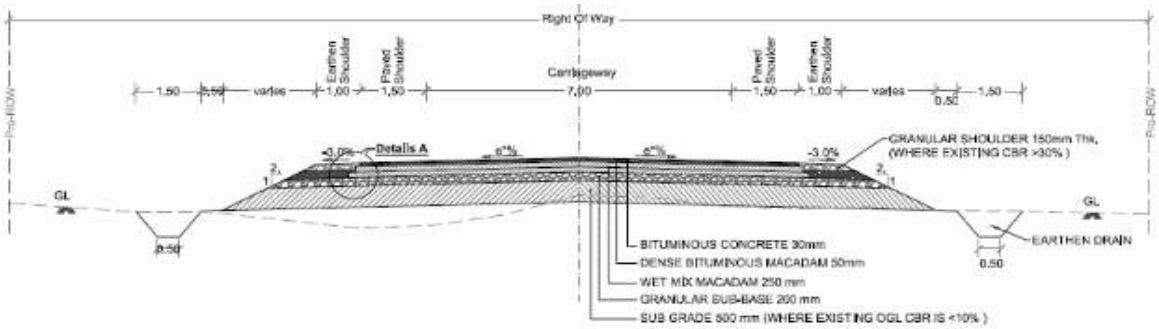

Figure 2.2: TCS-2.2 Built up Area- 2 lane Carriageway (With Paved Shoulder)

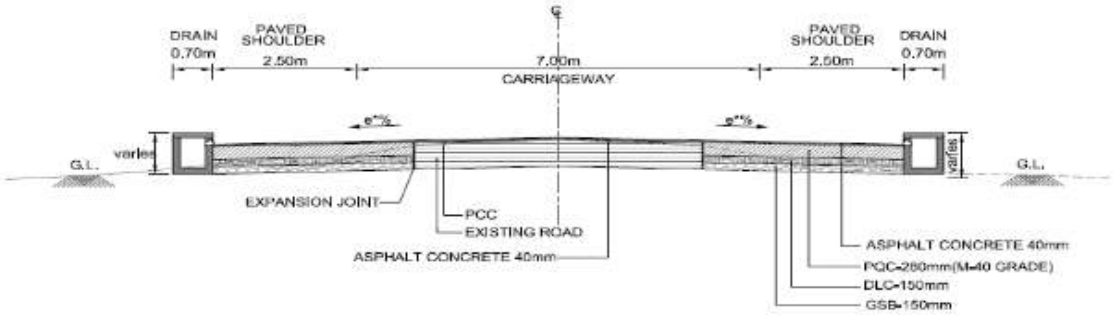

Figure 2.3: TCS-2.3 Built up Area 2-Lane Carriageway with Paved Shoulder (Concentric Widening)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)	Type of TCS
1	0+000	0+263	0.263	TCS 2.3
2	0+263	0+600	0.337	TCS 2.2
3	0+600	16+700	16.100	TCS 2.1
4	16+700	17+700	1.000	TCS 2.2
5	17+700	29+700	12.000	TCS 2.1
6	29+700	29+800	0.100	TCS 2.2
7	29+800	45+200	15.400	TCS 2.1
8	45+200	45+900	0.700	TCS 2.2
9	45+900	72+100	26.200	TCS 2.1
10	72+100	72+900	0.800	TCS 2.2
11	72+900	74+800	1.900	TCS 2.1
12	74+800	75+300	0.500	TCS 2.2
13	75+300	75+995	0.695	TCS 2.1

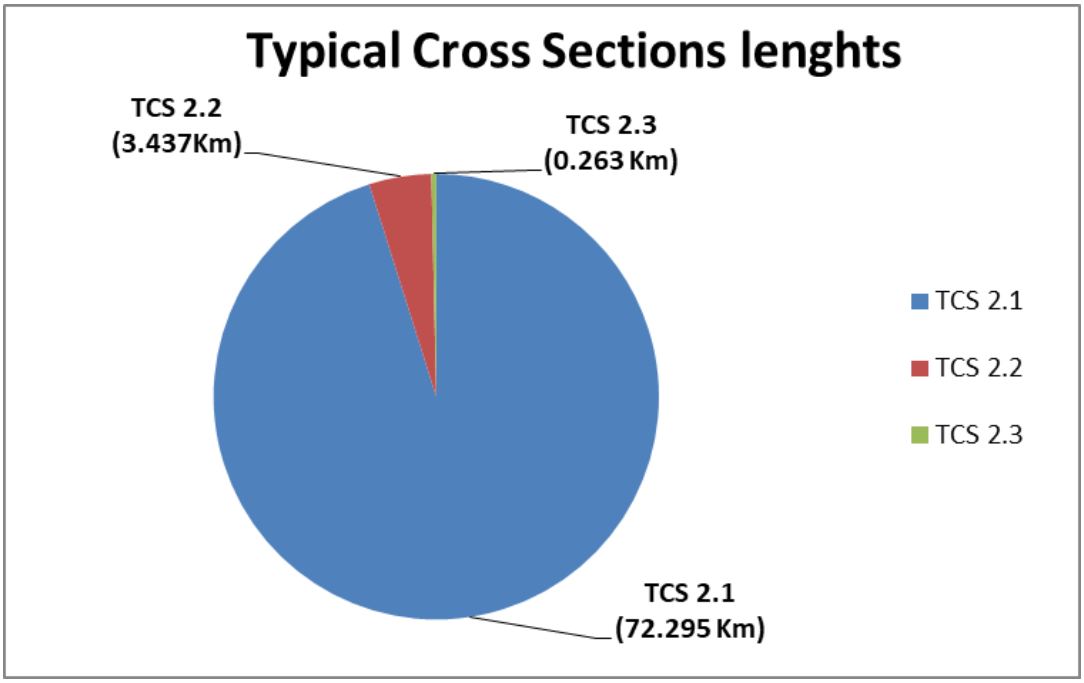

Figure 2.4: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from carriageway side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.5 Bypass/Realignment

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of CA.

2.6 Intersections

As per provisions of Schedule B of CA, 3 Major Junctions and 15 Minor Junctions are provided. Details are given below.

Table 2.3: List of Junctions

S. No.	Chainage (Km.)	Type of Junction	Side	Major/ Minor
1	0+000	X	BHS	Major
2	17+900	T	RHS	Minor
3	21+100	T	RHS	Minor

S. No.	Chainage (Km.)	Type of Junction	Side	Major/ Minor
4	22+300	Y	RHS	Minor
5	24+000	Y	RHS	Minor
6	24+700	T	LHS	Minor
7	28+200	Y	RHS	Minor
8	29+800	X	BHS	Major
9	33+200	Y	LHS	Minor
10	44+100	X	BHS	Minor
11	46+200	X	BHS	Minor
12	46+900	Y	LHS	Minor
13	54+800	T	LHS	Minor
14	57+200	T	LHS	Minor
15	59+000	T	RHS	Minor
16	62+200	X	BHS	Minor
17	66+000	T	RHS	Minor
18	75+010	X	BHS	Major

2.7 Grade Separated Structures and underpasses

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Carriageway and pavement Details

Summary of Carriageway Details is given below:

Table 2.4: Summary of Carriageway and pavement Details

S No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	2 Lane with Earthen shoulder	72.295		Fig 2.1 of Schedule D of CA
2	2 Lane with Paved shoulder	3.700		Fig 2.2 and 2.3 of Schedule D of CA
3	Total Length of the Project	75.995		
TYPE OF ALIGNMENT				
4	New Alignment			
5	Realignment			
6	Strengthening			
7	Reconstruction	75.995		
8	Total Length of the Project	75.995		

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S No	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1		76	1
2	Widening		08	21	3
3	Reconstruction			22	16
4	New		1		
5	Improvement				
	Total	**1**	**09**	**119**	**20**

2.11 Toll Plazas

- There are two toll Plazas on the project road at Km. 1+800 & Km.70+000.
- Toll Plaza 1 at Km.1+800 comprises of 4 lanes.
- one lane in each direction is used for four wheelers and the other lane is used as bike lane.
- Toll Plaza 2 which is at Km.70+000 comprises of 6 lanes.
- one lane in each direction is used for four wheelers and the third lane is used as bike lane.
- Toll plaza 1 comprises of Admin building with G+1 floor with control room, UPS and Pantry.
- Toll Plaza 2 has two buildings which houses control room, UPS & Pantry.
- The second building is used as medical aid post, traffic aid post and also used for tolling staff.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 6 locations. Details are provided below.

Table 2.6: List of Bus shelters

S. No.	Chainage (Km.)	Bus shelter
1	0+000	Bus shelter
2	18+700	Bus shelter
3	19+700	Bus shelter
4	45+200	Bus shelter
5	72+100	Bus shelter
6	75+200	Bus shelter

2.13 Other Project Facilities Provided as per Schedule C of CA

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.

- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

Km.0+000

CH.0+600

Km. 3+400

Km. 75.995

Figure 2.5: Project Facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain rolling Terrain
2	Land Use	Agriculture and forest
3	Two lane length	75.995 km
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Junctions	18 Nos.
6	Toll Plazas	At Km.1+800 & Km.70+000
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus shelters	6 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement

condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 3.3: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
0+000	75+995	75.995	Good

Km. 3+400

Km. 18+400

Km.6+400

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

1 Major Bridge, 17 Minor Bridges, 134 Pipe culverts, 05 Slab culverts and 06 Box culverts are there along this project road.

Table 4.1 : List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	1No.
2	Minor Bridge	17Nos.
3	Slab Culverts	5Nos.
4	Box culverts	6Nos.
5	Pipe culverts	134Nos.

The superstructure for major bridge at Ch.: 6+841 is RCC solid slab and the type of superstructure is of RCC conventional wall type supported with open/pile foundations. The Super structure of Minor bridges is of RCC solid slab and the substructures are of PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the major bridge at Km 6+841 is 69.60 m with 4 spans. The superstructure consists of RCC T-girder. It is Supported on RCC wall type piers and abutments. It has bituminous wearing coat, and Elastomeric/neoprene Bearings and buried type expansion joints. RCC railings have to be provided on both sides of the deck.

Table 4.2: List of Major Bridge

Sl. No.	Chainage (Kms.)	Span	Total Length of Bridge (m.)
1	6+841	4 x 17.40	69.600

The condition of the superstructure and substructure is good. The following are the observations on the bridge: Reflector plates and drainage spouts are required. Strip seal expansion joints need to be rectified at some locations.

Figure 4.1 : Overall view of the major bridge at Km. 6+841

4.4 Details of Minor Bridges

There are 17 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are of Tar paper and neoprene bearings. RCC crash barriers are provided on all structures.

Table 4.3: List of Minor Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
1	0+896	2x 6.6m.	13.2	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
2	10+237	2 x 13.8m.	27.6	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are Brick parapet is provided, bituminous wearing coat, Elastomeric Bearings and buried type expansion joints.
3	28+785	3 x 15.1m.	45.3	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat, and Elastomeric Bearings and buried type expansion joints.
4	30+500	3x 15.3m.	45.9	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat, and Elastomeric Bearings and buried type expansion joints.
5	48+752	1x 7.0m.	7.0	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are Brick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
6	49+158	1x 9.3m.	9.3	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutments.

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
				Other features are Brick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
7	50+810	1 x 9.7m.	9.7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are Brick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
8	54+901	1x 9.5m.	9.5	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are Brick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
9	56+753	2 x 6.0m. (clear)	13.4	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	58+862	2x4.2m. (clear)	9.35	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	59+795	2 x 3.4m. (clear)	7.65	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	62+629	4 x 4.2m. (clear)	18.25	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
13	63+525	4 x 5.5m. (clear)	23.7	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
14	64+641	2x5.5m. (clear)	12.1	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
15	71+127	2 x 8.6m.	17.2	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are Brick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
16	71+379	2 x 9.9m.	19.8	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are rick parapet is provided, bituminous wearing coat, Tar paper Bearings and buried type expansion joints.
17	75+008	2 x 3.5m. (clear)	7.85	The Minor Bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

4.5 Details of Culverts:

The culverts observed along the project road are mainly of two types viz. RCC Slab/Box culverts and Pipe culverts. The structural condition of culverts is generally good. Some of the pipe culverts vents have choked with vegetation and vent cleaning is required. In general, the condition of all the structures is found to be satisfactory. The detailed condition of the same are given the following sections, detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. Slab/Box Culverts

There are 06 Nos. of Box culverts and 05 Slab culverts in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Type	Span (m)
1	0+013	Slab	2 x 1
2	3+383	Slab	1 x 1.5
3	3+885	Box	1 x 4
4	5+718	Slab	1 x 6
5	6+157	Slab	1 x 4
6	6+431	Slab	1 x 3
7	6+703	Box	1 x 4
8	17+464	Box	2 x 3
9	19+750	Box	2 x 3
10	52+010	Box	1 x 4.5
11	52+458	Box	2 x 3

4.5.2. Condition of the Slab/Box Culverts:

The general condition of above slab culverts is good. Maintenance is to be carried out to most of the culverts in the form of vent clearance and Stone Pitching for Quadrants.

Km.3+383

Km. 6+157

Figure 4.2: Representative photos of Slab/ Box Culverts

4.5.3. General Description of the Pipe Culverts

There are 134 Nos. of pipe culverts in the project stretch. The details of the culverts are given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)	S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)
1	1+369	Pipe	1 x 1.2	68	40+275	pipe	1 x 0.9
2	3+130	Pipe	1 x 1.2	69	40+603	pipe	1 x 1
3	3+678	Pipe	1 x 1.2	70	40+894	pipe	1 x 1
4	7+330	Pipe	1 x 1.2	71	41+377	Pipe	1 x 0.9
5	7+669	Pipe	1 x 0.9	72	41+561	Pipe	1 x 0.9
6	7+900 (EXTRA)	Pipe	1 x 1.2	73	41+708	Pipe	1 x 0.9
7	8+013	Pipe	1 x 0.9	74	42+092	Pipe	1 x 0.9
8	8+154 (8+225)	Pipe	1 x 0.9	75	42+337	Pipe	2 x 1
9	8+466 (8+320)	Pipe	2 x 1.2	76	43+102	Pipe	1 x 1
10	8+577 (8+570)	Pipe	2 x 1.2	77	43+215 (43+195)	Pipe	1 x 0.9
11	8+988 (8+935)	Pipe	2 x 1.0	78	43+331	Pipe	1 x 0.9
12	9+275	Pipe	1 x 1	79	43+556	Pipe	1 x 1
13	9+434	Pipe	3 x 1.2	80	43+767	Pipe	1 x 0.9
14	10+334	Pipe	1 x 0.9	81	43+966 (43+981)	Pipe	1 x 0.9
15	10+398	Pipe	2 x 0.9+1x1	82	44+432	Pipe	1 x 0.9
16	11+035 (11+008)	Pipe	1 x – (Buried)	83	44+565	Pipe	1 x 0.9
17	11+232	Pipe	1 x 0.9	84	44+681	Pipe	2 x 0.9
18	14+028	Pipe	-	85	45+705	Pipe	1 x 0.9
19	14+603	Pipe	2 x 1	86	45+794	Pipe	1 x 0.9
20	15+422	Pipe	1 x 0.9	87	46+122	Pipe	1 x 0.9
21	15+711	Pipe	1 x 1.2	88	46+739	Pipe	1 x 0.9
22	16+026	Pipe	1 x 0.9	89	46+855	Pipe	1 x 0.9
23	16+348	Pipe	1 x 1.2	90	47+291	Pipe	1 x 0.9
24	16+727	Pipe	2 x 1.2	91	49+554	Pipe	1 x 0.9
25	17+943	Pipe	2 x 0.9	92	49+697	Pipe	1 x 0.9
26	18+156	Pipe	2 x 0.9	93	50+400	Pipe	1 x 0.9
27	18+327	Pipe	4 x 1	94	51+900	Pipe	1 x 0.9
28	18+771	Pipe	1 x 1.2	95	53+868	Pipe	2 x 1
29	18+961	Pipe	2 x 1.2	96	54+025	Pipe	1 x 1.2
30	19+349	Pipe	1 x 1.2	97	55+391	Pipe	1 x 1

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)
31	20+332	Pipe	1 x 0.9
32	20+771	Pipe	2 x 1.2
33	20+876	Pipe	1 x 0.9
34	21+533	Pipe	1 x 1.2
35	21+720	Pipe	3 x 1.2
36	22+131 (21+915)	Pipe	5 x 1.2
37	22+642	Pipe	1 x 1.2
38	23+066	Pipe	1 x 1.2
39	23+385	Pipe	1 x 0.9
40	23+927	Pipe	1 x 1.2
41	24+436	Pipe	4 x 1
42	26+072	Pipe	2 x 1.2
43	26+863	Pipe	1 x 1
44	27+681	Pipe	2 x 1
45	27+813	Pipe	1 x 0.9
46	27+940	Pipe	2 x 1.2
47	28+423	Pipe	-
48	29+174	Pipe	1 x 1
49	29+477	Pipe	Buried
50	30+140	Pipe	2 x 1
51	30+895	Pipe	1 x 1
52	31+510	Pipe	1 x 1
53	32+035	Pipe	2 x 1
54	33+500	Pipe	3 x 1
55	34+110	Pipe	1 x 1
56	34+960	Pipe	2 x 1
57	36+070	Pipe	1 x 0.9
58	36+246	Pipe	1 x 0.9
59	36+669	Pipe	1 x 0.9
60	36+975 (37+085)	Pipe	1 x 0.9
61	37+334 (37+385)	Pipe	1 x 0.9
62	37+516 (37+530)	Pipe	1 x 0.9
63	37+890 (37+899)	Pipe	1 x 0.9

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)
98	55+760 (EXTRA)	Pipe	1 x 0.9
99	56+335	Pipe	1 x 0.9
100	56+645	Pipe	1 x 0.9
101	58+622	Pipe	1 x 1
102	59+233	Pipe	2 x 0.9
103	60+729	Pipe	2 x 1.2
104	61+673	Pipe	1 x 1
105	62+038	Pipe	1 x 1
106	64+874	Pipe	1 x 1.2
107	65+280	Pipe	Buried
108	65+442 (65+370)	Pipe	1 x 1
109	65+572 (65+530)	Pipe	4 x 1
110	65+870	Pipe	2 x 1
111	66+002 (65+993)	Pipe	1 x 1
112	66+140	Pipe	2 x 1
113	66+350	Pipe	1 x 1
114	67+080	pipe	1 x 1.2
115	67+373	pipe	2 x 1
116	67+440 (EXTRA)	pipe	1 x 1.2
117	68+056	Pipe	1 x 1
118	68+248	Pipe	1 x 1
119	68+651	Pipe	3 x 1.2
120	69+433	Pipe	2 x 1
121	69+898	Pipe	1 x 1.2
122	70+192	Pipe	1 x 1
123	70+873	Pipe	2 x 0.9
124	72+008	Pipe	1 x 1
125	72+274	Pipe	1 x 1
126	72+894	Pipe	2 x 1
127	73+193	Pipe	1 x 0.9
128	73+255	Pipe	1 x 0.9
129	73+373	Pipe	1 x 0.9
130	73+736	Pipe	2 x 0.9

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)
64	38+335	Pipe	1 x 0.9
65	38+475	Pipe	2 x 0.9
66	39+169	Pipe	1 x 0.9
67	39+498	Pipe	2 x 0.9

S. No.	Chainage (Km.)	Type	No. of Rows& Dia (m.)
131	73+814	Pipe	2 x 1.2
132	74+068	Pipe	2 x 0.9
133	74+549	Pipe	1 x 1
134	75+233	Pipe	1 x 1.2

4.5.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out to most of the culverts in the form of clearing debris from pipes and removal of weed.

Km.3+130

Figure 4.3: Representative photo of Pipe Culvert

The culverts are in fair condition and can be retained in the present condition with the following Maintenance works.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

5.3 Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Pavement Design Parameters

S. No.	Description/ Pavement layer	Design Parameters	Adopted values
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	8 years for BT 15 years for Granular	8 years for BT 15 years for Granular
3	Design Traffic (MSA)	2.67 MSA for BT 5.86 MSA for Granular	5 MSA for BT 10 MSA for Granular
4	Surface course (BC)	25 mm	25 mm
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	150 mm	200 mm

5.3.1. Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Real Time Traffic from COD & Project Traffic Current Years with 5% Growth For CMSA (TP1)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2015	190	157	7	52	36	252	0.24	0.47	3	Actual
2016	239	189	6	67	42	304	0.29	0.76	4	Actual
2017	259	179	7	65	66	317	0.30	1.07	5	Actual
2018	304	221	12	68	117	418	0.40	1.47	6	Actual
2019	320	216	7	51	148	422	0.40	1.87	7	Actual
2020	391	233	7	59	166	465	0.45	2.32	8	Actual
2021	410	245	8	62	174	488	0.47	2.79	9	Projected
2022	431	257	8	65	183	513	0.49	3.28	10	Projected
2023	453	270	8	68	192	538	0.52	3.79	11	Projected
2024	475	283	9	72	201	565	0.54	4.34	12	Projected
2025	499	298	9	75	211	593	0.57	4.90	13	Projected
2026	524	312	10	79	222	623	0.60	5.50	14	Projected
2027	550	328	10	83	233	654	0.63	6.13	15	Projected

Table 5.3: Real Time Traffic from COD & Project Traffic Current Years with 5% Growth For CMSA (TP-2)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2015	248	109	5	25	17	156	0.15	0.26	3	Actual
2016	323	145	8	32	19	204	0.20	0.46	4	Actual
2017	433	166	8	42	33	249	0.24	0.70	5	Actual
2018	466	186	8	47	59	301	0.29	0.98	6	Actual
2019	511	157	4	31	80	272	0.26	1.25	7	Actual
2020	565	165	6	37	85	293	0.28	1.53	8	Actual
2021	594	173	6	39	89	308	0.29	1.82	9	Projected
2022	623	182	6	41	94	323	0.31	2.13	10	Projected
2023	654	191	7	43	99	339	0.33	2.46	11	Projected
2024	687	201	7	45	103	356	0.34	2.80	12	Projected
2025	722	211	7	47	109	374	0.36	3.16	13	Projected
2026	758	221	8	50	114	393	0.38	3.53	14	Projected
2027	795	232	8	52	120	412	0.40	3.93	15	Projected

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 2.32, 6.13 of TP1 respectively. Similarly estimated MSA at 8 years and 15 years of TP2 are 1.53, 3.93 respectively.

Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

Details of Pavement design for Rigid Pavement are as follows:

Table 5.4: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	280
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	480

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ designed traffic is more than the actual traffic. Hence pavement crust is safe.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA and 10 MSA for a design life of 8 years for Bituminous layers (up to end of year 2020) and 15 years for granular layers respectively (up to end of year 2026), whereas the actual traffic is 3 MSA and 6 MSA for 8 years and 15 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed on or before 2026

Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction. (As per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP--88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Existing Road Safety items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs Village sign boards Information Boards Other Sign Boards Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Km. 3+400

Km. 6+100

Km.6+400

Km.18+000

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There are two toll Plazas on the project road at Km. 1+800 and Km. 70+000. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza buildings are G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plazas and control rooms is given below.

Table 7.1 : List of Equipment at Toll Plazas and Control Rooms

S. No.	Description	Nos.
1	Audit camera	1
2	AVC	2
3	Barcode reader	1
4	Barrier	3
5	Booth camera	1
6	CCTV camera (Building)	4
7	ETC antenna	1
8	Fog light	1
9	Fog light Controller	1
10	Intercom (Internal)	1
11	KEYBOARD	3
12	Keyboard	3
13	Lan hardware / optical fibre	1
14	LC Cabinet	1
15	LC System	1
16	LPIC	4
17	MBC	1
18	Monitor	8
19	Mouse	4
20	NVR	1
21	OHLS	1
22	Panic Foot Switch	4
23	PFD	2
24	POE SWITCH	1
25	Printer	6
26	RFID reader	1
27	Scanner	1
28	SERVER	1

S. No.	Description	Nos.
29	Smart card	1
30	Smartcard Reader	1
31	Traffic light	4
32	Vehicle Scanner (Photo cell)	1
33	Vehicle Separator	1
34	Violation Alarm	4
35	WIM	1
36	WIM Controller	1
37	Workstation	3

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza 1	Toll Plaza 2
1	Patrol Vehicle	TVS Bike – 1 No	TVS Bike – 1 No
2	Ambulance	Mahindra Genio – 1 No.	Mahindra Genio – 1 No.
3	Crane	-	1No

Toll Plaza at Km.70+000

Toll Building At Km.70+000

Figure 7.1 :Toll Plaza at Km.70+00

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Annual Average Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

(A) Silwani Toll Plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr-Mar 2015-16	87629	69335	2201	24477	15415	199057
Apr-Mar 2016-17	94444	65451	2499	23697	24030	210121
Apr-Mar 2017-18	110881	80824	4433	24854	42565	263557
Apr-Mar 2018-19	116905	78740	2711	18573	54062	270991
Apr-Mar 2019-20	143066	85347	2644	21587	60609	313253
AACGR* (%)	**8.90%**	**7.07%**	**4.54%**	**37.79%**	**14.53%**	**15.81%**

(B) Sagar Toll Plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr-Mar 2015-16	118269	52898	2749	11782	7114	192812
Apr-Mar 2016-17	158096	60667	2839	15451	12060	249113
Apr-Mar 2017-18	170192	67959	3102	17214	21495	279962
Apr-Mar 2018-19	186487	57469	1423	11240	29167	285786
Apr-Mar 2019-20	206912	60419	2057	13611	31163	314162
AACGR* (%)	**18.54%**	**9.88%**	**8.45%**	**11.71%**	**41.38%**	**16.90%**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8-2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

(A) Silwani Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	57046	6669	38128	2624	20416	55153	180036
Toll Revenue collection in Rs.	1007995	533540	1633890	230080	2106405	11489645	17001555

(B) Sagar Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	111745	7721	35179	1906	10930	27968	195449
Toll Revenue collection in Rs.	2793665	617670	2286635	250525	1723290	8928275	16600060

The figures shown in Table 8-1 are Real time traffic data (AADT) on project road for the past five years and the growth rate is calculated to be 15.81% and 16.90% in TP-1 and TP-2 respectively. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8-2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5% even though the growth as per table 8-1 is >5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8-3.

Table 8.3: Projected Traffic

(A) Silwani Toll Plaza

FY YEAR	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	Bus	2-AT	MAV		
PCU Factor							1.0	1.5	3.0	3.0	4.5		
2020	175	104	7	56	151	319	175	157	22	168	680	1026	Actual
2021	183	110	8	59	159	335	183	165	23	176	714	1077	Projected
2022	192	115	8	62	167	351	192	173	24	185	750	1131	Projected
2023	202	121	8	65	175	369	202	181	25	194	787	1188	Projected
2024	212	127	9	68	184	387	212	190	26	204	827	1247	Projected
2025	223	133	9	71	193	407	223	200	28	214	868	1310	Projected
2026	234	140	10	75	202	427	234	210	29	225	911	1375	Projected
2027	246	147	10	79	213	448	246	220	30	236	957	1444	Projected

(B) Sagar Toll Plaza

FY YEAR	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	Bus	2-AT	MAV		
PCU Factor							1.0	1.5	3.0	3.0	4.5		
2020	327	96	5	30	77	208	327	145	16	90	345	595	Actual
2021	344	101	5	31	80	219	344	152	16	94	362	625	Projected
2022	361	106	6	33	84	230	361	159	17	99	380	656	Projected
2023	379	112	6	35	89	241	379	167	18	104	399	689	Projected
2024	398	117	6	36	93	253	398	176	19	109	419	723	Projected
2025	418	123	7	38	98	266	418	185	20	115	440	759	Projected
2026	439	129	7	40	103	279	439	194	21	120	462	797	Projected
2027	461	136	7	42	108	293	461	203	22	126	485	837	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given below.

Table 8.4: Toll Revenue Inputs

Particular	Toll plaza 1	Toll plaza 2
Location	Km. 1+800	Km. 70+000
4 lane length in km	0	0
2 lane length in km	30	35.995
Agreement Date	08-09-2011	08-09-2011
Appointed Date	27-02-2012	27-02-2012
Concession period	15 Years	15 Years
Commercial operation date	28-02-2013	29-05-2013
Concession End Date	26-02-2027	26-02-2027
Traffic study year	2019-2020	2019-2020
Vehicle Type	**AADT**	**AADT**
Car/Jeep/Van	175	327
2-axle Bus	104	96
LCV/LGV	7	5
2A-Truck	56	30
MAV (2A-6A)	151	77
Growth Rate (%)	5	5

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 (Km. 1+800)	Annual Revenue of TP2 (Km. 70+000)	Total	Remarks
2019-20	170.016	166.001	336.016	Actual
2020-21	184.945	180.404	365.349	
2021-22	201.519	194.742	396.261	
2022-23	221.880	217.400	439.280	
2023-24	237.959	235.266	473.225	
2024-25	258.338	255.429	513.767	
2025-26	283.162	273.314	556.476	
2026-27	277.773	269.457	547.230	332 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
iii. carrying out preventive and periodic maintenance of the Project road;
iv. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

v. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
vi. Functioning of the lighting system;
vii. Functioning of the Patrolling System
viii. Functioning of rescue and medical aid services
ix. Ambulance as and when required
x. Functioning of the Project Facilities
xi. Administrative, Operational and Maintenance Base Camp
xii. Truck Lay byes
xiii. Pickup Bus stops / Bus Bays
xiv. protection of the environment and provision of equipment and materials therefor;
xv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xvi. complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Periodic Maintenance -Phase 1	30 Km Micro surfacing in 2018	Executed
1st Periodic Maintenance - Phase 2	35 Km BC Overlay in 2019	Executed
1st Periodic Maintenance - Phase 3	18 Km BC Overlay in 2020	Executed
1st Periodic Maintenance - Phase 4	7 Km BC Overlay in 2021	Work in Progress
2nd Periodic Maintenance	76 Km BC Overlay in 2026	Scheduled

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Aug, 2020. As per Schedule K of CA, if the stretch exceeds 3000mm in a KM shall be rectified. No stretch exceeds the permissible limit.

9.6.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Dec2019. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Toll Plaza Operator (Including Electricity and Fuel Charges/ AMC/Other expenses/Insurances/Misc.	Total cost per year
2021	0.259	0.424	-	0.61	**1.29**
2022	0.267	0.437		0.63	**1.33**
2023	0.275	0.450		0.65	**1.37**
2024	0.283	0.463		0.67	**1.41**
2025	0.292	0.477		0.69	**1.46**
2026	0.300	0.492	7.01	0.71	**8.51**
2027	0.282	0.461	7.01	0.66	**8.41**
Total	**1.96**	**3.20**	**14.02**	**4.61**	**23.79**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- Operation and maintenance of the Project road in accordance with the provisions of the Agreement;
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of the Agreement and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.6.1. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE 7.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Copy of the Completion Certificate is provided in **ANNEXURE 8.**

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the MPRDCL. Details are provided in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.

- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Annuity payment of Rs 9.49 Crores is due and payable by the Authority to the Concessionaire for each six months after COD as set forth in Clause 25.2.1 and Schedule Y of CA.

Table 10.1: Status of Annuity Payments

S No.	Particulars	Payment Paid on
1	1st Annuity	17-Oct-13
2	2nd Annuity	31-Mar-14
3	3rd Annuity	1-Oct-14
4	4th Annuity	31-Mar-15
5	5th Annuity	28-Sep-15
6	6th Annuity	04-Apr-16
7	7th Annuity	3-Oct-16
8	8th Annuity	03-Apr-17
9	9th Annuity	4-Dec-17
10	10th Annuity	17-Apr-18
11	11th Annuity	16-Oct-18
12	12th Annuity	18-Apr-19
13	13th Annuity	30-Sep-19
14	14th Annuity	27-Mar-20
15	15th Annuity	25-Sep-20

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.

- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

10.20 Toll fee (Clause 27.1.1)

Toll Fees shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the CA, the Concessionaire shall affect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 9**.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001984	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/40	08.09.2020	07.09.2021	Electronic Equipment installed in the Project road
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	3114203387794500000	19.5.2020	18.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

12.4 Project Facilities

Two Toll Plazas are constructed one at Km.1+800 & the other Km.70+000. Both are operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained well. Highway lighting is provided at toll plaza locations and the same is found functional.

12.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.6 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed is to 15.81% and 16.90% in TP-1 and TP-2 respectively, where as 5% growth is considered while evaluating forecast of traffic volumes.

12.7 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2026.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
0+000	1+000								G		PS & ES	F	F	LD	F
1+000	2+000								G		ES	F	F	ULD	PF
2+000	3+000	3	1						F		ES	F	F	ULD	PF
3+000	4+000								G		ES	F	F	ULD	PF
4+000	5+000	4	2						F		ES	F	F	ULD	PF
5+000	6+000								G		ES	F	F	ULD	PF
6+000	7+000	3	2	1					F		ES	F	F	ULD	PF
7+000	8+000								G		ES	F	F	ULD	PF
8+000	9+000								G		ES	F	F	ULD	PF
9+000	10+000		2	3					F		ES	F	F	ULD	PF
10+000	11+000	1	3	1					F		ES	F	F	ULD	PF
11+000	12+000								G		ES	F	F	ULD	PF
12+000	13+000								G		ES	F	F	ULD	PF
13+000	14+000								G		ES	F	F	ULD	PF
14+000	15+000								G		ES	F	F	ULD	PF
15+000	16+000								G		ES	F	F	ULD	PF
16+000	17+000								G		PS & ES	F	F	LD	F
17+000	18+000								G		PS & ES	F	F	LD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
18+000	19+000								G		ES	F	F	ULD	PF
19+000	20+000								G		ES	F	F	ULD	PF
20+000	21+000								G		ES	F	F	ULD	PF
21+000	22+000	1	3						F		ES	F	F	ULD	PF
22+000	23+000								G		ES	F	F	ULD	PF
23+000	24+000								G		ES	F	F	ULD	PF
24+000	25+000								G		ES	F	F	ULD	PF
25+000	26+000		5						F		ES	F	F	ULD	PF
26+000	27+000								G		ES	F	F	ULD	PF
27+000	28+000								G		ES	F	F	ULD	PF
28+000	29+000	2	4						F		ES	F	F	ULD	PF
29+000	30+000								G		PS & ES	F	F	LD	F
30+000	31+000								G		ES	F	F	ULD	PF
31+000	32+000								G		ES	F	F	ULD	PF
32+000	33+000								G		ES	F	F	ULD	PF
33+000	34+000	2	3						F		ES	F	F	ULD	PF
34+000	35+000								G		ES	F	F	ULD	PF
35+000	36+000								G		ES	F	F	ULD	PF
36+000	37+000								G		ES	F	F	ULD	PF

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
37+000	38+000								G		ES	F	F	ULD	PF
38+000	39+000								G		ES	F	F	ULD	PF
39+000	40+000	1	1	1					F		ES	F	F	ULD	PF
40+000	41+000								G	1-1.5	ES	F	F	ULD	PF
41+000	42+000								G		ES	F	F	ULD	PF
42+000	43+000								G	1-1.5	ES	F	F	ULD	PF
43+000	44+000								G		ES	F	F	ULD	PF
44+000	45+000								G	1.5-2.5	ES	F	F	ULD	PF
45+000	46+000								G		PS & ES	F	F	LD	F
46+000	47+000								G	1-1.5	ES	F	F	ULD	PF
47+000	48+000								G		ES	F	F	ULD	PF
48+000	49+000								G	1.5-2.5	ES	F	F	ULD	PF
49+000	50+000								G		ES	F	F	ULD	PF
50+000	51+000								G	1.5	ES	F	F	ULD	PF
51+000	52+000	5	2						F		ES	F	F	ULD	PF
52+000	53+000								G		ES	F	F	ULD	PF
53+000	54+000								G		ES	F	F	ULD	PF

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
54+000	55+000								G		ES	F	F	ULD	PF
55+000	56+000								G		ES	F	F	ULD	PF
56+000	57+000								G		ES	F	F	ULD	PF
57+000	58+000								G	1.5	ES	F	F	ULD	PF
58+000	59+000	2	3						F	1.5	ES	F	F	ULD	PF
59+000	60+000								G		ES	F	F	ULD	PF
60+000	61+000								G		ES	F	F	ULD	PF
61+000	62+000								G		ES	F	F	ULD	PF
62+000	63+000								G		ES	F	F	ULD	PF
63+000	64+000	1	3	1					F		ES	F	F	ULD	PF
64+000	65+000								G		ES	F	F	ULD	PF
65+000	66+000								G	1.5	ES	F	F	ULD	PF
66+000	67+000								G		ES	F	F	ULD	PF
67+000	68+000								G	1.5	ES	F	F	ULD	PF
68+000	69+000								G		ES	F	F	ULD	PF
69+000	70+000								G		ES	F	F	ULD	PF
70+000	71+000								G		ES	F	F	LD	F
71+000	72+000								G		ES	F	F	ULD	PF
72+000	73+000								G		PS & ES	F	F	LD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
73+000	74+000								G		ES	F	F	ULD	PF
74+000	75+000								G		PS & ES	F	F	LD	F
75+000	75+995								G		PS & ES	F	F	LD	F

Annexure 2: Condition of Bridges

S.No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Wearing coat	Bearings	Quadrant Pitching	Toe wall
1	0+896	Minor Bridge	Good	Good	Good	Good	Good	-	Fair	-
2	6+841	Major Bridge	Good	Good	Good	Good	Good	-	Fair	-
3	10+237	Minor Bridge	Good	Good	Good	Fair	Good	-	Good	-
4	28+788	Minor Bridge	Good	Good	Good	Good	Fair	-	Good	-
5	30+500	Minor Bridge	Good	Good	Good	Good	Good	-	Fair	-
6	48+752	Minor Bridge	Good	Good	Good	Good	Good	-	Good	-
7	49+158	Minor Bridge	Good	Good	Good	Good	Good	-	Fair	-
8	50+810	Minor Bridge	Good	Good	Good	Good	Good	-	Good	-
9	54+901	Minor Bridge	Good	Good	Good	Good	Good	-	Good	-
10	56+753	Minor Bridge	Good	Good	-	Good	Good	-	Fair	-
11	58+862	Minor Bridge	Good	Good	-	Good	Good	-	Good	-
12	59+795	Minor Bridge	Good	Good	-	Good	Good	-	Fair	-
13	62+629	Minor Bridge	Good	Good	-	Good	Good	-	Fair	-
14	63+525	Minor Bridge	Good	Good	-	Good	Fair	-	Fair	-
15	64+641	Minor Bridge	Good	Good	-	Good	Good	-	Good	-
16	71+127	Minor Bridge	Good	Fair	Good	Good	Good	-	Good	-
17	71+379	Minor Bridge	Good	Good	Good	Good	Good	-	Good	-
18	75+008	Minor Bridge	Good	Good	-	Good	Good	-	Fair	-

Annexure 3: Condition of Culverts

Box /Slab Culverts

S. No	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet wall
1	0+013	Good	Fair	Fair	Fair	-	Fair
2	3+383	Good	Good	Good	Good	-	Good
3	3+885	Good	Good	Good	Good	-	Good
4	5+718	Good	Good	Fair	Fair	-	Good
5	6+157	Good	Good	Good	Fair	-	Good
6	6+431	Good	Good	Good	Fair	-	Good
7	6+703	Good	Good	Good	Good	-	Good
8	17+464	Good	Good	Good	Good	-	Good
9	19+750	Good	Good	Fair	Fair	-	Good
10	52+010	Good	Good	Fair	Fair	-	Good
11	52+458	Good	Good	Good	Good	-	Good

Hume Pipe Culverts

S. No	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	1+369	Good	Good	Fair	-
2	3+130	Good	Good	Fair	-
3	3+678	Good	Good	Fair	-
4	7+330	Good	Good	Fair	-
5	7+669	Good	Good	Fair	-
6	7+900	Good	Good	Fair	-
7	8+013	Good	Good	Fair	-
8	8+154	Good	Good	Fair	-
9	8+466	Good	Good	Fair	-
10	8+577	Good	Good	Fair	Good
11	8+988	Good	Good	Fair	Good
12	9+275	Good	Good	Fair	Good
13	9+434	Good	Good	Fair	Good
14	10+334	Good	Good	Fair	-
15	10+398	Good	Good	Fair	-
16	11+035	Good	Good	Fair	-
17	11+232	Good	Good	Fair	-
18	14+028	Good	Good	Fair	-
19	14+603	Good	Good	Fair	-
20	15+422	Good	Good	Fair	-
21	15+711	Good	Good	Fair	-
22	16+026	Good	Good	Fair	-
23	16+348	Good	Good	Fair	Good

S. No	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
24	16+727	Good	Good	Fair	-
25	17+943	Good	Good	Fair	-
26	18+156	Good	Good	Fair	Good
27	18+327	Good	Good	Fair	-
28	18+771	Good	Good	Fair	-
29	18+961	Good	Good	Fair	-
30	19+349	Good	Good	Fair	-
31	20+332	Good	Good	Fair	-
32	20+771	Good	Good	Fair	Good
33	20+876	Good	Good	Fair	-
34	21+533	Good	Good	Fair	Good
35	21+720	Good	Good	Fair	Good
36	22+131	Good	Good	Fair	-
37	22+642	Good	Good	Fair	-
38	23+066	Good	Good	Fair	-
39	23+385	Good	Good	Fair	Good
40	23+927	Good	Good	Fair	Good
41	24+436	Good	Good	Fair	Good
42	26+072	Good	Good	Fair	-
43	26+863	Good	Good	Fair	-
44	27+681	Good	Good	Fair	-
45	27+813	Good	Good	Fair	-
46	27+940	Good	Good	Fair	-
47	28+423	Fair	Fair	Fair	-
48	29+174	Good	Good	Fair	Good
49	29+477	Fair	Fair	Fair	Good
50	30+140	Good	Good	Fair	-
51	30+895	Good	Good	Fair	-
52	31+510	Good	Good	Fair	-
53	32+035	Good	Good	Fair	-
54	33+500	Good	Good	Fair	-
55	34+110	Good	Good	Fair	-
56	34+960	Good	Good	Fair	-
57	36+026	Good	Good	Fair	-
58	36+246	Good	Good	Fair	-
59	36+669	Good	Good	Fair	-
60	36+975	Good	Good	Fair	-
61	37+334	Good	Good	Fair	-
62	37+516	Good	Good	Fair	-
63	37+899	Good	Good	Fair	-
64	38+335	Good	Good	Fair	-

S. No	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
65	38+475	Good	Good	Fair	-
66	39+169	Good	Good	Fair	Good
67	39+498	Good	Good	Fair	-
68	40+275	Good	Good	Fair	-
69	40+603	Good	Good	Fair	-
70	40+894	Good	Good	Fair	-
71	41+377	Good	Good	Fair	-
72	41+561	Good	Good	Fair	-
73	41+708	Good	Good	Fair	-
74	42+092	Good	Good	Fair	-
75	42+337	Good	Good	Fair	-
76	43+102	Good	Good	Fair	Good
77	43+215	Good	Good	Fair	-
78	43+331	Good	Good	Fair	-
79	43+556	Good	Good	Fair	-
80	43+767	Good	Good	Fair	-
81	43+966	Good	Good	Fair	-
82	44+432	Good	Good	Fair	-
83	44+565	Good	Good	Fair	-
84	44+681	Good	Good	Fair	-
85	45+705	Good	Good	Fair	-
86	45+794	Good	Good	Fair	-
87	46+122	Good	Good	Fair	-
88	46+739	Good	Good	Fair	-
89	46+855	Good	Good	Fair	-
90	47+291	Good	Good	Fair	-
91	49+554	Good	Good	Fair	-
92	49+697	Good	Good	Fair	-
93	50+400	Good	Good	Fair	-
94	51+900	Good	Good	Fair	-
95	53+868	Good	Good	Fair	-
96	54+025	Good	Good	Fair	-
97	55+391	Good	Good	Fair	-
98	55+760	Good	Good	Fair	Good
99	56+335	Good	Good	Fair	-
100	56+645	Good	Good	Fair	-
101	58+622	Good	Good	Fair	-
102	59+233	Good	Good	Fair	-
103	60+729	Good	Good	Fair	-
104	61+673	Good	Good	Fair	-
105	62+038	Good	Good	Fair	Good

S. No	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
106	64+874	Good	Good	Fair	Good
107	65+280	Fair	Fair	Fair	-
108	65+442	Good	Good	Fair	-
109	65+572	Good	Good	Fair	-
110	65+870	Good	Good	Fair	-
111	66+002	Good	Good	Fair	-
112	66+140	Good	Good	Fair	-
113	66+350	Good	Good	Fair	-
114	67+070	Good	Good	Fair	-
115	67+373	Good	Good	Fair	-
116	67+440	Good	Good	Fair	-
117	68+056	Good	Good	Fair	-
118	68+248	Good	Good	Fair	Good
119	68+651	Good	Good	Fair	Good
120	69+433	Good	Good	Fair	Good
121	69+898	Good	Good	Fair	-
122	70+192	Good	Good	Fair	-
123	70+873	Good	Good	Fair	-
124	72+008	Good	Good	Fair	-
125	72+274	Good	Good	Fair	-
126	72+894	Good	Good	Fair	-
127	73+195	Good	Good	Fair	-
128	73+255	Good	Good	Fair	-
129	73+373	Good	Good	Fair	-
130	73+736	Good	Good	Fair	-
131	73+814	Good	Good	Fair	-
132	74+068	Good	Good	Fair	Good
133	74+549	Good	Good	Fair	Good
134	75+233	Good	Good	Fair	-

Annexure 4: Toll Revenue Calculations

Toll Plaza-I & II:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)	Traffic (AADT)
	Km.1+800	Km.70+000
Car/Taxi/Van	175	327
LCV	104	96
Bus	7	5
Truck	56	30
MAV	151	77

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution

A. TP-1: Km.1+800 (Silwani) (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	90%	10%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

B. TP-1: Km.70+000 (Sagar) (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	94%	6%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. Toll Rates :

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Km.1+800 (Silwani)	Km.70+000 (Sagar)
Car/Taxi/Van	20	25
LCV	45	65
Bus	90	135
Truck	105	160
MAV	210	320

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	1007995	533540	1633890	230080	2106405	11489645	17001555	170.016	170.016
2020-21	1197966	595231	1801548	247968	2250864	12400951	18494527	184.945	354.961
2021-22	1257864	624992	1891625	274831	2475950	13626626	20151890	201.519	556.480
2022-23	1320758	694844	2206896	303761	2717918	14943867	22188044	221.880	778.360
2023-24	1386795	770119	2317241	318949	2977893	16024913	23795910	237.959	1016.319
2024-25	1456135	808625	2433103	351641	3257071	17527248	25833823	258.338	1274.657
2025-26	1528942	893743	2810234	386805	3556721	19139755	28316201	283.162	1557.819
2026-27	2006736	938430	2950746	424607	3734557	20483218	27777298	277.773	1835.592

Toll Plaza-2 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	2793665	617670	2286635	250525	1723290	8928275	16600060	166.001	166.001
2020-21	2933306	689088	2585657	280182	1893623	9658563	18040418	180.404	346.405
2021-22	3079972	723542	2714939	304698	2048555	10602468	19474175	194.742	541.147
2022-23	3880764	804409	3054307	330965	2214247	11455275	21739967	217.400	758.546
2023-24	4074802	891553	3207022	359097	2457814	12536266	23526555	235.266	993.812
2024-25	4278542	936131	3591865	389215	2650454	13696718	25542925	255.429	1249.241
2025-26	4492470	1034671	3771458	421447	2856213	14755100	27331359	273.314	1522.555
2026-27	4717093	1086405	4207533	455929	3075922	16081192	26945732	269.457	1792.012

Summary:

Toll Plaza-1 &2 Total Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	3801660	1151210	3920525	480605	3829695	20417920	33601615	336.016	336.016
2020-21	4131272	1284319	4387205	528150	4144487	22059514	36534946	365.349	701.366
2021-22	4337836	1348535	4606565	579529	4524506	24229094	39626064	396.261	1097.626
2022-23	5201522	1499253	5261203	634726	4932165	26399142	43928011	439.280	1536.906
2023-24	5461598	1661672	5524263	678046	5435707	28561178	47322465	473.225	2010.131
2024-25	5734678	1744756	6024968	740856	5907524	31223966	51376747	513.767	2523.898
2025-26	6021412	1928414	6581692	808252	6412934	33894855	55647559	556.476	3080.374
2026-27	6723829	2024835	7158279	880535	6810479	36564410	54723030	547.230	3627.604

Annexure 5: Operation & Maintenance cost

Routine Maintenance cost for 1 year									
S. No.	**Item**		**Unit**	**No**	**Frequency per year**	**Quantity**	**Rate**	**Amount**	**Remarks**
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	75.995	12	4	350	12,76,716	04 Nos. of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km	3.7	24	4	350	1,24,320	04 Nos. of Labour
3	Watering in Median Plants	Once in Week	Km	3.7	52	1	1939	3,73,064	01 Nos. of Labour
6	ROW Cleaning	Half yearly	Km	37.9975	2	5	350	1,32,991	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	147	2	2	650	3,82,200	3 Nos. of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	75.995	4	1	350	1,06,393	02 Nos. of Labour
9	Maintenance of Bus shelters	Monthly	Nos	6	6	1	350	12,600	2 Nos./ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	2.00	6	15	350	63,000	02 Nos. of Labour for 30 days
11	Bridges	Half yearly	Nos	17	2	2	350	23,800	02 Nos. of Labour for removal of vegetation/Structure
Total								**24,95,084**	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10%

Routine Maintenance cost for 1 year									
S. No.	**Item**		**Unit**	**No**	**Frequency per year**	**Quantity**	**Rate**	**Amount**	**Remarks**
									Rental per year) including maintenance
2	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
							Total	**75,000**	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
Grand Total								**25,92,084.00**	

Incidental cost for 1 year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	5852	516	30,19,632	33 % of Total Project length on B/S for 1 year
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1139.925	225	7,69,449	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considered 500 Nos.)
5	MBCB	Monthly	RMT			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	75.995	4	19	2250	1,71,000	5 % of total stones per year (unable to understand the backup)
	Total amount for 1 Year							**42,40,081**	

Operational Expenses

S.NO.	PARTICULARS	Amount
1	Man Power	₹ 34,08,000
2	Fuel for Generator & Vehicles	₹ 12,20,560
3	Electricity	₹ 13,20,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 66,080
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	₹ 60,99,640

Summary Of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	1/20/2021					
1st Major Maintenance - Highway	4/1/2026	121,274,401	5.20	3.0%	140,183,239	14.02
				Total	₹ 140,183,239	14.02

Major Maintenance BOQ

BOQ Item No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	537,515.00	14.00	7,525,210
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tire Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00	
1	Semi Dense Bituminous concrete	Cum	8,145.98	6,800.00	55,392,630
2	Micro surfacing	Sqm	265,982.50	185.00	49,206,763
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints	MTRS	-	250.00	

BOQ Item No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	in concrete pavements using epoxy mortar or epoxy concrete)				
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00	
	Total				**112,124,603**
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	17,732.17	516.00	9,149,798
3	Road Studs	Nos	-	750.00	
	Total			-	**9,149,798**
	Grand Total				**121,274,401**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/S-S-J-S/2010/ 4910
Bhopal, dated 27 July, 2011

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Silwani-Sultanganj-Jaisinghnagar-Sagar Road on BOT(Toll + Annuity)basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Silwani-Sultanganj-Jaisinghnagar -Sagar Road on BOT (Toll + Annuity)basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **₹ 9.49 crores (Rupees nine crores forty nine lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, you are advised to send your acceptance and sign the Concession Agreement within the time stipulated in the R.F.P.documents.

Yours faithfully

Encl: Duplicate LOA to be returned after acknowledgement

(Neeraj Vijay
Dy .General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Certificate

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Independent Engineer for Development of Package – II, MPRDC (3Roads – Sehore, Silwani & Paron)
Team Leader Office: 1896, In front of Reliance Communication Office, Shiv Sthali Makronia SAGAR 470004 Madhya Pradesh India
Ph. +91-7582 231305 Mob. : +91-98263-94994, E-mail sagar@saiindia.com Web: www.saiindia.com

SAI/SAGAR/MPRDC-II/2012/323 Date- 30-11-2012

PROVISIONAL CERTIFICATE

1. I, SAI Consulting Engineers Pvt. Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.09.2011 (the "Agreement") for development of the Silwani – Sultanganj – Jaisinghnagar – Sagar Road Homogeneous Section – I (Silwani km 00 to Sultanganj km 30.00) of State Highway No. 15 (the "Project Highway") on design, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through DBL Silwani – Sultanganj Tollways Ltd. Bhopal (M.P), hereby certify that the Tests specified in Article-14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.

2. Constructions Works that are found incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the concessionaire) I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.

3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this 30th day of November 2012.

ACCEPTED, SIGNED,
SEALED AND DELIVERD
For and on behalf of
CONCESSIONAIRE by:

DILIP BUILDCON LIMITED * BHOPAL *

(Signature)
(Mr. Nitin Srivastava)
(Asst. General Manager)
(E-5/99, Arera Colony,
Bhopal – 462 016
Tel 0755 2461064/4290643)

SIGNED, SEALED AND
DELIVERED
For and on behalf of
INDEPENDENT ENGINEER by:

Darshan Mathur

(Signature)
(Mr. Darshan Mathur)
(Team Leader)
(House No. 1896,
Shivsthali, Makronia,
Sagar (M.P.) 470002)

Team Leader
SAI Consulting Engineers Pvt. Ltd.

Regd Office: SAI House Block-A Satyam Corporate Square, B/h Rajpath Club, Bodakdev, AHMEDABAD - 380 054 INDIA
Tel: +91-79-66142600 6614 2700 Fax: +91-79-66142800 E-mail: mail@saiindia.com Web: www.saiindia.com

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Independent Engineer for Development of Package – II, MPRDC (3Roads – Sehore, Silwani & Paron)
Team Leader Office: 1896, In front of Reliance Communication Office, Shiv Shali Makronia SAGAR 470004 Madhya Pradesh India
Ph. +91-7582 231305, Mob. : +91-98263-94994, E-mail sagar@saiindia.com, Web: www.saiindia.com

SAI/SAGAR/MPRDC-II/2013/451

Date- 25-03-2013

PROVISIONAL CERTIFICATE

1. I, SAI Consulting Engineers Pvt. Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.09.2011 (the "Agreement") for development of the Silwani – Sultanganj – Jaisinghnagar – Sagar Road Homogeneous Section – II (Sultanganj km 30 to Sagar km 75.995) of State Highway No. 15 (the "Project Highway") on design, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through DBL Silwani – Sultanganj Tollways Ltd. Bhopal (M.P), hereby certify that the Tests specified in Article-14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.

2. Constructions Works that are found incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the concessionaire) I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.

3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this 25th day of March 2013.

ACCEPTED, SIGNED,
SEALED AND DELIVERD
For and on behalf of
CONCESSIONAIRE by:

Silwani-Sultanganj Tollways Ltd. DBL BHOPAL

(Signature)
(Mr. Nitin Srivastava)
(Asst. General Manager)
(E-5/99, Arera Colony,
Bhopal – 462 016
Tel 0755 2461064/4290643)

SIGNED, SEALED AND
DELIVERED
For and on behalf of
INDEPENDENT ENGINEER by:

Darshan Mathur
Team Leader
SAI Consulting Engineers Pvt. Ltd.

(Signature)
(Mr. Darshan Mathur)
(Team Leader)
(House No. 1896,
Shivsthali, Makronia,
Sagar (M.P.) 470002)

Regd. Office: SAI House, Block-A, Satyam Corporate Square, B/h. Rajpath Club, Bodakdev, AHMEDABAD - 380 054 INDIA
Tel: +91-79-66142600, 6614 2700 Fax: +91-79-66142800 E-mail: mail@saiindia.com Web: www.saiindia.com

Annexure 8: Completion Certificate

SAI Consulting Engineers Pvt. Ltd.

An ISO 9001 Certified Company

Independent Engineer for Development of Package – II, MPRDC (3Roads – Sehore, Silwani & Paron)

Team Leader Office: 1896, In front of Reliance Communication Office, Shiv Shisti Makronia, SAGAR 470004 Madhya Pradesh, India
Ph. +91-7582 231305, Mob. : +91-98263-94994, E-mail: sagar@saiindia.com, Web: www.saiindia.com

SAI/SAGAR/MPRDC-II/2013/427

Date- 28/02/2013

COMPLETION CERTIFICATE

1. I, SAI Consulting Engineers Pvt. Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.09.2011 (the "Agreement") for two laning of the Silwani – Sultanganj – Jaisinghnagar – Sagar Road Homogeneous Section – 1 (Silwani km 00 to Sultanganj km 30.00) of State Highway No. 15 (the "Project Highway") on design, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through DBL Silwani – Sultanganj Tollways Ltd. Bhopal (M.P), hereby certify that the Tests specified in Article-14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 28th day of Feb 2013.

SIGNED, SEALED AND DELIVERED

For and on behalf of

INDEPENDENT ENGINEER by:

Darshan Mathur

Darshan Mathur

Team Leader

Team Leader
SAI Consulting Engineers Pvt. Ltd.

House No. 1896, Shivsthali,

Makronia,

Sagar - 470002

Regd. Office: SAI House, Block-A, Satyam Corporate Square, B/h. Rajpath Club, Bodakdev, AHMEDABAD - 380 054 INDIA
Tel: +91-79-66142600, 6614 2700 Fax: +91-79-66142600 E-mail: mail@saiindia.com Web: www.saiindia.com

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Independent Engineer for Development of Package – II, MPRDC (3Roads – Sehore, Silwani & Parpa)
Team Leader Office: 1596, In front of Reliance Communication Office, Shiv Shail Makrona, SAGAR 470004 Madhya Pradesh, India
Ph. +91-7582 231305, Mob. : +91-98263-94994, E-mail: sagar@saiindia.com, Web: www.saiindia.com

SAI/SAGAR/MPRDC-II/2013/488

Date- 29/05/2013

COMPLETION CERTIFICATE

1. I, SAI Consulting Engineers Pvt. Ltd. acting as Independent Engineer, under and in accordance with the Concession Agreement dated 09.09.2011 (the "Agreement") For two laning of the Silwani – Sultanganj – Jaisinghnagar – Sagar Road Homogeneous Section – II (Sultanganj km 30.00 to Sagar Km 75.995) of State Highway No. 15 (the "Project Highway") on design, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through DBL Silwani – Sultanganj Tollways Ltd. Bhopal (M.P), hereby certify that the Tests specified in Article-14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 29th day of May 2013.

SIGNED, SEALED AND DELIVERED

For and on behalf of

INDEPENDENT ENGINEER by:

Darshan Mathur
Team Leader
Sai Consulting Engineer Pvt Ltd
House No. 50, Parshav Pavilion ,
Near Indus Empire,
Gulmohar Colony,
Bhopal – 462 039

Regd. Office: SAI House, Block-A, Satyam Corporate Square, B/h. Rajpath Club, Bodakdev, AHMEDABAD - 380 054 INDIA
Tel: +91-79-66142600, 6614 2700 Fax: +91-79-66142600 E-mail: mail@saiindia.com Web: www.saiindia.com

Annexure 9: Insurance

Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:30:47 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/40**	**Prev Policy No**	:
Cover Note No	: ER1700203533	Cover Note Dt	: 08/09/2020
Insured's Code	: 114388343	Issuing Office Code	: 171200
Insured's Name	: DBL Silwani Sultangunj Tollways Ltd (GSTIN: 23AAECD0389C1Z3)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL 462016	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_INDCSH 3214000848 - 17/09/2020 GST INVOICE NO :2419487422 UIN :0

Gross Premium : 5,096 GST : 917 Stamp Duty : 1 Total : 6,013

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 1,01,88,667

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Silwani to Sultangunj

MADHYA PRADESH - 464551

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		1,01,88,667

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number: 321300441910001984

व्यवसाय स्रोत /*Business Source: 910355*

जारीकर्ता कार्यालय/**Issuing Office**

कार्यालय कोड /*Office Code: 321300*

कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

विक्रय चैनल वितरण/**Sales Channel** *Code: 91035500000001*

नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*

सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number: 1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL SILWANI SULTANGANJ TOLLWAYS LTD.

ग्राहक आईडी /Customer ID: 9701881833

पैन /PAN: AAECD0389C

पता/ Address: PLOT NO. 5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL (M.P)- 462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

फोन /Phone:

ई-मेल /E-Mail:

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 11,50,358.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 1,03,532.00		
SGST/UTGST	₹ 1,03,532.00		
IGST	₹ 0.00		
केरल बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/ Proposal Number and Date	8800200327086399 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/ Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 13,57,422.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Thirteen Lakh Fifty Seven Thousand Four Hundred Twenty Two Only.)

Location:2-Lane Road on Toll Plus Annuity Silwani-Sultanganj-Jaisinghnagar-Sagar Road section of State Highway No. 15, Madhya Pradesh Raisen, Raisen, 464551.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone III	1,05,25,00,000.00	1,00,000.00
2	Roads	Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone III	9,75,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess., Terrorism Damage Exclusion.

Printed on 27/03/2020 by ID: 71671, AID : 71671

Page no:

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL SILWANI SULTANGANJ TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203387794500000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203387794500000 Page 1 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office:
1st Floor,HDFC House, 165 - 166 Backbay Reclamation,
H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address:
D-301, 3rd Floor, Eastern Business District (Magnet Mall),
LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203387794500000 **Employees Compensation Insurance**

Insured Name	DBL SILWANI SULTANGANJ TOLLWAYS LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	13/05/2020

Period of Insurance	From Date & Time	19/05/2020 00:01 AM	To Date & Time	18/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203387794500000 Page 2 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 10: Change of Scope

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in

No...../MPRDC/Silwani-Sagar/2014 Bhopal, Date : /04/14

To,

Shri Darshan Mathur,
Team Leader, Independent Engineer,
M/s SAI Consulting Engineers Pvt. Ltd.,
50 Parsh Pavalion Near Indus Empire
Gul Mohar Bhopal

Sub :- Minutes of Meeting of Advisorey committee of MPRDC for Change of Scope-Silwani-Sultanganj-Sagar Road (SH15) BOT (Toll+Annuity) Project

Ref :- Your letter no SAI/SAGAR/MPRDC-II/2013/475Date 02.05.2013.

Various items under Change of Scope-Silwani-Sultanganj-Sagar Road (SH15) BOT (Toll+Annuity) Project were recommended by Independent Engineer letter dated 02.5.2013. Above items were discussed by advisory committee in its meeting dated 03.06.2013. Advisory committee has made recommendations on each item as mentioned in minutes of meeting, which has been approved by Managing Director on Dated 26.03.2013.Please find enclosed minutes of meeting of advisory committee with the instruction to submit build drawings & as per provision of article 16 of concession agreement so that necessary action may be taken by this office as per provision of concession agreement.

Encl : As above

Chief Engineer (BOT)
MPRDC, Bhopal

Endt.No. 103 /MPRDC/ Silwani-Sagar /2014 Bhopal, Date : 3 /04/14

Copy to :

1. General Manager (F) MPRDC Bhopal
2. Divisional Manager MPRDC Bhopal
3. Shri Nitin Shrivastava M/s DBL Silwani Sultanganj Tollways Ltd Bhopal

Encl : As above

Chief Engineer (BOT)
MPRDC, Bhopal

SILWANI-SULTANGANJ-SAGAR ROAD PROJECT(SH-15)
CHANGE OF SCOPE

Meeting of Advisory committee of MPRDC for Change of Scope for Silwani –Sultanganj- Sagar Road BOT(Toll plus annuity scheme) has been held in the office of MPRDC on 03.06.2013.Following Officers were present in the meeting:

1) Mr. A.S. Chendke, Technical Advisor, MPRDC, Bhopal
2) Mr. Anil Chansoria, Chief Engineer (BOT), MPRDC, Bhopal
3) Mr. Arun Paliwal, General Manager (Fin.), MPRDC, Bhopal
4) Mr. B.S. Meena, Divisional Mangaer, MPRDC, Bhopal
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Change of Scope submitted by Independent Engineer vide its letter No. SAI/SAGAR/MPRDC-II/2013/475 dated 02.05.2013 have been discussed one by one and finalised as below:

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
1	HIGHWAY WORK					
1)	Built up area in Silwani between chainage 0+000 to 0+263.		Reconstrction of 7.0 m flexible pavement+ 1.5 m Paved shoulder (both side) + 1.0 m Granular shoulder (both side) with side drain in 0.6 km length between Chainage 0+000 to 0+600 in Built - up Section of Silwani town.	Existing rigid pavement 7.0m wide from Ch. 0 to 263 is in good condition, which is retained. Proposed 2.5 m both side widening with rigid pavement and side drain at km 0+000 to 0+263	The existing 7.0 m wide Rigid pavement is good in condition and as per site condition the requirement of 12.0 m wide rigid pavement is necessary due to Silwani urban area. Concessionaire has proposed the widening of existing rigid pavement by rigid pavement of 2.5 m both side in place of 1.5 m paved shoulder & 1.0 m granular shoulder. Hence negative change of scope is 7.0 m wide flexible pavement + 2x1.5m paved shoulder+2x1.0 Granular shoulder for 263 length and positive change of Scope for 2x2.5 Rigid Pavement in 263 m length .	Committee agreed with recommendation of IE to negative change of scope for 7.0 m wide flexible pavement + 2x1.5m paved shoulder+2x1.0 Granular shoulder for 263m length and positive change of Scope for 2x2.5 Rigid Pavement in 263 m length .

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
2	STRUCTURE WORK					
A	MINOR BRIDGE					
1)	10+500 (As per site 10+236)	Minor bridge 2x15m continuous span with over all width 8.4m, in good condition.	Widening of Minor Bridge at KM 10+500 of 2 span of 15 m (Total length 30m) to 12 m width	Retained the Minor Bridge at KM 10+236 of 2 span of 15 m (Total length 30m) with 8.4 m width as it is.	The location of minor bridge is situated in forest area and condition is good. The bridge is retained as per Clasuse 7.3.2 (ii) of SP:73. Hence widening of 2 spans of 15m from 8.4 m to 12 m i.e. 3.6 m is **Negative variation under change of scope**	Committee agreed with recommendation of IE to retain the minor bridge and widening of 2 spans of 15m from 8.4 m to 12 m i.e. 3.6 m as Negative variation under change of scope
2)	28+900 (As per site 27+940)		Construction of new Minor Bridge at KM 28+900 with RCC Solid Slab of 2 span of 8 m (Total length 16 m) with 12 m width	Construction of new Hume Pipe Culvert of 2 x 1200 mm dia at KM 27+940 with 15 m width	As per site condition and topography, there was no defined nallah for which such larger minor bridge is required. Hence Minor bridge of size 2x8 m with 12m width is negative variation & Pipe culvert of size 2x1200 mm dia of with 15m width is positive variation.	Committee agreed with recommendation of IE for new construction of Minor Bridge of size 2x8m with 12m width as negative variation and pipe culvert of size 2x1200 mm dia with 15m with as positive variation under change of scope.

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
B	BOX CULVERT					
1)	15+000 (As per site 14+603)	Stone masonry arch culvert of 1m span with overall width of 10.8m in poor condition.	Re construction with RCC Box Culvert at KM 15+000 of size1x2 x 2 m with 12 m width	Re construction with Hume Pipe Culvert of 2 x 1200 mm dia at KM 14+603 having 12 m width	The location is situated is ghat section and reconstruction to box culvert was practically difficult due to space and forest constrain and as per hydraulic calculations 2x1200 mm dia pipe culvert well found sufficient. Hence Box culvert of size 1x2x2 with 12 m width is negative variation & Pipe culvert of 2x1200 mm dia having 12m width is positive variation.	Committee agreed with recommendation of IE for reconstruction of Box Culvert of Size 1x2x2 with 12m width as negative variation under change of scope and reconstruction of pipe culvert 2x1200mm dia with 12.5m width as poistive variation under change of scope.
2)	75+080 (As per site 73+373)	Flush causeway of 39 m. length.	Re construction with RCC Box Culvert at KM 75+080 of size2x2 x 2 m with 12 m width	Re construction with Hume Pipe Culvert of 2 X 1200 mm dia at KM 73+373 having 15 m width.	As per site condition such larger opening was not required, the pipe culvert proposed was adequate. Hence Box culvert of size 2x2x2 with 12 m width is negative variation & Pipe culvert of 2x1200dia having 15m width is positive variation.	Committee agreed with recommendation of IE for reconstruction of Box Culvert of Size 2x2x2 with 12m width as negative variation and reconstruction of pipe culvert 2x1200mm dia with 15m width as poistive variation under change of scope.
3)	75+200 (As per site 73+736)	Flush causeway of 39 m. length.	Re construction with RCC Box Culvert at KM 75+200 of size2x 2 x 2 m with 12 m width	Both side Widening of existing Hume Pipe Culvert of 2 x 900 mm dia at KM 73+736 from 12m to 17m Width.	In schedule 'A' existing FCW is mentioned while at site actual existing structure is 2X900 mm dia NP4 pipe culvert having 12 m width with good condition, which is sufficient to cater for discharge. Hence reconstruction by Box culvert of size 2x2x2 m with 12 m width is negative variation & widening of existing Pipe culvert 2x900 mm dia from 12m to 17 m width is positive variation.	Committee agreed with recommendation of IE for reconstruction of Box Culvert of Size 2x2x2 with 12m width as negative variation and widening of pipe culvert 2x900mm dia from 12m to 17m width as poistive variation under change of scope.

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
C	PIPE CULVERT					
(I)	RE-CONSTRUCTION INTO BOX CULVERT					
1)	53+300 (As per site 52+010)	Hume Pipe Culvert of 2x1000 mm dia with 12.5 m width	Retained	Re construction with RCC Box Culvert at KM 52+010 of Single cell of size 4 X 2.66 m with 12 m width	As per site condition and hydraulic assesment pipe culvert was not sufficient hence box culvert of size 1x4x2.66 is recommended. Hence reconstruction of box culvert in place of retained pipe culvert is Positive variation under change of scope	Committee agreed of with recommendation of IE for reconstruction of Box Culvert of size 1x4x2.66 in place of retained pipe culvert as positive variation under change of scope.
2)	53+800 (As per site 52+458)	Hume Pipe Culvert of 4x1000 mm dia with 12.5 m width	Retained	Re construction with RCC Box Culvert at KM 52+458 of Double cell of size 3 X 3.06 m with 12 m width	As per site condition and hydraulic assesment pipe culvert was not sufficient hence box culvert of size 2x3x3.06 is recommended. Hence reconstruction of box culvert in place of retained pipe culvert is **Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of Box Culvert of size 2x3x3.06 in place of retained pipe culvert as positive variation under change of scope.
(II)	RE-CONSTRUCTION INTO HUME PIPE CULVERT					
1)	1+369	–	–	Reconstruction with Hume Pipe culvert of 1 X 1200 mm dia	The existing pipe culvert was settled and damaged hence reconstruction is recomonded. Reconstructed Hume Pipe culvert of 1x1200 mm dia with 15 width is Positive variation under change of scope	Committee agreed with recommendation of IE for reconstruction of pipe culvert 1x1200mm dia with 15m width as positive variation under change of scope.
2)	56+645	–	–	Reconstruction with Hume Pipe culvert of 1 X 1200 mm dia.	Due to damage to the pipes observed, reconstruction with 1x1200mm dia HPC is recommended. Reconstruction of Hume Pipe culvert of 1x1200 mm dia with 15 width is **Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of pipe culvert 1x1200mm dia with 15m width as positive variation under change of scope.

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
3)	62+200 (As per site 60+728)	Hume Pipe Culvert of 1x1000 mm dia with 12.5 m width	Retained	Reconstruction with Hume Pipe culvert of 2 X 1200 mm dia at Km 60+729.	The condition of culvert was poor(i.e. few pipes were damaged and sagging in barrel observed), more over local inquiry revealed the over topping of present culvert,hence reconstruction with increased capcity HPC of size 2x1200 mm dia with 15m width is recommended. **Reconstruction of pipe culvert in place of retained pipe culvert is Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of pipe culvert 2x1200mm dia with 15m width as positive variation under change of scope.
4)	74+500 (As per site 73+195)	Hume Pipe Culvert of 1x1000 mm dia with 12.5 m width.	Retained	Re construction with Hume Pipe culvert of 1 X 1200 mm dia at KM 73+195 with 12.5 m width	The pipes were found damaged and no head walls were provided. Hence reconstruction of pipe culvert of size 1x1200 mm dia with 12.5m width in place of retained pipe culvert recommended which is **Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of pipe culvert 1x1200mm dia with 12.5m width as positive variation under change of scope.

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
5)	74+700 (As per site 73+255)	Hume Pipe Culvert of 2x1200 mm dia with 12.5 m width.	Retained	Re construction with Hume Pipe culvert of 1 X 1200 mm dia at KM 73+255 with 12.5 m width	At site existing structure was HPC of 1x1000 mm dia, the pipes were damaged and no head walls were provided hence reconstruction is recommended. Reconstruction of pipe culvert of size 1x1200 mm dia 12.5m width in place of retained pipe culvert recommended which is **Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of pipe culvert 1x1200mm dia with 12.5m width as positive variation under change of scope.
6)	75+480 (As per site 73+814)	Hume Pipe Culvert of 1x1000 mm dia with 12.5 m width	Retained	Re construction with Hume Pipe culvert of 2 X 1200 mm dia at KM 73+814 with 15 m width	In Schedule A 1 X 1000 dia pipe culvert is indicated but on site FCW was available which could be replaced with 2 X 1200 dia Pipe Culvert. Reconstruction of pipe culvert of size 2x1200 mm dia 15mwidth in place of FCW is **Positive variation under change of scope**	Committee agreed with recommendation of IE for reconstruction of pipe culvert 2x1200mm dia with 15m width as positive variation under change of scope.

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
(III)	WIDENING					
1a	10+334	–	–	Both side Widening with Hume Pipe culvert from 10m to 15m	Though the structure was not included in Schedule A or B but at site HPC of 900mm with 10.0 width is in existance, due to raising of FRL/change in alignment the present barrel length was not enough as per X-sectional requirement, the existing pipes were found in good condition, hence widening of 5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m of 1 No of Pipe Culverts as positive variation under change of Scope
1b	43+556 (12.5m), 63+200 (12.5m), 65+442 (10m), 68+248 (12.5m), 75+232 (12.5m)	–	–	One side/Both side Widening with Hume Pipe culvert . 43+556 (17.5m), 63+200 (17.5m), 65+442 (15m), 68+248 (15.5m), 75+232 (17.5m)	Though the structure was not included in Schedule A or B but at site HPC of 1000mm with 10.0 to 12.5m width is in existance, due to raising of FRL/change in alignmen the present barrel length was not enough as per X-sectional requirement, the existing pipes were found in good condition, hence 5m widening for 5 Nos. is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening for 5m of 5 Nos of Pipe Culverts as positive variation under change of Scope

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
1c	66+140	–	–	One side Widening with Hume Pipe culvert from 12.5 to 15m .	Though the structure was not included in Schedule A or B but at site HPC of 1200mm with 12.5m width is in existance, due to raising of FRL/change in alignment the present barrel length was not enough as per X-sectional requirement, the existing pipes were found in good condition, hence widening for 2.5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening for 2.5m of 1 No of Pipe Culverts as positive variation under change of Scope
2a	32+300(31+526), 38+500(37+616), 38+900(37+899), 66+450(64+874), 67+100(65+280), 67+800(66+002)	Hume Pipe culverts 1 row with 1000 mm dia. With 10.0 m width.	Retained	One side/Both side Widening with Hume Pipe culvert . 32+300-15m, 38+500-12.5m , 38+900-12.5m, 66+450-15m, 67+100-15m, 67+800-15m	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening for 5 m for 4 Nos and 2.5m for 2 Nos HPC is recommended. Widening is **Positive variation under change of scope**	Committee agreed with recommendation of IE for widening for 5 m for 4 Nos and 2.5m for 2 Nos HPC as positive variation under change of Scope
2b	31+700(30+857), 48+200(47+291), 63+250(61+673), 63+600(62+038)	Hume Pipe culverts 1 row with 1000 mm dia. With 12.0 m width.	Retained	One side/Both side Widening with Hume Pipe culvert from 12m to 17m.	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening for 5m of 4 Nos HPC is recommended. Widening is **Positive variation under change of scope**	Committee agreed with recommendation of IE for widening for 5m of 4 Nos HPC as positive variation under change of Scope

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
2c	29+200(28+423), 29+900(29+174), 37+600(36+669), 37+900(36+975), 41+600(40+503), 41+900(40+894), 45+600(44+432)	Hume Pipe culverts 1 row with 1000 mm dia. With 12.5 m width.	Retained	One side/Both side Widening with Hume Pipe culvert from 12.5m to 17.5m.	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m for 7 Nos HPC is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m for 7 Nos HPC as positive variation under change of Scope
3a	67+500(65+870), 75+600(74+068)	Hume Pipe culverts 2 rows with 1000 mm dia. With 10.0m width	Retained	One side/Both side Widening with Hume Pipe culvert from 10m to 15m .	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m for 2 Nos HPC is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m for 2 Nos HPC as positive variation under change of Scope
3b	36+900(34+994), 36+500(35+545), 43+400(42+337), 45+650(44+681)	Hume Pipe culverts 2 rows with 1000 mm dia. With 12.5m width	Retained	One side/Both side Widening with Hume Pipe culvert . 35+900(17.5m), 36+500(17.5m), 43+400(20m), 45+850(20m)	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m for 2 Nos HPC and 7.5m of 2 Nos HPC is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m for 2 Nos HPC and 7.5m of 2 Nos HPC as positive variation under change of Scope

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
4)	34+300(33+388)	Hume Pipe culverts 3 rows with 1000 mm dia. With 12.0 width	Retained	Both side Widening with Hume Pipe culvert from 12m to 17m..	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m of 1 No of Pipe Culverts as positive variation under change of Scope
5)	67+200(65+572)	Hume Pipe culverts 4 rows with 1000 mm dia. With 10.0 m width	Retained	Both side Widening with Hume Pipe culvert from 10 to 15m .	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m of 1 No of Pipe Culverts as positive variation under change of Scope
6)	31+000(30+188)	Hume Pipe culverts 1 row with 1200 mm dia. With 12.5m width	Retained	One side Widening with Hume Pipe culvert from 12.5m to 20.5m .	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 7.5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 7.5m of 1 No of Pipe Culverts as positive variation under change of Scope
7)	28+400(27+681)	Hume Pipe culverts 2 rows with 1200 mm dia. With 12.5m width	Retained	One side Widening with Hume Pipe culvert from 12.5m to 17.5m.	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m is recommended. **Widening is Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m of 1 No of Pipe Culverts as positive variation under change of Scope

Sr. No.	Chainage	Existing Detail as per Schedule A	Development Proposal as per Schedule "B"	Proposal of Concessionaire as per site condition	Reasons and Recommendation by Independent Engineer	Decision of Committee
8)	22+300(21+720)	Hume Pipe culverts 3 rows with 1200 mm dia. With 12.5m width	Retained	One side Widening with Hume Pipe culvert from 12.5m to 17.5m.	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 5m is recommended. Widening is **Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 5m of 1 No of Pipe Culverts as positive variation under change of Scope
9)	22+700(22+131)	Hume Pipe culverts 5 rows with 1200 mm dia. With 12.5m width	Retained	One side Widening with Hume Pipe culvert from 12.5m to 20m.	Though the structures were proposed to be retained in Schedule B but due to raising in FRL /Shifting of alignment the barrel lengths were not enough as per X-sectional requirement hence widening of 7.5m is recommended. Widening is **Positive variation under change of scope**	Committee agreed with recommendation of IE for widening of 7.5m of 1 No of Pipe Culverts as positive variation under change of Scope

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Annexure 11: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Development of Sitamau-Basai-Suwasara Major District Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

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Development of Sitamau-Basai-Suwasara Major District Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Sitamau-Suwasara	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL SITAMAU SUWASARA TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing road "Sitamau-Basai-Suwasara" section of MDR in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on 5th December,2011.

Project road starts at Sitamau (Km.0.000) and ends at Suwasara (Km.34.973) passing through Tilrod, Surjani, Belara and Basai in the state of Madhya Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis. Project Location map is given at Fig 1-1.

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL SITAMAU SUWASARA TOLLWAYS LIMITED vide agreement dated 26th March 2018

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 Project Data:

The details of the Project are listed in the following table.

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Construction, Operation and Maintenance of Sitamau-Basai-Suwasara section of MDR on DBFOT (Design, Build, Finance, Operate and Transfer) on Toll plus Annuity basis.
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL SITAMAU SUWASARA TOLLWAYS LIMITED
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	17.10.2011
7	Date of Agreement	05.12.2011
8	Design length as per Schedule B of CA	Approximately 34.973 Kms.
9	Length omitted under negative Change in Scope	-0.014 Kms.
10	Actual length constructed	34.959 Kms.
11	Project lane configuration	2 Lane
12	EPC cost	55.00 Cr
13	Nature of contract	BOT (Toll + Annuity)
14	Toll collected by	Concessionaire
15	Concession period	15 years from the appointed date
16	Appointed date	04.05.2012
17	Concession end date	03.05.2027
18	Construction period	730 days from the appointed date.
19	Schedule completion date	04.05.2014
20	Date of issuance of Provisional Certificate (Commercial operation date)	28.03.2013
21	Date of issuance of Completion Certificate	15.06.2013

S. No.	Particulars	Details
22	Annuity amount (every six months)	3.69 Cr
23	Total number of annuities payable	26 Nos.
24	First annuity payment date	28.09.2013
25	Total number of annuity paid	15 Nos.

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of the CA including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No	Particulars	As per CA	As per COS	As per Site
1	Total project length	34.973 Kms.	-0.014 Kms.	34.959 Kms.
2	Four lane divided carriageway	0.550 m	---	0.550 Kms.
3	Two lane with paved shoulder	2.573 Kms.	-0.014 Kms.	2.559 Kms.
4	Bypass realignment	0.200 m	---	0.200 Kms.
5	Intermediate lane with granular shoulder	31.650 Kms.	---	31.650 Kms.
6	Rigid pavement-two lane with paved shoulder	2.123 Kms.	-0.014 Kms	2.109 Kms.
7	Flexible pavement	32.850 Kms.	---	32.850 Kms.
8	Toll plaza	1 No.	--	1 No.
9	Bus bays / Bus shelters	24 Nos.	--	24 Nos.
10	Truck lay bays	--	--	--
11	Major junction	1 No.	--	1 No.
12	Minor Junctions	11 no.	--	11 no.
13	Major Bridges	2 No.	--	2 No.
14	Minor Bridges	7 No.	--	7 No.
15	Pipe Culverts	25 Nos.	+1,-1	25 Nos.
16	Slab/Box Culverts	5 Nos.	--	5 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Sections shown below as per schedule, during the construction.

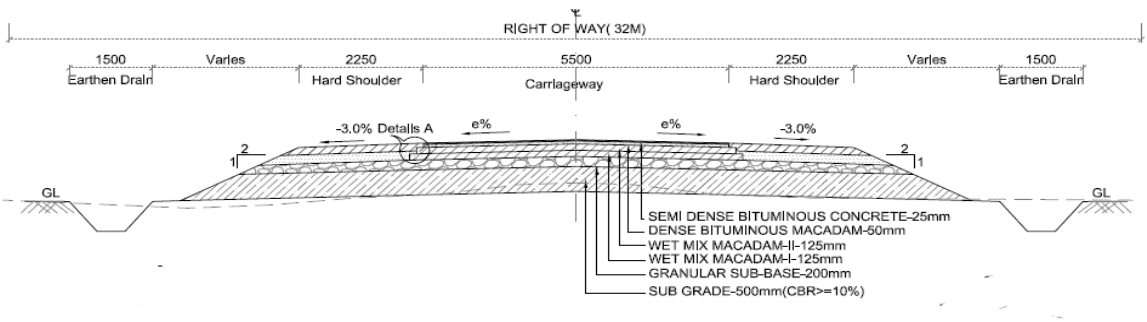

Figure 2.1: (TCS 1) Intermediate Lane with Hard Shoulder

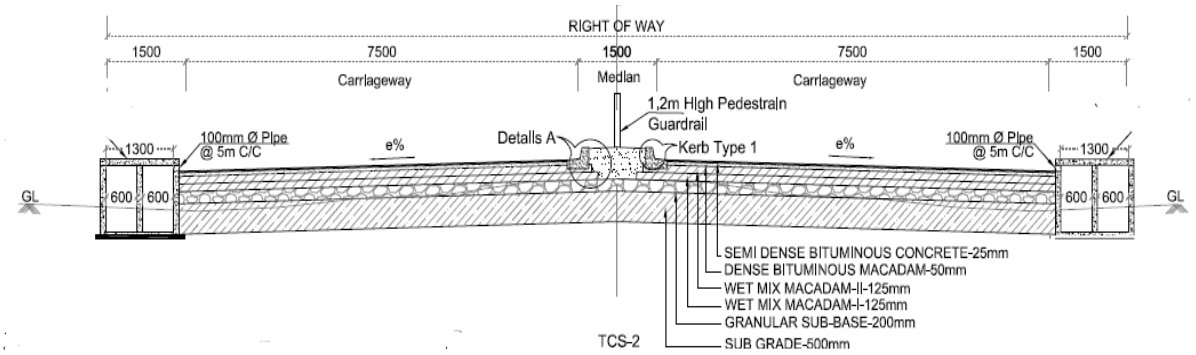

Figure 2.2: (TCS 2) 4-Lane Divided Carriageway with Footpath

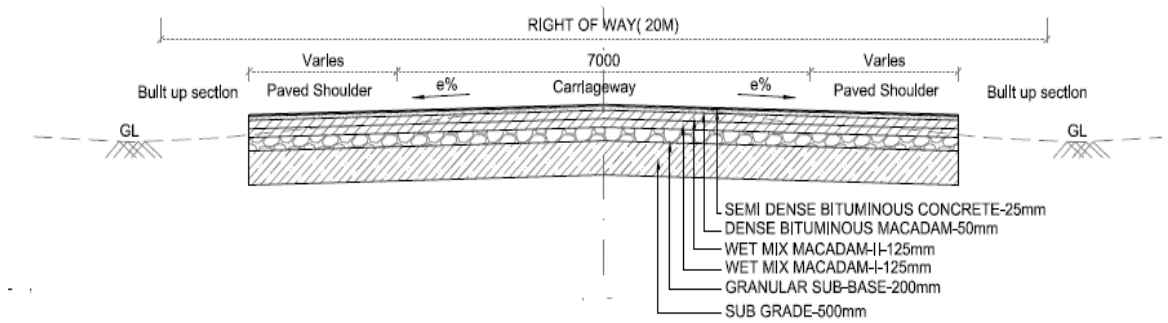

Figure 2.3: (TCS 3) 2-Lane Flexible Pavement with Paved Shoulder

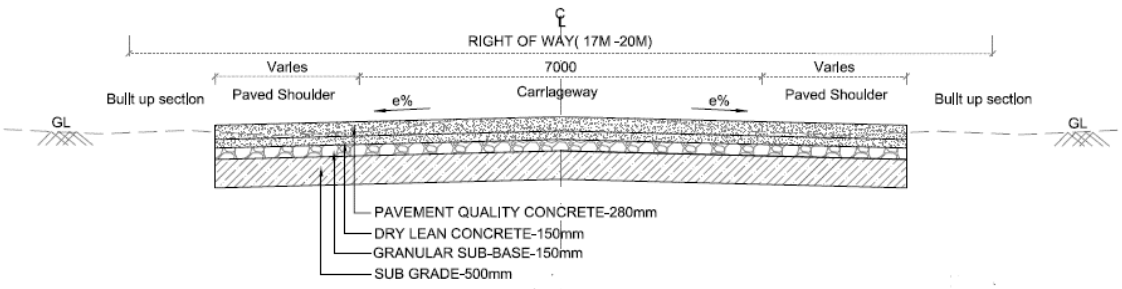

Figure 2.4: (TCS 4A) 2-Lane Rigid Pavement with Paved Shoulder

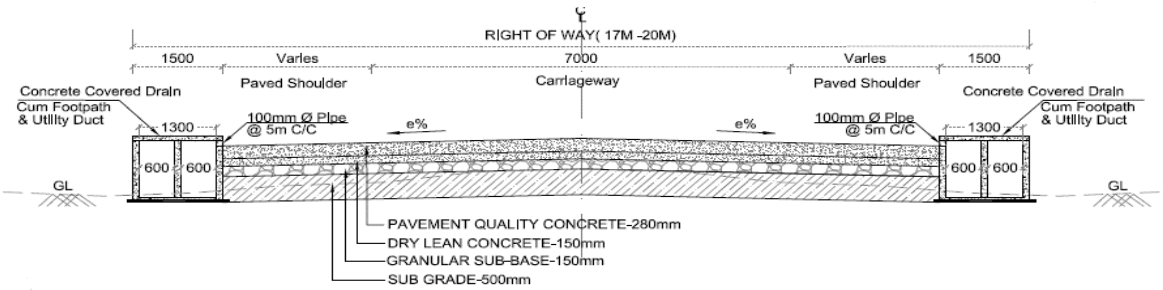

Figure 2.5: (TCS 4B) 2-Lane Rigid Pavement with Paved Shoulder

As built drawings are verified and the pavement crust is found in accordance with TCS. TCS schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Length (Kms.)	Type of TCS
1	0+000	0+550	0.550	TCS 2
2	0+550	7+450	6.900	TCS 1
3	7+450	8+050	0.600	TCS 4A
4	8+050	9+600	1.550	TCS 1
5	9+600	9+800	0.200	TCS 4A
6	9+800	12+270	2.470	TCS 1
7	12+270	12+70	0.200	TCS 3
8	12+470	14+400	1.930	TCS 1
9	14+400	14+650	0.250	TCS 3
10	14+650	16+480	1.830	TCS 1
11	16+480	16+790	0.310	TCS 4A
12	16+790	21+770	4.980	TCS 1
13	21+770	21+970	0.200	TCS 4A
14	21+970	33+750	11.780	TCS 1
15	33+750	33+850	0.100	TCS 4B
16	33+850	33+960	0.110	TCS 3
17	33+960	34+000	0.040	TCS 4B
18	34+000	34+386	0.386	TCS 1
19	34+386	34+959	0.573	TCS 4B

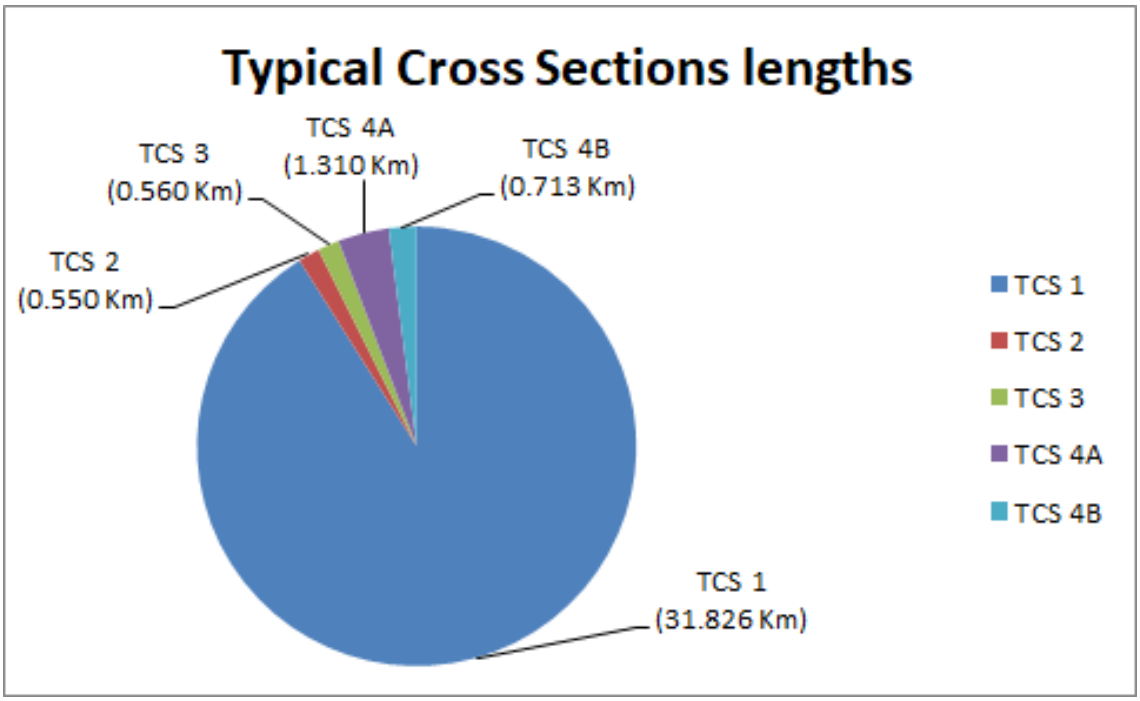

Figure 2.6: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of the CA in strict adherence to the Standard Specifications set forth in Schedule D of the CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

2.4 Service Roads:

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the CA.

2.5 Bypass/Realignment:

Realignment is constructed from Km 22+600 to Km 22+800 as per Provisions of Schedule B of the CA.

2.6 Intersections:

As per provisions of Schedule B of the CA, 1 Major Intersection and 11 Minor Intersections are provided. Details are given below.

Table 2.3: Summary of Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
Major Intersection			
1	0+000	T	SH 14
Minor Intersection			
1	0+600	T	Village Road
2	7+930	T	Village Road
3	12+338	X	Village Road
4	19+540	T	Village Road
5	22+800	T	Village Road
6	26+059	T	Village Road
7	26+120	T	Village Road
8	28+200	X	Village Road
9	33+245	X	Village Road
10	34+025	T	Village Road
11	34+973	X	MDR

2.7 Grade Separated Structures and underpasses:

There are no Grade separated structures in the Project, as per provisions of Schedule B of the CA.

2.8 Road Under Bridge:

There is one existing RUB, which was Retained at Km 33+911 as per provisions of Schedule B of the CA.

2.9 Summary of the Carriageway Details:

The details of Pavement and Carriageway type are shown in the following table.

Table 2.4: Summary of Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	2 Lane with Earthen shoulder	31.826		Fig 2.1 of Schedule D of CA
2	2 Lane with Paved shoulder	0.560	2.023	Fig 2.3 of Schedule D of CA
3	4 Lane	0.550	---	Fig 2.2 of Schedule D of CA
4	Total Length of the Project	34.959 Kms.	---	
	TYPE OF ALIGNMENT			
5	New Alignment	---	---	
6	Realignment	0+200	---	
7	Strengthening	---	---	
8	Reconstruction	32.736	2.023	
9	Total Length of the Project	34.959 Kms.	---	

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No.	Description	RUB	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1	2	---	3	---
2	Widening	---	---	3	3	4
3	Reconstruction	---	---	4	15	1
4	New	---	---	---	4	---
5	Improvement	---	---	---	---	---
	Total	**1**	**2**	**7**	**25**	**5**

2.11 Toll Plazas

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Ch. 4+500. Salient features of Toll Plaza are provided below.

- Each side comprises of, one normal lane and one extra wide lane.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- Closed circuit cameras are installed and monitored in administrative building.

2.12 Bus shelters

As per the provisions of Schedule C of the CA, 24 Nos. Bus shelters are provided in the entire length of Project. Details such as Chainage Location and Name of Village are listed in the following table.

Table 2.6: Bus shelters details

S. No.	Chainage (Km.)	Side*	Remarks	S. No.	Chainage (Km.)	Side*	Remarks
1	3+200	LHS	Palint	13	19+500	LHS	Kejadiya
2	3+300	RHS	Palint	14	19+600	RHS	Mandsaur
3	7+720	LHS	Titrod	15	22+650	LHS	Mandsaur
4	7+800	RHS	Titrod	16	22+500	RHS	Khamkhed
5	11+000	LHS	Devchiri	17	26+050	RHS	Khamkhed
6	11+200	RHS	Devchiri	18	26+150	LHS	Kantiya
7	12+280	LHS	Belara	19	28+150	RHS	Kantiya
8	12+380	RHS	Belara	20	28+250	LHS	Dhamniya
9	14+500	LHS	Belara	21	33+150	RHS	Dhamniya
10	14+600	RHS	Dhikaliya	22	33+320	LHS	Gangadhar
11	16+500	LHS	Dhikaliya	23	34+680	RHS	Gangadhar
12	16+650	RHS	Kejadiya	24	34+750	LHS	Suwasara

*Note: LHS-Left Hand Side, RHS-Right Hand Side

2.13 Other Project Facilities Provided as per Schedule C of the CA

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained
- Medical Aid Post: Provided at toll plaza location and operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza location and is functional.

Km. 0+000

Km. 4+000

Km. 3+600

Km. 11+400

Km. 10+400

Km. 15+000

Km. 15+000

Km. 26+600

Figure 2.7: Photos Representing Project Facilities.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in the following table. Representative photographs are given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain and Rolling Terrain
2	Land Use	Built Up 3 %, Agriculture 64% and Barren 22%
3	Two lane length	34.409 Kms.
4	Four lane length	0.550 kms.
5	Earthen shoulder	1.0 m to 1.5 m width on site
6	Realignment	200 m
7	Junctions	12 Nos.
8	Toll Plaza	Km. 4+500
9	Sign boards	Sign boards are provided as per requirement
10	Road Markings	Lane markings are provided as per requirement
11	Bus Bays /shelters	24 Nos.
12	Street Lighting	Highway lighting provided as per requirement
13	Avenue plantation	Provided

3.3 Pavement Condition:

Pavement Condition survey was carried out on the Project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm, sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future Pavement Conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey

is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general Pavement Condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The Pavement Condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (% of surface area)
  - Potholes (% of surface area
  - Patching (% of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement Condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP 19 and is given in **ANNEXURE 1.** The summary of Pavement Condition is given below.

Table 3.2: Pavement condition summary

Chainage		Length (kms.)	Condition
From (km.)	To (km.)		
0+000	34+973	34.973	Good

Km. 2+200

Km. 11+400

Km. 8+400

Km. 16+200

Km. 27+800

Figure 3.1: Representative pavement condition photos

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the Structures:

Inspection of existing structures on the Project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures :

The Inventory of the Structures at site is as follows.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	2 Nos.
2	Minor Bridge	7 Nos.
3	Pipe culverts	25 Nos.
4	Slab/Box Culverts	5 Nos.

The Super structure of Major bridges is of RCC Balanced cantilever type resting on RCC single/twin circular column type piers and abutments supported by well foundations. The Super structure of Minor Bridge is of RCC solid slab and the sub-structures are of RCC/PCC conventional wall type Piers and Abutments supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the Culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges:

The total length of the major bridge at Km 20+879 is 110.0m with 4 spans. The superstructure consists of RCC Box girder built as balanced cantilever. Each pier consists of single RCC circular column with a hammer head capping beam whereas abutment is regular RCC wall type abutment. Well foundations have been constructed for all piers and abutments. Superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

The total length of the major bridge at Km 21+089 is 294.6m with 13 spans. The superstructure consists of RCC Box girder built as balanced cantilever. Each pier consists of twin RCC circular columns connected with a capping beam and abutments are of wall type with CRS Masonry. Well foundations have been constructed for piers and abutments. Superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage	Span Arrangement	Total Length of Bridge (m)
1	Km.20+879	3x32m+1x14m.	110.0
2	Km.21+089	2x18.6m+11x23.4m.	294.6

The condition of the superstructure and substructure is good.

Km. 21+089

Figure 4.1: Representative photos of Major Bridge

4.4 Details of Minor Bridges

There are 7 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are of Tar Paper and neoprene bearings. RCC crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span Arrangement	Total Length of Bridge (m)	Description
1	0+818	1x6.0 m	6.0	The structure has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
2	1+596	2x3.65	7.3	The Minor Bridge has RCC solid slab superstructure supported on CRM/RCC wall type piers and abutments. Other features are Tar Paper Bearings and buried type expansion joints, Brick Masonry parapet, bituminous wearing coat.
3	4+030	1x6.6m	6.6	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar Paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
4	8+578	2x7.3m	14.6	The Minor Bridge has RCC solid slab superstructure supported on PCC/RCC wall type piers and abutments. Other features are Tar Paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
5	10+083	2x7.7m	15.4	It has RCC solid slab superstructure supported on PCC/RCC wall type piers and abutments. Other features are Tar paper Bearings and

S. No.	Chainage (Km.)	Span Arrangement	Total Length of Bridge (m)	Description
				buried type expansion joints, RCC crash barrier, bituminous wearing coat.
6	12+656	1x6.7m	6.7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, Brick Masonry parapet, bituminous wearing coat.
7	21+650	1x8.4m	8.4	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, Brick Masonry parapet wall, bituminous wearing coat.

Km. 4+030

Km. 10+083

Figure 4.2: Representative photos of minor bridges

4.5 Details of culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

General Description of the Slab/Box Culverts

The details of the culverts are given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span
1	7+660	1x 3.6m.
2	10+873	1 x 3.6m.
3	13+150	1 x 3.8m.
4	21+433	1x 2.0m.
5	22+070	1x 3.4m.

The general condition of above slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works if required etc.

Km: 21+433

Figure 4.3: Representative photo of Box Culvert

General Description of the Pipe Culverts

The details of the pipe culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	No. of Rows& Dia (m)	Sl. No.	Chainage @Km.	No. of Rows& Dia(m)
1	0+400	1 x 1.0	14	16+715	1x1.2
2	2+890	1 x 1.2	15	16+780	2x1.2
3	3+060	2 x 1.2	16	16+870	1 x 1.2
4	9+693	1 x 1.2	17	18+388	1 x 1.0
5	11+792	2 x 0.9	18	19+736	1 x 1.0
6	11+950	1 x 1.2	19	19+898	1 x 1.0
7	12+638	1 x 1.2	20	19+995	1x1.2
8	13+400	1 x 1.2	21	22+790	1 x 1.2
9	14+455	1 x 1.2	22	23+427	1 x 1.2
10	14+630	1 x 1.2	23	24+980	1 x 1.2
11	14+737	1 x 1.2	24	25+350	1 x 1.2
12	15+215	2 x 1.0	25	26+560	1 x 1.2
13	16+489	1 x 1.2			

Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULE

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

The Pavement crust details as per the approved pavement design of the project are given below:

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters	Adopted values
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	8 years for BT 15 years for Granular	8 years for BT 15 years for Granular
3	Design Traffic (MSA)	4 MSA for BT 9 MSA for Granular	5 MSA for BT 10 MSA for Granular
4	Surface course (SDBC)	25 mm	25 mm
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	150 mm	200 mm

5.3 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Real Time Traffic from COD and Projected Traffic Current years with 5% growth for CMSA

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2014	519	233	50	30	88	400	0.38	0.38	1	Actual
2015	922	343	61	46	143	593	0.57	0.95	2	Actual
2016	916	314	52	40	112	517	0.50	1.45	3	Actual
2017	849	343	52	37	133	565	0.54	1.99	4	Actual
2018	775	345	52	37	138	571	0.55	2.54	5	Actual
2019	971	429	55	41	145	670	0.64	3.18	6	Actual
2020	1127	387	56	43	139	625	0.60	3.78	7	Actual
2021	1183	407	58	45	146	657	0.63	4.41	8	Projected
2022	1243	427	61	48	154	690	0.66	5.07	9	Projected
2023	1305	449	64	50	161	724	0.69	5.76	10	Projected
2024	1370	471	67	52	169	760	0.73	6.49	11	Projected
2025	1439	495	71	55	178	798	0.76	7.25	12	Projected
2026	1510	519	74	58	187	838	0.80	8.06	13	Projected
2027	1586	545	78	61	196	880	0.84	8.90	14	Projected
2028	1665	572	82	64	206	924	0.89	9.79	15	Projected

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 4.41,9.79 respectively. Traffic considered in pavement design(5MSA,10MSA) is more than estimated traffic based on above actual traffic. Hence the pavement design adopted is found in order.

Details of Pavement design for Rigid Pavement are as follows:

Table 5.3: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	250/ 280
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	280
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	560

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA and 10 MSA for a design life of 8 years for Bituminous layers (up to end of the year 2020) and 15 years for granular layers respectively (up to the end of the year 2027), whereas the actual traffic is 4 MSA and 9 MSA for 8 years and 15 years

respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed on or before 2020(However overlay was done in 2018). Next over lay is scheduled in 2025.
Periodic Maintenance for Rigid Pavement – re-texturing shall be done at least once in 10 years from construction (as per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special publication SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC :103	Guidelines for Pedestrian Facilities
IRC : SP-15	Ribbon Development along highways and its prevention
IRC : SP-23	Vertical curves for highways
IRC : SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC : SP-55	Guidelines for safety in construction zones
IRC :SP- 88	Manual of Road Safety

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available	Good
		Village sign Board	Available	Good
		Informatory Boards	Available	Good
		Object Hazard Markers at culverts	Available	Good
2	Road Marking	Studs & Lane Marking	Available	Fair
3	Metal Beam Crash Barriers	At High Embankments	Available	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly

Km. 0+000

Km. 2+000

Km. 5+200

Km. 6+000

Km. 8+400

Km. 11+200

Km. 11+400

Km. 12+400

Km. 14+200

Km. 32+600

Km. 16+200

Km. 34+900

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are done for road users along the project road and the same is found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

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CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll plaza on the project road at Ch. 4+500. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes is 3.2 m and in extra wide lane is 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at toll plaza

S. No.	Description	No.
1	OHLS	4 Nos
2	LPIC	4 Nos
3	AVC	2 Nos
4	RFID	4 Nos
5	Printer	1 No
6	Booth camera	1 No
7	Intercom (Internal)	4 Nos
8	Voilation Alarm	4 Nos
9	UFD	1 No
10	Server	1 No
11	PoE switch	1 No
12	NVR	1 No
13	PTZ Camera	1 No

7.3 Vehicles

The list of vehicles, which were observed at site for operation of highway and toll plaza, is presented below**.**

Table 7.2: List of Vehicles

S. No.	Vehicle Type	No.
1	Patrol vehicle	1
2	Ambulance	1
3	Water tanker	1

Figure 7.1: Km. 4+500 Toll Plaza

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided the details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2016	335426	114816	19144	14569	40864	524819
2017	309738	125026	19049	13495	48666	515974
2018	282830	125810	19160	13383	50206	491389
2019	354433	156570	20231	14876	52806	598916
2020	412525	141817	20318	15765	50970	641395
AACGR* (%)						5.63%

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8-2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	230861	2318	112395	18344	15123	50313	429354
Toll Revenue collection in Rs.	4617220	185407	5619750	1886605	1856775	12112205	26277962

The figures shown in Table 8-1 are as per the Real time traffic data on project road for the past five years and the growth rate is calculated to be 5.63%. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (**Table 8.2)** is

considered as a base year traffic and the projected traffic growth rate is restricted to 5% even though the growth as per **Table 8.1** is >5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in **Table 8.3.**

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	639	308	50	41	138	537	639	462	151	124	620	1357	Actual
2021	671	323	53	44	145	564	671	485	158	131	651	1425	Projected
2022	704	339	55	46	152	593	704	509	166	137	684	1496	Projected
2023	740	356	58	48	160	622	740	535	175	144	718	1571	Projected
2024	777	374	61	50	168	653	777	561	183	151	754	1650	Projected
2025	815	393	64	53	176	686	815	590	192	159	792	1732	Projected
2026	856	413	67	56	185	720	856	619	202	167	831	1819	Projected
2027	899	433	71	58	194	756	899	650	212	175	873	1910	Projected
2028	944	455	74	61	204	794	944	682	223	184	916	2005	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in **Table 8.4**

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1
Location	Km. 4+500
4 lane length in kms.	0
2 lane length in kms.	35
Agreement Date	05-12-2011
Appointed Date	04-05-2012
Concession period	15 years
Commercial operation date	15-06-2013
Concession End Date	03-05-2027
Traffic study year	2020
Vehicle Type	**AADT (Veh.)**
Car/Jeep/Van	639
2-axle Bus	308
LCV/LGV	50

Particular	Toll plaza 1
2A-Truck	41
MAV (2A-6A)	138
Growth Rate (%)	5%

The split trip type, based on the available toll data from Concessionaire is used to derive the annual toll collection for the plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 @ Km. 4+500	Remarks
2019-20	262.780	Actual
2020-21	281.967	Projected
2021-22	309.631	Projected
2022-23	332.984	Projected
2023-24	378.761	Projected
2024-25	406.230	Projected
2025-26	434.642	Projected
2026-27	472.397	Projected
2027-28	45.754	33 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3. carrying out preventive and periodic maintenance of the Project road;
4. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6 Functioning of the lighting system;
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Lay byes
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefore;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance:

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2018	Executed
2	2nd Periodic Maintenance	2025	Scheduled

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per Programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Sept 2020. As per Schedule K of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement. The BBD test is to be conducted once in a year.

Concessionaire has conducted the test in Jan 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.131	0.098		0.30	0.53
2021	0.135	0.101		0.31	0.55
2022	0.139	0.104		0.32	0.57
2023	0.143	0.107		0.33	0.58
2024	0.147	0.110		0.34	0.60
2025	0.152	0.113	5.39	0.35	6.01
2026	0.156	0.117		0.36	0.64
2027	0.161	0.120		0.37	0.66
2028	0.015	0.011		0.03	0.06
Total	**1.180**	**0.882**	**5.390**	**2.742**	**10.194**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D of the CA
- Operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA)
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

Provide performance security to the Authority

- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of the CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the CA. Provisional Completion Certificate given in **ANNEXURE 7**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8**

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope, proposals were initiated during construction period and consented by the MPRDC. Details are provided in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents.
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment

- Preventing any un authorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of the CA (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty) days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.

- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8):

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire,

Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Article 25)

The Annuity payment of Rs 3.69 Crores is due and payable by the Authority to the Concessionaire for each six months after COD as set forth in Clause 25.2.1 and Schedule Y of CA.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Paid on
1	1st Annuity	08-Oct-13
2	2nd Annuity	02-Apr-14
3	3rd Annuity	04-Oct-14
4	4th Annuity	31-Mar-15
5	5th Annuity	03-Oct-15
6	6th Annuity	04-Apr-16
7	7th Annuity	05-Oct-16
8	8th Annuity	03-Apr-17
9	9th Annuity	07-Oct-17
10	10th Annuity	17-Apr-18
11	11th Annuity	04-Oct-18
12	12th Annuity	30-Mar-19
13	13th Annuity	30-Sep-19
14	14th Annuity	21-Apr-20
15	15th Annuity	28-Sep-20

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 9**. Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	3213004419 10001985	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Employees Compensati on Insurance Policy	HDFC ERGO General Insurance Company Ltd	311420338 8604100000	19.05.2020	18.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project
EEI Policy	Oriental Insurance Company Limited	171200/44/ 2021/39	08.09.2020	07.09.2021	Electronic Equipment installed in the project road

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time traffic data collected from the submissions made as per Schedule N of the CA, the traffic growth observed is 5.63%. However, 5% only considered while estimating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Ch.4+500 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per site requirement. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively. Based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried out in 2018 and next MM is scheduled in 2025.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
0+000	1+000								G		PS & ES	F	F	LD & ULD	F	
1+000	2+000								G		ES	F	F	ULD	F	
2+000	3+000								G		ES	F	F	ULD	F	
3+000	4+000								G	2-2.5	ES	F	F	ULD	F	
4+000	5+000								G		ES	F	F	ULD	F	
5+000	6+000								G		ES	F	F	ULD	F	
6+000	7+000								G		ES	F	F	ULD	F	
7+000	8+000								G		PS & ES	F	F	LD & ULD	F	
8+000	9+000								G		ES	F	F	ULD	F	
9+000	10+000								G		PS & ES	F	F	LD & ULD	F	
10+000	11+000								G		ES	F	F	ULD	F	
11+000	12+000								G		ES	F	F	ULD	F	
12+000	13+000								G		PS & ES	F	F	LD & ULD	F	
13+000	14+000								G		ES	F	F	ULD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
14+000	15+000								G		PS & ES	F	F	LD & ULD	F	
15+000	16+000								G	2-2.5	ES	F	F	ULD	F	
16+000	17+000								G		PS & ES	F	F	LD & ULD	F	
17+000	18+000								G		ES	F	F	ULD	F	
18+000	19+000								G		ES	F	F	ULD	F	
19+000	20+000								G	2-2.5	ES	F	F	ULD	F	
20+000	21+000								G		ES	F	F	ULD	F	
21+000	22+000								G		PS & ES	F	F	LD & ULD	F	
22+000	23+000								G		ES	F	F	ULD	F	
23+000	24+000								G	2-2.5	ES	F	F	ULD	F	
24+000	25+000								G		ES	F	F	ULD	F	
25+000	26+000								G		ES	F	F	ULD	F	
26+000	27+000								G	2-2.5	ES	F	F	ULD	F	
27+000	28+000								G		ES	F	F	ULD	F	
28+000	29+000								G		ES	F	F	ULD	F	
29+000	30+000								G	2-2.5	ES	F	F	ULD	F	
30+000	31+000								G		ES	F	F	ULD	F	
31+000	32+000								G		ES	F	F	ULD	F	
32+000	33+000								G	2-2.5	ES	F	F	ULD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
33+000	34+000		5	3					F		ES	F	F	ULD	F	
34+000	34+973								G		PS & ES	F	F	LD & ULD	F	

Annexure 2: Condition of Bridges

Type of Structure	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Minor Bridge	Major Bridge	Major Bridge	Minor Bridge
Chainage (Km.)	0+818	1+596	4+030	8+578	10+083	12+656	20+879	21+089	21+650
Substructure	Good	Good	Good	Good	Good	Good	Good	Good	Good
Superstructure	Good	Good	Good	Good	Good	Good	Good	Good	Good
Expansion Joint	Good	Good	Good	Good	Good	Good	Fair	Fair	Good
Approach slabs	Good	Good	Good	Good	Good	Good	Good	Good	Good
Drainage spouts	-	-	-	-	-	-	-	-	-
Approaches	Good	Good	Good	Good	Good	Good	Good	Good	Good
Wearing coat	Good	Good	Good	Good	Good	Good	Fair	Fair	Good
Bearings	-	-	-	-	-	-	-	-	-
Quadrant Pitching	Fair	Fair	Good	Good	Fair	Good	Fair	Fair	Fair
Toe wall	-	-	-	-	-	-	-	-	-
Aprons	-	-	-	-	-	-	-	-	-
Remarks	-	-	-	-	-	-	-	-	-

Annexure 3: Condition of Box/Slab/ Hume Pipe Culverts

Condition of Box/ Slab Culverts

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet wall
1	7+660	Good	Good	Good	Fair	-	Good
2	10+873	Good	Good	Fair	Fair	-	Good
3	13+150	Good	Good	Fair	Fair	-	Good
4	21+433	Good	Good	Fair	Fair	-	Good
5	22+070	Good	Good	Good	Fair	-	Good

Condition of pipe Culverts

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+400	Good	Good	Good	
2	2+890	Good	Good	Good	
3	3+060	Good	Good	Fair	
4	9+693	Good	Good	Fair	
5	11+792	Good	Good	Fair	
6	11+950	Good	Good	Fair	
7	12+638	Good	Good	Fair	
8	13+400	Good	Good	Fair	
9	14+455	Good	Good	Fair	
10	14+630	Good	Good	Fair	Fair
11	14+737	Good	Good	Fair	Fair
12	15+215	Good	Good	Fair	Fair
13	16+489	Good	Good	Fair	Fair
14	16+715	Good	Good	Fair	
15	16+780	Good	Good	Fair	
16	16+870	Good	Good	Fair	
17	18+388	Good	Good	Fair	
18	19+736	Good	Good	Fair	
19	19+898	Good	Good	Fair	Fair
20	19+995	Good	Good	Fair	Fair
21	22+790	Good	Good	Fair	Fair
22	23+427	Good	Good	Fair	Fair
23	24+980	Fair	Fair	Fair	Fair
24	25+350	Good	Good	Fair	Fair
25	26+560	Good	Good	Fair	Fair

Annexure 4: Estimation of Toll Revenue

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table 1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km. 4+500
Car/Taxi/Van	639
LCV	308
Bus	50
Truck	41
MAV	138

2. **Traffic Growth Rates**

Table 2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table 3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99%	1%	100%
LCV	100%	-	100%
Bus	100%	-	100%
Truck	100%	-	100%
MAV	100%	-	100%

4. **Toll Rates :**

Table 4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km.4.500
Car/Taxi/Van	20
LCV	50
Bus	105
Truck	125
MAV	240

Toll Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	4617220	185407	5619750	1886605	1856775	12112205	26277962	262.780	262.780
2020-21	4848081	206845	5900738	2022426	2064290	13154296	28196675	281.967	544.746
2021-22	5090485	217187	6815352	2224669	2250870	14364491	30963053	309.631	854.377
2022-23	5345009	241461	7156119	2442079	2450947	15662820	33298436	332.984	1187.361
2023-24	7015325	267619	8197009	2675670	2665405	17055071	37876098	378.761	1566.122
2024-25	7366091	281000	8606860	2926514	2895181	18547390	40623035	406.230	1972.353
2025-26	7734395	310579	9037203	3195753	3039940	20146303	43464173	434.642	2406.994
2026-27	8121115	326108	10279818	3355541	3298335	21858738	47239655	472.397	2879.391
2027-28	8527171	359534	10793809	3658830	3574969	23692052	4575370	45.754	2925.145

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	34+959	12	4	350	5,87,311	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	km	2+559	24	4	350	85,982	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	2+559	52	1	1939	2,58,019	01 Nos of Labour
6	ROW Cleaning	Half yearly	Km	17+4795	2	5	350	61,178	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	30	2	2	650	78,000	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	34+959	4	1	350	48,943	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	24	6	1	350	50,400	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	1.00	6	15	350	31,500	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	7	2	2	350	9,800	02 Nos of Labour for removal of vegetation/ Structure
								12,11,133	

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Grass cutter	Monthly	Nos	0.6	12	0	12000	330	(12000/year)
3	Bikes	Monthly	Nos	0.6	12	0	2500	1,100	Per Supervisor/Per Month
4	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								76,430	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
3	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
	Total Maintenance Cost							**13,09,563.00**	

Incidental cost for 1 year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	779	516	4,01,964	10 % of Total Project length on B/S for 1 year
2	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	524.385	225	3,53,960	5% of total Shoulder length throughout the project
3	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
4	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
5	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	34.959	4	9	2250	81,000	5 % of total stones per year (unable to understand the backup)
	Total amount for 1 Year							**9,78,924**	

Operational Expenses Statement

S.NO.	Particulars	Amount
1	Man Power	₹ 20,16,000
2	Fuel for Generator & Vehicles	₹ 5,76,000
3	Electricity	₹ 3,30,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 37,760
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	₹ 30,44,760

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2026	4,66,53,620	5.20	3.0%	5,39,27,750	5.39
				Total	₹ 5,39,27,750	5.39

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	2,35,700.00	14.00	32,99,800

2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00	
	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant	Cum	3,049.38	6,800.00	2,07,35,750
	Micro surfacing	Sqm	1,13,725.00	160.00	1,81,96,000
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	1,054.50	250.00	2,63,625
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	1,054.50	130.00	1,37,085
	Total				4,26,32,260
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of cement concrete kerb without channel (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - Consider 5% for construction period.	Rmt	-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	7,793.33	516.00	40,21,360

3	Road Studs	Nos	-	750.00	
	Total Chapter 9			-	40,21,360
	Grand Total				4,66,53,620

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 215 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in

No. MPRDC/BOT/S-B-S/2010/ 5220
Bhopal, dated 12 October 2011

M/s Dilip Buildcon Ltd.
E-5/99, Arera Colony,
Bhopal

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of ₹ 3.69 **crores (Rupees three crores sixty nine lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Thanking you,

Yours faithfully

Encl: **Duplicate copy of LoA**

(Neeraj Vijay)
Dy .General Manager

Annexure 7: Provisional Completion Certificate

TES

Theme Engineering Services Pvt. Ltd.
M1-191, Vyas Nagar, Near Hanuman & Shankar Temple,
Ujjain-456010 (M.P.)
Email:themeujjain@gmail.com
Ph no.-0734/2519209

Ref. No: - S-B-S/TLO/2013/210

Date: - 28/03/2013

PROVISIONAL CERTIFICATE

1. I S.C.Jain acting as Independent Engineer, under and in accordance with the Concession Agreement dated 05th Dec.2011 for development of Sitamau Basai Suwasra Road (MDR) on BOT (Toll+ Annuity) Basis Section Starts From KM.0+000 at Sitamau Village Junction with Sh-14 and terminates at Km.34+973 by joining With MDR-45 near Suwasara Village(the "MDR") on build operate and Transfer (BOT) (Toll +Annuity) basis, through M/S DBL SITAMAU SUWASRA TOLLWAYS LIMITED, BHOPAL ,hereby certify that the Tests specified in Article 14 and Schedule –I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement,

2. Constructions Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the agreement. (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional certificate cannot be withheld on this account. Through remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire,) I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway Pending completion thereof.

3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the agreement, the Project Highway is herby provisionally declared fit for entry into commercial operation on this the 28th day of march 2013.

ACCEPTED, SIGNED, SEALED
AND DELIVERED
For and on behalf of
CONCESSIONAIRE by:

(Signature)
Devendra Jain
(Director)
DBL Sitamau Suwasara Tollways Ltd.
E-5, 99, Arera Colony, Bhopal

SIGNED SEALED AND
DELIVERED
for and on behalf of
INDEPENDENT ENGINEER by:

28/3/13

(Signature)
S.C.Jain
(Team Leader)
Theme Engineering Services Pvt.Ltd.
M1-191, Vyas Nagar, Ujjain (M.P)

Annexure 8: Completion Certificate

TES

Theme Engineering Services Pvt. Ltd.
M1-191, Vyas Nagar, Near Hanuman & Shankar Temple,
Ujjain-456010 (M.P.)
Email:themeujjain@gmail.com
Ph No: 0734-2519209

Letter No: - H-R/TLO2013/ 319 Date:- 15/06/2013

To
Shri Mahendra Singh
Authorized Signatory
Theme Engineering Services Pvt. Ltd,
Jaipur-302018 (Raj.)

Sub: - Recommendation for issuing Completion Certificate of Sitamau-Basai-Suwasara road on BOT (Toll+ Annuity) basis.

It is to intimate that the Sitamau-Basai-Suwasara road from Km. 0/000 at Sitamau village SH-14 junction to Km 34/973 of Major District Road (the MDR) is completed by M/s DBL Sitamau Suwasara Tollways limited on 15.06.2013. I undersigned recommend the following completion certificate to be signed by authorized signatory.

COMPLETION CERTIFICATE

1. I ,Sh. S. C. Jain, acting as Independent Engineer, under and in accordance with the Concession Agreement dated 05/12/2011 (the "Agreement"). For Two laning of the Sitamau- Basai - Suwasara section from Km. 0/000 at Sitamau Village SH-14 junction to Km.34/973 of Major District Road (the " MDR") on build, operate and transfer (BOT) basis, through M/s DBL Sitamau Suwasara Tollways Ltd, hereby certify that the Tests specified Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof.
2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 15th of June 2013.

Enclosed: - Photocopy of Completion Certificate Page No. 35 of Schedule-I.

RECOMMENDED AND SIGNED

Sd/-
(S. C. Jain)
Team Leader
Theme Engineering Services Pvt. Ltd,

Date: - 15/06/2013

Copy to,

1) Chief Engineer (MDR), MPRDC, Bhopal
2) Divisional Manager, MPRDC, Ujjain.

(S.C. Jain) 15.6.13
Team Leader

Theme Engineering Services Pvt.Ltd.
B-24, Gokul Vatika, Jawahar Circle, Jaipur-302018(Raj.) Ph.:-+91-141-2774608,06,09

Annexure 9: Insurance

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number: ***321300441910001985***	व्यवसाय स्रोत /*Business Source: 910355*
जारीकर्ता कार्यालय/***Issuing Office***	बिक्रय चैनल वितरण/***Sales Channel*** *Code: 91035500000001*
कार्यालय कोड /*Office Code: 321300*	नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*	सह दलाल कोड / *Co Broker Code:*
State Code: 23 , Madhya Pradesh	
GSTIN: 23AAACN9967E1ZB	**Customer Care Toll Free Number: 1800 345 0330**
Contact Number: 755 2682822	
eMail: 321300@nic.co.in	**email:customer.support@nic.co.in**
Mobile Number:	

Strengthening, Widening, Maintaining and Operating of Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis.
Name of the co insured under the policy is Dilip Buildcon Ltd. & MPRDCL.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause.

जिसकी गवाही में दिनि/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को विधिवत अधिकृत किया जा रहा है उसके हाथ निर्धारित किए जाएं। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठांकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट https://nationalinsurance.nic.co.in पर उपलब्ध है, को एक अनुबंध के रुप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दिया जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्रारम्भिकता निरस्त हो जाएगी। ***/IN WITNESS WHEREOF,*** *the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this* 27/March/2020. *This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website https://nationalinsurance.nic.co.in shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that* ***IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'***

इंश्योरेन्सइंडियालिमिटिड

स्टांप ड्यूटी
Stamp Duty:
(₹ 0.50)

कृते नेशनल इन्श्योरेन्स कंपनी लिमिटिड/ *For and on behalf of National Insurance Company Limited*

अधिकृत हस्ताक्षरकर्ता/ *Authorized Signatory*

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001985

जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /*Office Code: 321300*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /*Business Source: 910355*
बिक्रय चैनल वितरण/**Sales Channel** *Code: 91035500000001*
नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL SITAMAU SUWASARA TOLLWAYS LTD
पता/ Address: PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE CHUNA BHATTI, KOLAR ROAD BHOPAL, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 8815188912

ग्राहक आईडी /Customer ID: 9701370278
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAECD0387N

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 6,16,298.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 55,467.00		
SGST/UTGST	₹ 55,467.00		
IGST	₹ 0.00		
केरला बाढ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	8800200327086774 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्पुरापूर्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 7,27,232.00	पछिली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Seven Lakh Twenty Seven Thousand Two Hundred Thirty Two Only.)
Location: Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis, Madhya Pradesh Mandsaur, Mandsaur - District Others, 458339.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	56,53,52,000.00	1,00,000.00
2	Roads	Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	5,08,08,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:

Printed on 27/03/2020 by ID: 71671

Page no: 1 of 1

Scanned with CamScanner

Signer: ATUL JE[illegible]
Date: Fri, Nov 6, 2[illegible] 29:57 IST
Location: NOID[illegible]
Reason: Sign[illegible]licy [illegible]ICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/39**	**Prev Policy No**	:
Cover Note No	: ER1700203534	Cover Note Dt	: 08/09/2020
Insured's Code	: 114389445	Issuing Office Code	: 171200
Insured's Name	: DBL Sitamau Suwasara Tollways Ltd (GSTIN: 23AAECD0387N1ZI)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL462016@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000170 (1140)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898205111 PHONE NO 0265-2252274,BARODA,GUJARAT,390007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000847 - 17/09/2020 GST INVOICE NO :2419487413 UIN :0

Gross Premium : 1,582 GST : 285 Stamp Duty : 1 Total : 1,867

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 35,14,783

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Sitamau to Suwasara

MADHYA PRADESH - 458888

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		35,14,783

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

HDFC ERGO General Insurance Company Limited

Certificate of Insurance cum Policy Schedule

Policy No. 3114203388604100000 **Employees Compensation Insurance**

Insured Name	DBL SITAMAU SUWASARA TOLLWAYS LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	14/05/2020

Period of Insurance	From Date & Time	19/05/2020 00:01 AM	To Date & Time	18/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203388604100000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 10: Change of Scope

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.
(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPABX), 0755-2550995, Fax : 91-755-2572643
Website : www.mprdc.nic.in

No...../MPRDC/MDR/2015

Bhopal, Date : /03/15

To,

Team Leader,
M/s Theme Engineering Services
Independent Engineer, Ujjain

Sub :- Minutes of Meeting of Advisory committee of MPRDC for Development of Sitamau-Basai-Suwasara Road on BOT (Toll +Annuity) Scheme - Change of Scope .

Ref :- Your letter no. S-B-S/TL/2015/1122 dated 03.02.2015.

Please find enclosed the Minutes of meeting of Advisory Committee of its meeting dated 27.02.2015 the change of scope for Development of Sitamau-Basai- Suwasara Road on BOT (Toll +Annuity) Scheme.

In principle approval of change of scope as per minutes of Advisory Committee (enclosed) are hereby granted with the instructions to submit Financial implication as per provision of Concession Agreement within 15 days time.

Encl: Minutes of meeting

Chief Engineer (MDR)
MPRDC, Bhopal

Endt.No. 187 ...../MPRDC/MDR/2015

Bhopal, Date : 4 /04/15

Copy to :

1. General Manager (F) MPRDC, Bhopal
2. General Manager MPRDC, Indore
3. Divisional Manager MPRDC, Ujjain
4. M/s DBL, Bhopal

Encl : As above

1/4/15
Chief Engineer (MDR)
MPRDC, Bhopal

Connecting People Through quality infrastructure

MINUTES OF MEETING

Meeting of advisory committee of MPRDC for change of scope for Development of Sitamau-Basai-Suwasra road on BOT (Toll+Annuity) basis assigned to M/S DBL Sitamau-Suwasra tollways ltd. Bhopal has been held in the office of MPRDC on dated 02.04.2014, 31.05.2014 & 27.02.2015. Following officials were presenting in the meeting:-

1. Shri A.S. Chendke , Technical Advisor, MPRDC, Bhopal
2. Shri Narendra Kumar , Chief Engineer (MDR), MPRDC, Bhopal
3. Shri Alok Chaturvedi , General Manager, MDR, MPRDC, Bhopal
4. Shri Arun Paliwal, GM (Fin.), MPRDC, Bhopal
5. Shri A.L.Suryawanshi General Manager MPRDC Indore
6. Shri Rakesh Jain, Divisional Manager, MPRDC, Ujjain
7. Shri Anil Shrivastava, AGM, MDR, MPRDC, Bhopal
8. Shri O.P. Sharma, Team Leader, Independent Engineer, M/s Theme Engineering Services Pvt. Ltd., Jaipur
9. Shri Nitin Shrivastava , General Manager, Concessionaire, M/S DBL Sitamau-Suwasra tollways ltd. Bhopal

The work change of scope recommended by Independent Engineer vides its letter no. S-B-S/TL/2015/1122. On dated 03/02/2015 have been discussed one by one as and decided as below:

Change of Scope for Road Works Sitamau -Basai -Suwasara Road

S NO.	Particular	Place / Location	As per Schedule-B				As Constructed by Concessionaire on site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
			From (Km)	To (Km)	Length (Km)	Existing width to be paved excluding drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width paved excluding drains (in Mtr.)		
1	Four lane	Sitamau	0+000	0+550	.55	Four lane	0+000	0+550	.55	Four lane	Executed as per Schedule-B no change of scope	Committee agreed
2	Two lane paved shoulder in builtup stretch	Titrod	7+450	8+050	.60	17	7+450	8+050	.60	17	Executed as per Schedule-B no change of scope	Committee agreed
		Surjani	9+600	9+800	.20	17	9+600	9+800	.20	17	Executed as per Schedule-B no change of scope	Committee agreed
		Belara	12+250	12+450	.20	17	12+250	12+450	.20	17	Executed as per Schedule-B no change of scope	Committee agreed
		Dhikaliya	14+400	14+650	.25	17	14+400	14+650	.25	17	Executed as per Schedule-B no change of scope	Committee agreed
		Kejadiya	16+500	16+800	.30	17	16+500	16+800	.30	17	Executed as per Schedule-B no change of scope	Committee agreed
	Two lane paved shoulder in builtup stretch	Basai	21+800	22+000	.20	17	21+800	22+000	.20	17	Executed as per Schedule-B no change of scope	Committee agreed

							33+750	33+870	.120	12	Executed as per Schedule-B no change of scope	Committee agreed
		Overpass	33+750	34+000	.25	12	33+870	34+000	.130	12	Permission from Railway could not be obtained for construction in this stretch. It is recommended to consider as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
		Suwasra	34+400	34+973	.573	14	34+400	34+973	.573	10	Land in this portion could not be made available due to public hindrance. It is recommended to consider as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
3	Total Project Length	34.973 km.					34.959 km				Actual length of project reduced by 14 m. It is recommended to consider reduced length as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
4	Drain	2x2.573 km.=5.164 km.					5.078 km.				Actual length of drain reduced by 68 m. It is recommended to consider reduced length of drain as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.

TL

Works Sitamau -Basai -Suwasara Road
CHANGE OF SCOPE(Structure)

Sl. No.	Type of Structure	Chainage		Detail as per Schedule -A	Development of Proposal as per Schedule-B			Proposal as per Actual Construction			Reasons/Justification and recommendation of I.E for Change	Decision of Committee
		Existing	Design		Proposal	Type of Structure	Span arrangement	Proposal	Type of Structure	Span arrangement		
1	-	0+333	0+334	Burried	Recons.	HPC	1 X 1.20	Recons.	HPC	1 X 0.900	As per SP-73, 900mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
2	HPC	3+068	3+066	PC, 2 X 0.750	Recons.	HPC	2 X 1.20	Recons.	HPC	1 X 1.20	Only 1 X 1.20 m HPC constructed in place of 2 X 1.20 m HPC by Concessionaire. Hence It is recommended difference of cost Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE

3	-	-	3+500	-		HPC	1 X 1.20	New	HPC	1 X 1.20	Additional culvert. No change of scope not acceptable as per clause 4.00 of Schedule-B	Committee agreed
4	-	12+647	12+638	Burried	Recons.	HPC	1 X 1.20	Not Constructed			Not required as per site condition, as Minor bridge at ch. 12+656 (2x3.45) is constructed. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
5	HPC	16+725	16+715	PC, 2 X 0.300	Recons.	HPC	1 X 1.20	Recons.	HPC	1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed

6	SC	16+789	16+780	SC, 1 X 1.00	Recons.	HPC	2 X 1.20	Recons.	HPC	1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed
7	HPC	16+880	16+870	PC, 1 X 0.450	Recons.	HPC	1 X 1.20	Recons.	HPC	1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
8	HPC	18+396	18+388	PC, 1 X 1.0	Widen.	HPC	1 X 1.00	Recons.	HPC	1 X 0.900	As per SP-73, 900 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
9	HPC	19+751	19+736	PC, 1 X 1.0	Retained			Widened due to Toll Plaza from 12.70 m width to 24.80 m = 12.10 m extra			Additional culvert. No change of scope not acceptable as per clause 4.00 of Schedule-B	Committee agreed

10	10	HPC	20+010	19+995	PC, 1 X 0.900	Recons. truction.	HPC	1 X 1.20	Recons. truction.	HPC	1 X 0.900	As per SP-73, 900mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope

Advisory committee agreed and recommended to grant In principle approval as per last column above. Independent Engineer should submit financial implication of change of scop within 15 days time positively.

(Nitin Shrivastava) Concessionaire Representative	(O.P. Sharma) Team Leader M/s Theme Engineering, Ujjain.	(Anil Shrivastava) GM (MDR)MPRDC Bhopal	A. L. Suryavanshi GM, MPRDC Indore	(Rakesh Jain) Divisional Manager Ujjain	(Alok Chaturvedi) GM (MDR.) MPRDC Bhopal	(Arun Paliwal) GM (Finance) MPRDC ,Bhopal	(Narendra Kumar) Chief Engineer MPRDC Bhopal	(A.S. Chendke) Technical Advisor MPRDC Bhopal

Annexure 11: Project Photos

सुवासरा
Suwasara
अजयपुर
Ajaypur
गुराडिया विजय
Guradia Vijay

नगर परिषद सुवासरा जिला मंदसौर

SHREM FINANCIAL PRIVATE LIMITED

Development of Mundi-Punasa-Sulgaon-Sanawad Major District Road in the state of Madhya Pradesh on BOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Mundi-Punasa-Sulgaon-Sanawad Major District Road in the state of Madhya Pradesh on BOT (Toll+Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Mundi-Sanawad	01	February 2021	Technical Due Diligence Report

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Mundi-Sanawad Tollways Limited (herein after referred to as the "Concessionaire") had augmented the existing road from Km.0+000 (Mundi town East Nimar Dist.) to Km.64+400 (Sanawad town West Nimar Dist.) in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 05.12.2011.

Project Highway starts at Mundi town in East Nimar District (Km. 0+000) and terminates at in Sanawad town in West Nimar Dist. Km.64+400) in the state of Madhya Pradesh. Length of existing project road is 64.400 Km and design length of project road is 67.633 Kms. which includes Punasa bypass.

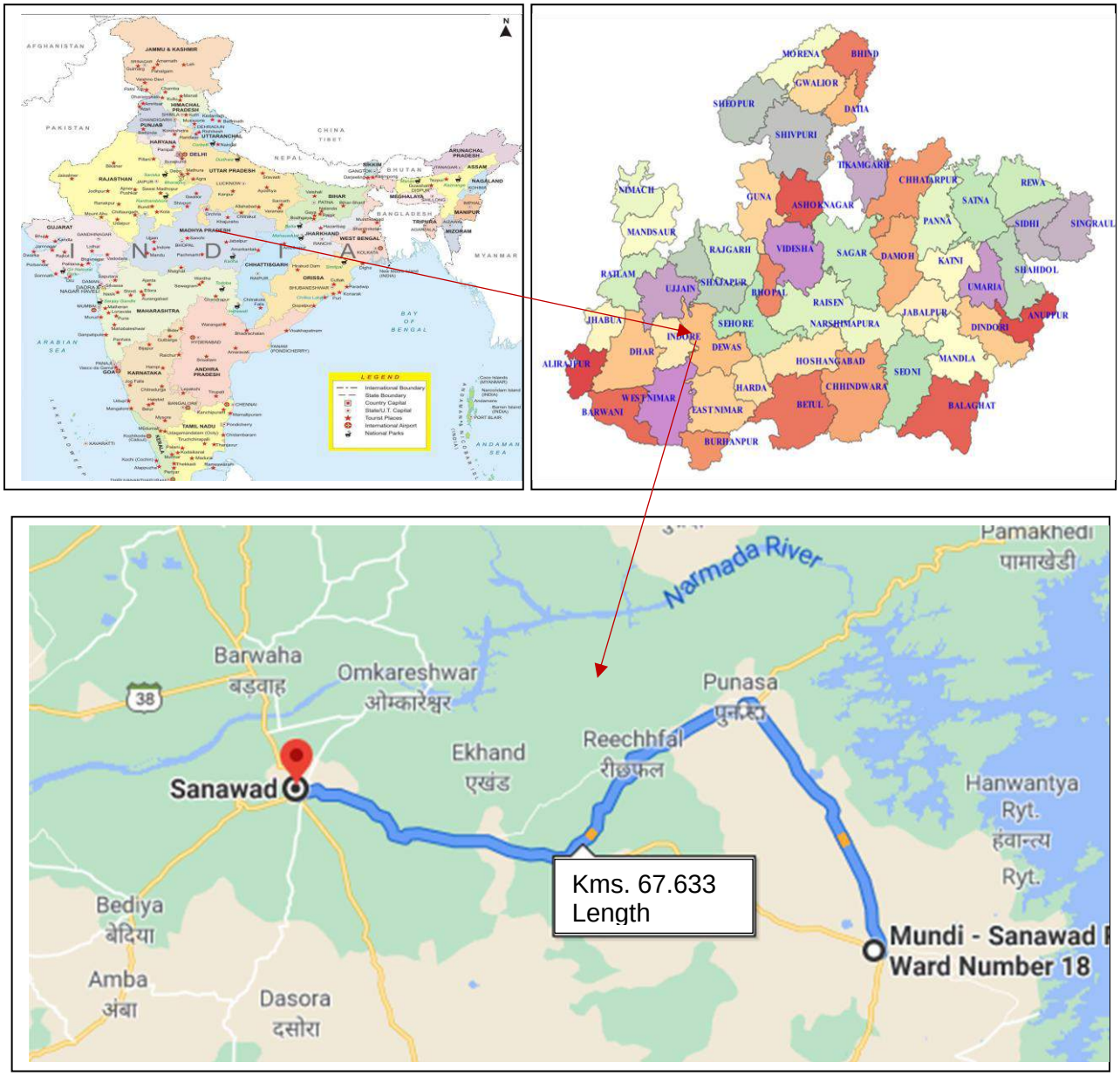

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL MUNDI SANAWAD TOLLWAYS LIMITED vide agreement dated 26.03.2018

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriage way and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection Etc.

1.2 The Project Data:

The details of the project are listed in the following table.

Table 1.1: The Project Data

S. No.	Particulars	Details
1	Name of the project	Development of Mundi-Punasa-Sulgaon-Sanawad (MDR) Road on BOT (Toll + Annuity) Basis
2	Road Type	Major District Road (MDR) in the State of Madhya Pradesh
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Mundi-Sanawad Toll ways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	17.10.2011
7	Date of Agreement	5.12.2011
8	Design length as per Schedule B of CA	67.633 Km.
9	Actual length constructed	67.633 Km.
10	Project lane configuration	2 Lane
11	EPC cost	120 Cr
12	Nature of contract	BOT (Toll + Annuity)
13	Toll collected by	Concessionaire
14	Concession period	15 years from the appointed date
15	Appointed date	19.03.2012
16	Concession end date	18.03.2027
17	Construction period	730 days from the appointed date.
18	Schedule completion date	18.03.2014
19	Date of issuance of provisional certificate (Commercial operation date)	15.05.2013
20	Date of issuance of completion certificate	8.07.2013
21	Annuity amount (every six months)	8.28 Cr
22	Total number of annuities payable	26 Nos.
23	First annuity payment date	15.11.2013

S. No.	Particulars	Details
24	Total number of annuity paid	15 Nos.

1.3 Scope of consultancy services

The scope of work includes providing due diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Carryout review of various contractual documents
- Review of historic/past data on revenue collected
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition assessment by visual inspection of all elements like road, structures, embankment slope, plantation, road furniture, tolling system etc., of the project.
- Visual condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the tolling facility to provide efficient & reliable tolling system. Identify any loop holes in the system and provide any additional improvement required for the tolling system.
- Carryout out road safety audit of existing road and provide improvement suggestions.
- Provide BOQ and cost estimate for routine & periodic maintenance.
- Review any issues with Authority/ Independent Engineer related to design, drawing, works, and others.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of all project asset related insurances and statutory compliances.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Project Length	67.633 Kms.		67.633 Kms.
2	Total Length of 2Lane	65.397 Kms.	-	65.397 Kms.
3	Total Length of 4Lane	2.236 Kms.		2.236 Kms
4	Rigid Pavement 2 Lane	1.09 Kms.		1.09 km.
5	Bypass/Realignment 2 Lane	2.920 Km./1.35 Km.		2.920 Km./1.35 Km.
6	Toll Plaza	1 No.	-	1 No.
7	Bus Bays / Bus Shelters	56 Nos.	-	56 Nos.
8	Truck Lay Byes	Nil		Nil
9	Major Junction	1 Nos.	-	1 Nos.
10	Minor Junctions	20 Nos.	-	20 Nos.
11	ROB	-		-
12	Major Bridges	1 No.	-	1 No.
13	Minor Bridges	23 Nos.	+2,-1 Nos.	24 Nos.
14	Pipe Culverts	89 Nos.	+2,-3 Nos.	88 Nos.
15	Slab/Box Culverts	15 Nos.	1 No.	16 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Sections shown below as per schedule during the construction.

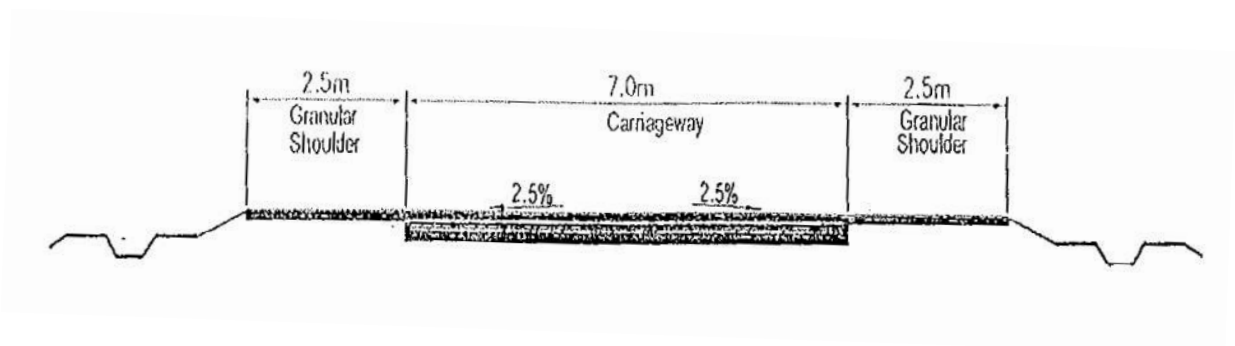

Figure 2.1: (TCS.2.1 of Schedule D)

2-Lane Carriageway with hard Shoulders without service road (Open Country-Plain/rolling terrain)

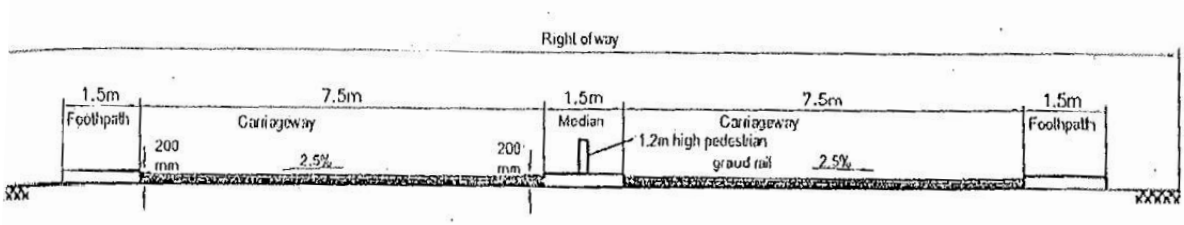

Figure 2.2: (TCS.2.2 of Schedule D)
4-Lane divided Carriageway with footpath (Built-up area)

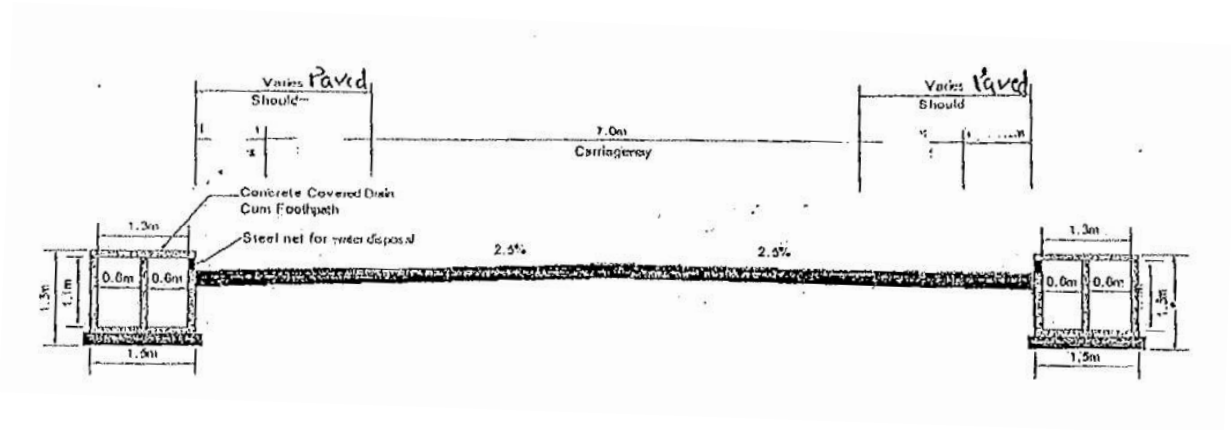

Figure 2.3: (TCS.2.3 of Schedule D)
2-Lane Carriageway with Paved Shoulder (Built-up area)

TCS schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From Chainage (Km)	To Chainage(Km)	Length (Km)	TCS Type
1	0+000	0+875	0.875	TCS 2.2 of Schedule D of CA
2	0+875	2+335	1.460	TCS 2.3 of Schedule D of CA
3	2+335	2+695	0.360	TCS 2.1 of Schedule D of CA
4	2+695	2+945	0.250	TCS 2.3 of Schedule D of CA
5	2+945	9+720	6.775	TCS 2.1 of Schedule D of CA
6	9+720	10+105	0.385	TCS 2.3of Schedule D of CA
7	10+105	20+790	10.685	TCS 2.1 of Schedule D of CA
8	20+790	20+995	0.205	TCS 2.3 of Schedule D of CA
9	20+995	28+250	7.255	TCS 2.1 of Schedule D of CA
10	28+250	28+465	0.215	TCS 2.3 of Schedule D of CA
11	28+465	30+960	2.495	TCS 2.1 of Schedule D of CA
12	30+960	31+290	0.330	TCS 2.3of Schedule D of CA
13	31+290	33+980	2.690	TCS 2.1 of Schedule D of CA
14	33+980	34+225	0.245	TCS 2.3 of Schedule D of CA
15	34+225	34+530	0.305	TCS 2.1 of Schedule D of CA
16	34+530	34+790	0.260	TCS 2.3 of Schedule D of CA
17	34+790	45+925	11.135	TCS 2.1 of Schedule D of CA
18	45+925	46+125	0.200	TCS 2.3 of Schedule D of CA

S. No.	From Chainage (Km)	To Chainage(Km)	Length (Km)	TCS Type
19	46+125	54+065	7.940	TCS 2.1 of Schedule D of CA
20	54+065	54+800	0.735	TCS 2.2 of Schedule D of CA
21	54+800	63+150	8.350	TCS 2.1 of Schedule D of CA
22	63+150	63+776	0.626	TCS 2.2 of Schedule D of CA
23	63+776	67+633	3.857	TCS 2.1 of Schedule D of CA

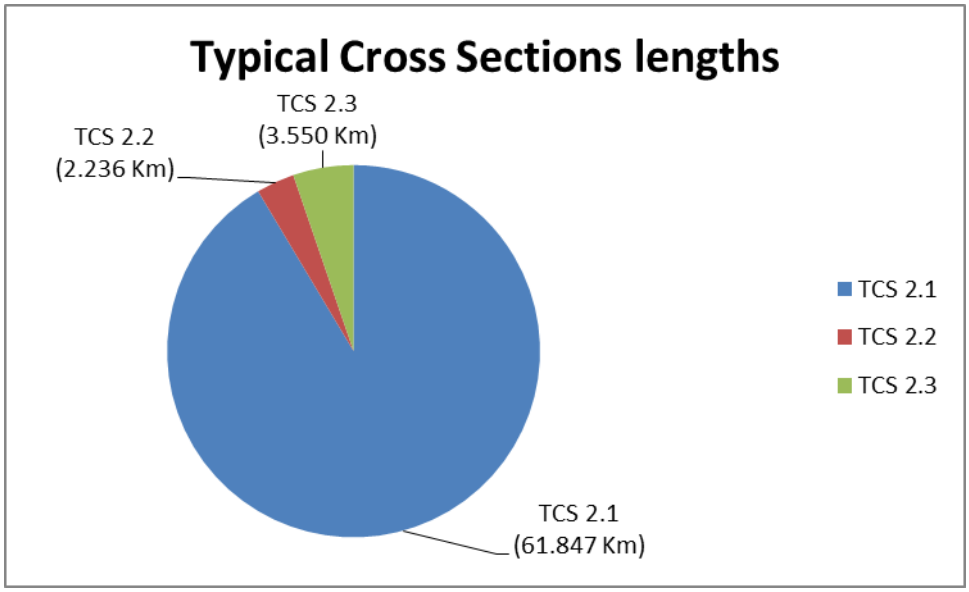

Figure 2.4: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage:

- To facilitate quick disposal of storm water from the Carriage way and avoid accumulation of drainage from road side community on the Carriage way, RCC drains are constructed along the main carriage way on both flanks as specified in Schedule B of the Concession Agreement in strict adherence to the Standard Specifications set forth in Schedule D of the Concession Agreement
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

2.4 Service Roads:

No service road is proposed along entire stretch of the Project Road.

2.5 Bypass/Realignment:

One Bypass in Punasa and Seven Realignments are provided as per provisions of Schedule B of the Concession Agreement

Table 2.3: Summary of Bypass/Realignment

S. No.	Chainage (Km.)		Length (Kms.)
	From	To	
Punasa Bypass			
1	21+550	24+470	2.920
Realignments			
1	11+775	11+930	0.155
2	38+380	38+630	0.250
3	41+530	41+700	0.170
4	42+885	43+100	0.215
5	47+530	47+720	0.190
6	59+580	59+800	0.220
7	63+000	63+150	0.150

2.6 Intersections:

As per provisions of Schedule B of the Concession Agreement, 1 Major Junction and 20 Minor Junctions are provided. Details are given below.

Table 2.4: Summary of Junctions

S. No.	Chainage(Km)	Type Junction	Location
Major			
1	63+776	T	LHS-Khandwa RHS-Indore
Minor			
1	0+000	T	Beer-Khandwa
2	1+785	T	Bid
3	7+455	T	Jamkota
4	9+928	T	Utavad
5	17+245	T	Chandel
6	18+225	T	Ajania
7	19+700	T	Strailya
8	24+943	T	Navalvil
9	30+960	T	Nadiyake
10	32+010	Y	Hantiya
11	34+132	T	Nana Kheda
12	38+770	+	LHS-Atur RHS-Kelva
13	42+600	T	Moondi
14	45+380	T	Boradi
15	47+900	T	Gol
16	54+360	T	Mathela
17	55+800	T	Sulgaon
18	57+245	T	Gosti

S. No.	Chainage(Km)	Type Junction	Location
19	58+525	+	Khangwad-Ghosata
20	62+500	T	Omkareshwar

2.7 Grade Separated Structures and underpasses:

Grade Separated structures and underpasses are not proposed along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.8 Road Over Bridge(ROB):

ROB's are not proposed in the project road. The existing railway crossing at Ch: 64+000 in Sanawad is proposed to be retained as per provisions of Schedule B of the Concession Agreement.

2.9 Summary of the Carriageway and pavement Details:

Table 2.5: Summary of Carriageway and pavement Details

S. No.	Description	Flexible (kms.)	Rigid (kms.)	TCS Type
1	Two lane Carriageway with hard shoulders.	61.847	---	TCS-2.1
2	Four lane Carriageway with footpath	2.236	---	TCS-2.2
3	Two lane Carriageway with Paved shoulder	2.460	1.090	TCS-2.3
4	Total length of the project	67.633		---
TYPE OF ALIGNMENT				
5	New alignment/bypass	2.92	---	---
6	Realignment	1.350	---	---
7	Strengthening	---	---	---
8	Reconstruction	63.363	---	---
9	Total length of the project	67.633	---	---

2.10 Summaryof Structures:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.6: Summary of Structures:

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Widening + Repair and strength	-	17	15	02
2	Retained	01	02	18	05
3	Reconstruction	-	02	47	08
4	New Construction	-		08	
5	Existing Causeway is reconstructed as culvert			01	

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
6	Existing Causeway is reconstructed as minor bridge		02		
	Total	**01**	**23**	**89**	**15**

~~Details of the condition survey carried out on structures are provided at **ANNEXURE 2 & 3**~~

2.11 Toll Plazas

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Km. 59+400. Salient features of Toll Plaza are provided below.

- Each side comprises of 1 Normal Lanes, 1 extra wide lane and 1 bike lane.
- The lane width in normal lanes is 3.20m.
- The lane width in extra wide lane is 4.5m
- The width of islands provided is 1.8m.
- Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

2.12 Bus shelters and truck lay byes

As per the provisions of Schedule C of the CA bus shelters are provided at 56 locations. Details provided in table below.

Table 2.7: Bus shelters details

S. No.	Chainage (Km.)	Side	Location	S. No	Chainage(Km)	Side	Location
1	0+000	LHS	Mundi	29	30+900	LHS	Nadiyake
2	0+000	RHS	Mundi	30	31+000	RHS	Nadiyake
3	0+500	LHS	Devala	31	31+950	LHS	Hantiya
4	0+600	RHS	Devala	32	32+020	RHS	Hantiya
5	1+000	LHS	To Bid	33	34+100	LHS	Built up Area
6	1+800	RHS	To Bid	34	34+200	RHS	Built up Area
7	2+600	LHS	Andakheda	35	34+600	LHS	Gurjarkh
8	2+700	RHS	Andakheda	36	34+700	RHS	Gurjarkh
9	6+500	LHS	Punbas	37	38+600	LHS	Mohana
10	6+600	RHS	Punbas	38	38+700	RHS	Mohana
11	7+400	LHS	Jamkota	39	42+550	LHS	Gol
12	7+500	RHS	Jamkota	40	42+650	RHS	Gol
13	9+900	LHS	Bangarda	41	45+300	LHS	Boradi
14	10+000	RHS	Bangarda	42	45+400	RHS	Boradi
15	10+960	LHS	Teliya	43	45+900	LHS	Bakharga
16	11+060	RHS	Teliya	44	46+000	RHS	Bakharga
17	17+200	LHS	Aniya	45	54+300	LHS	Sagaon
18	17+300	RHS	Aniya	46	54+400	RHS	Sagaon
19	18+100	LHS	Ajaniya	47	55+700	LHS	Sulgaon

S. No.	Chainage (Km.)	Side	Location
20	18+300	RHS	Ajaniya
21	19+650	LHS	Sarliya
22	19+750	RHS	Sarliya
23	20+900	LHS	Udaypur
24	21+000	RHS	Udaypur
25	24+900	LHS	Navalvil
26	25+000	RHS	Navalvil
27	28+300	LHS	Bikri
28	28+400	RHS	Bikri

S. No	Chainage(Km)	Side	Location
48	55+800	RHS	Sulgaon
49	57+200	LHS	Gosti
50	57+300	RHS	Gosti
51	58+490	LHS	Khangwad
52	58+590	RHS	Khangwad
53	62+400	LHS	Omkareshwar
54	62+500	RHS	Omkareshwar
55	63+550	LHS	Sanawad
56	63+550	RHS	Sanawad

Km. 0+150 – Median Rail

Km. 18+500 – Bus Bay

Figure 2.5: Median Rail & Bus Bay Photos

2.13 Other Project Facilities Provided as per Schedule C of CA:

- Roadside furniture: Sign boards, kilometer stones, road marking, Overhead sign boards and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained
- Tree plantation: Tree plantation is provided on both sides, for the full length of project corridor and being maintained.
- Medical Aid Post: Provided at toll plaza location and in operational
- Highway Lighting: Highway lighting is provided at Toll Plaza locations and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General:

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory:

Inventory of the project road was carried out physically and the same is summarized in the following table. Couple of representative photographs, are given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain & Rolling and at few locations Hilly
2	Land Use	Built Up, Agriculture
3	Two lane length	65.397 Km
4	Four lane length	2.236 Km
5	Earthen shoulder	1.0 m to 1.5 m width on site
6	Bypass/Realignment	2.920 Km./1.350 Km.
7	Junctions	21 Nos (Majo1r-1Nos., Minor -20Nos.)
8	Toll Plaza	Km.59+400
9	Sign boards	Sign boards are provided as per requirement
10	Road Markings	Lane markings are provided as per requirement
11	Bus Bays /shelters	56 Nos.
12	Street Lighting	Highway lighting provided as per requirement
13	Avenue plantation	Provided

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Road Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of

pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition of the Project road in the above manner, it is observed that the pavement condition of project road is good. The field measurements of the Pavement Condition survey is tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1.** The summary of Pavement condition is given below.

Table 3.3: Pavement condition summary

From (km.)	To (km.)	Length (kms)	Condition
0+000	67+633	67.633 Km.	Good

Km. 1+750

Km. 318+500

Km. 50+200

Figure 3.1: Representative photos for pavement condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Condition of the Sstructures:

Inspection of existing structures on the Project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The details of the Structures along the project highway are listed below

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	1 No
2	Minor Bridge	24 Nos.
3	Pipe culverts	88 Nos.
4	Slab/Box Culverts	16 Nos.

There is one major bridge on the project road. The superstructure is of RCC T beam and slab, resting on RCC wall type piers and abutments supported by Open/Pile foundations. The Super structure of minor bridges is precast RCC T-Beam, cast in situ deck slab &RCC solid slab and the substructures are of PCC conventional wall type, supported on open foundations and CR Masonry/RCC wall type with open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the Culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

There is one Major bridge in the project stretch. The total length of the bridge is 80.0m with 4 spans of 20.0m. The superstructure is of RCC, T beam and deck slab. The substructure is of RCC wall type piers and abutments resting on open/pile foundations. Elastomeric/Neoprene bearings are used. Expansion joints are of strip seal type and RCC crash barrier has been provided.

Table 4.2: List of Major Bridge

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)
1	41+698	4 x 20.0m	80.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

4.4 Description of Minor Bridges

The type of superstructure for 24 minor bridges is RCC solid slab and precast RCC, T-Beam, cast in situ deck slab (5-girder system) and RCC Box cell structure. The substructures are of PCC conventional wall type supported with open foundations and CR Masonry wall type and RCC wall type with open foundations.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)	Description
1	Km.2+320	38.8m.	26.4	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments It has Abutment Wall type. Other features are bituminous wearing coat, and RCC crash barrier.
2	Km.3+217	1X10.2m.	10.2	The Minor Bridge has precast RCC T-Beam superstructure supported on RCC wall type piers and abutments. It has Abutment Wall type. Other features are bituminous wearing coat and RCC crash barrier.
3	Km.5+376	2X6.9m.	13.8	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. It has Abutment Wall type. Other features are bituminous wearing coat and RCC crash barrier.
4	Km.7+073	1x8.9m.	8.9	The Minor Bridge has RCC solid slab superstructure supported on PCC wall type abutments. Other features are bituminous wearing coat, and RCC crash barrier.
5	Km.14+461	1x5.7m.	5.7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type. Other features are bituminous wearing coat, and RCC crash barrier.
6	Km.15+987	1X10.4m.	10.4	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
7	Km.25+459	1x8.9m	8.9	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
8	27+833	1x7.0	7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers. Other features are bituminous wearing coat and RCC crash barrier.
9	33+179	3x11.1	33.3	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are bituminous wearing coat and RCC crash barrier.
10	34+012	4x14.8	59.2	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are bituminous wearing coat and RCC crash barrier.
11	36+540	1x8.4	8.4	The Minor Bridge has RCC solid slab superstructure

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)	Description
				supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
12	38+980	1x11.3	11.3	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
13	40+171	1x7.0	7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
14	42+285	4x2.2+2x3.0	14.8	The Minor Bridge is of RCC Box type with six vents. Other features are bituminous wearing coat and RCC crash barrier.
15	45+334	2x9.6	19.2	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
16	45+466	1x8.2	8.2	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
17	47+786	4x2.2+2x3.0	14.8	The Minor Bridge is of RCC Box type with six vents. Other features are bituminous wearing coat and RCC crash barrier.
18	53+769	2x5.0	10	The Minor Bridge is of RCC Box type with two vents. Other features are bituminous wearing coat and RCC crash barrier.
19	54+496	1x9.7	9.7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
20	54+792	2X7.0	14	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
21	57+140	1x 6.8	6.8	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are bituminous wearing coat and RCC crash barrier.
22	59+360	2X 6.9	13.8	The Minor Bridge has RCC solid slab superstructure supported on masonry wall type piers and abutments. Other features bituminous wearing coat and RCC crash barrier.
23	59+336	1x8.0	8	The Minor Bridge is RCC Box type superstructure with single vent. Other features are bituminous wearing coat and RCC crash barrier.

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)	Description
24	62+732	3x 6.0	18	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are bituminous wearing coat and RCC crash barrier.

Km. 33+179 **Km. 47+786**

Figure 4.1: Representative photos for minor bridges

4.5 General Description of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. General Description of the Slab/Box Culverts

The details of the culverts along the project highway are as given below.

Table 4.4: List of Slab Culverts

S. No.	Chainage @Km.	Span (m)	Vent Size (m)
1	2+721	1 x 5.0	2.30
2	9+348	1 x 2.1	1.80
3	9+584	1 x 1.5	1.50
4	10+343	1 x 3.4	2.20
5	10+671	1 x 3.0	2.30
6	14+760	1 x 3.4	3.00
7	19+519	1 x 3.4	3.00
8	29+200	1 x 4.1	2.40
9	37+804	1 x 4.4	1.50
10	50+620	1 x 6.4	5.50
11	56+176	1 x 1.2	1.60

S. No.	Chainage @Km.	Span (m)	Vent Size (m)
12	57+690	1 x 3.2	2.10
13	60+611	1 x 3.4	3.00
14	61+286	1 x 3.4	3.00
15	61+468	1 x 3.4	3.00
16	61+898	1 x 3.4	3.00

Km.19+519 **Km. 37+804**

Figure 4.2: Representative photos of Slab Culverts

4.5.2. General Description of the Pipe Culverts

The details of the culverts along the project highway are as given below.

Table 4.5 List of pipe Culverts

S. No.	Chainage (km)	Size	S. No.	Chainage (km)	Size
1	1+277	2 x 1.2	45	31+84	1 x 1.2
2	1+405	1 x 10.2	46	31+996	2 x 0.9
3	1+993	1 x 1.2	47	32+279	1 x 1.2
4	2+342	1 x 1.2	48	33+800	1 x 1.2
5	3+215	1 x 1.0	49	34+950	1 x 0.9
6	4+762	1 x 1.2	50	35+379	1 x 0.9
7	5+057	2 x 1.2	51	35+528	2 x 0.9
8	5+902	1 x 1.2	52	35+928	1 x 0.9
9	6+410	1 x 1.2	53	36+985	5 x 1.2
10	7+750	1 x 0.9	54	37+120	1 x 0.9
11	8+034	2 x 0.9	55	37+460	1 x 0.6
12	8+556	2 x 0.9	56	37+600	2 x 1.2
13	11+667	1 x 1.2	57	37+990	1 x 0.6
14	13+010	1 x 1.2	58	38+480	1 x 1.2
15	13+617	1 x 1.2	59	39+040	1 x 1.2
16	15+356	1 x 1.2	60	39+400	1 x 0.9
17	15+560	1 x 1.2	61	40+700	1 x 1.2
18	16+300	1 x 1.2	62	40+933	4 x 0.9
19	15+560	1 x 1.2	63	41+053	1 x 1.2

S. No.	Chainage (km)	Size
20	17+780	2 x 0.9
21	17+950	1 x 0.9
22	18+050	1 x 1.0
23	18+469	2 x 1.2
24	18+720	1 x 1.2
25	18+950	1 x 1.2
26	21+400	2 x 1.2
27	21+950	2 x 1.2
28	22+600	3 x 1.2
29	23+300	1 x 1.2
30	23+700	1 x 1.2
31	24+765	1 x 1.2
32	24+765	1 x 1.2
33	24+950	1 x 0.9
34	26+500	4 x 1.0
35	26+900	1 x 1.2
36	28+452	1 x 1.2
37	28+994	1 x 1.2
38	29+392	1 x 0.9
39	29+983	1 x 1.0
40	29+983	1 x 0.9
41	30+339	1 x 0.9
42	30+803	2 x 0.9
43	31+440	1 x 0.9
44	31+600	2 x 1.2

S. No.	Chainage (km)	Size
64	41+455	1 x 1.2
65	42+800	4 x 1.2
66	43+284	2 x 1.2
67	45+530	1 x 0.9
68	45+726	1 x 0.9
69	46+300	4 x 0.9
70	47+108	1 x 0.9
71	47+190	1 x 0.9
72	47+235	1 x 1.2
73	48+687	1 x 1.2
74	49+095	1 x 1.2
75	49+095	1 x 1.2
76	50+985	3 x 1.2
77	54+294	1 x 1.0
78	54+571	1 x 1.2
79	55+460	1 x 1.2
80	55+600	1 x 0.9
81	57+398	1 x 1.2
82	58+240	2 x 1.2
83	58+760	1 x 1.2
84	59+600	1 x 1.2
85	59+800	1 x 1.2
86	60+920	1 x 1.2
87	61+900	2 x 0.9
88	62+638	1 x 1.2

Km. 17+950

Figure 4.3: Representative photos of Pipe Culverts

Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon, for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Pavement design validation

S. No.	Description/ Pavement layer	Design/Adopted Parameters	
1	Sub Grade CBR (%)	10%	
2	Design Life (Years)	15 years	
3	Design Traffic* (MSA)	5 MSA Adopted	8 years for BT
		10 MSA Adopted	15 years For Granular
4	Surface course (SDBC)	25 mm	
5	Binder course (DBM)	50 mm	
6	Base course (WMM)	250 mm	
7	Sub Base course (GSB)	200 mm	

5.3 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Real Time Traffic from COD and Projected Traffic from Current years with 5% growth for CMSA

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA*	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2014	690	270	12	73	30	385	0.37	0.37	2	Actual
2015	577	259	9	32	10	310	0.30	0.67	3	Actual
2016	609	254	8	27	9	298	0.29	0.95	4	Actual
2017	586	248	8	28	12	297	0.28	1.24	5	Actual
2018	617	248	6	30	19	303	0.29	1.53	6	Actual
2019	649	242	5	35	36	318	0.30	1.83	7	Actual
2020	897	297	8	52	61	418	0.40	2.23	8	Actual
2021	942	312	8	55	64	439	0.42	2.65	9	Projected
2022	989	327	8	58	68	461	0.44	3.09	10	Projected
2023	1038	344	9	61	71	484	0.46	3.56	11	Projected
2024	1090	361	9	64	75	508	0.49	4.04	12	Projected
2025	1145	379	10	67	78	534	0.51	4.56	13	Projected
2026	1202	398	10	70	82	560	0.54	5.09	14	Projected
2027	1262	418	11	74	86	589	0.56	5.66	15	Projected

*Cumulative MSA

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 2.23 MSA, 5.66 MSA respectively.

Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

Details of the Pavement design for rigid pavement are as follows:

Table 5.3: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	280
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	150
Separation membrane b/t PQC & DLC – (micron)	125
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	500

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA & 10 MSA for Bituminous layer (8 years) and for base and sub base (15 years) respectively (up to 2027), whereas the actual cumulative traffic is 2 MSA & 5.08 MSA in the year of 2020 and 2027 respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

5.4.1. Maintenance / Overlay Schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC as per specifications. The maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – on or before 2021. As the road condition is good planned for 2021.
Periodic Maintenance for Rigid Pavement – re-texturing shall be done at least once in 10 years from construction (as per IRC-58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals. Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No	Item Description		Status	Condition
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Cautionary sign boards	Available as per site requirement	Good
		Information boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Fair

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly
- Speed mitigation measures shall be provided at junction to reduce the speed, and adequate visibility shall be maintained at junctions in part of routine maintenance.
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

Km. 0+000

Km. 14+000

Km. 16+180

Km. 50+200

Km. 30+100 – Road Marking

Km. 59+400 Crash Barrier

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are done for road users along the project road and the same is found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plazas on the project road at Km. 59+400. Each side comprises of 1 Normal Lanes, 1 extra wide lane and bike lane. Only one lane in each direction is operational. The lane width in normal lanes was 3.20m. The width of islands provided is 1.8m. The single canopy is provided to cover the toll lanes. Toll plaza building is G+1 building which houses control room, UPS and Pantry. Other rooms are vacant and used by Toll collectors.

Toll Plaza

Toll Building

Figure 7.1: 59+400 Toll Plaza

7.2 Tolling Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment at toll plaza and Control Room

S. No.	Description	No.
	Lane Equipment	
1	TLC	4
2	Monitor	4
3	Thermal Printer	4
4	Keyboard	4
5	CCTV Booth	4
6	Intercom-s	4
7	IC Camera	4
8	Audit camera	4
9	Barrier	4
10	UFD	4
11	Traffic light	4
12	OHLS	4
13	Sick sensor	2
14	Booth Chair	2
15	Fastag Reader	4
16	PTZ	2

S. No.	Description	No.
17	DG	1
18	Canopy Light	6
19	street Light	4
20	High mast Light	2
21	Lane brench	2
	Control Room and other Rooms	
1	Monitor	3
2	Server with Box	1
3	CPU	2
4	Keyboard	3
5	Scanner	1
6	Printer	1
7	LCD with Remote	1
8	Mouse	3
9	Intercom-Machine	1
10	NVR	1
11	DVR MPRDC	1
12	4 Port Networking switch	1
13	16 Port Networking switch	1
14	Building Camera	3
15	Farwell	1
16	Hard disk	1
17	DVD Writer	1
18	Jio Dongal	1
19	Internet ROUTER	1
20	Hight sensor	8
21	CPU	2
22	Server	1
23	IC Camera	3

7.3 Vehicles

The list of vehicles, which were observed at site for operation of highway and toll plaza, are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Make & Model	No.
1	Patrol Vehicle	TVS Bike	1
2	Ambulance	Mahindra Genio	1

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Annual Average Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details as per schedule N of CA

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2016	222996	93032	2934	9726	3471	332159
2017	213976	90691	2853	10265	4519	322304
2018	225043	90608	2335	10778	6796	335560
2019	236726	88304	1723	12857	13178	352788
2020	328314	108645	2787	19174	22470	481390
AACGR (%)						10.68%

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8.2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	199283	44824	82583	2556	16522	20584	366352
Toll Revenue collection in Rs.	7971320	3585930	7660020	500420	3891310	9683095	33292095

The figures shown in Table 8.1 are Real time traffic data on project road for the past five years and the growth rate is calculated to be 10.68%. It is pertinent to note that the figures given in table 8.1 are inclusive of exempted /non-tollable traffic.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and

projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8.2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	669	226	7	45	56	335	669	339	21	136	254	750	Actual
2021	702	238	7	48	59	352	702	356	22	143	266	787	Projected
2022	737	249	8	50	62	369	737	374	23	150	280	827	Projected
2023	774	262	8	52	65	388	774	393	24	157	294	868	Projected
2024	813	275	9	55	69	407	813	413	26	165	308	912	Projected
2025	854	289	9	58	72	427	854	433	27	173	324	957	Projected
2026	896	303	9	61	76	449	896	455	28	182	340	1005	Projected
2027	941	318	10	64	79	471	941	478	30	191	357	1055	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in table 8-4

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1
Location	Km. 59+400
4 lane length in km	0
2 lane length in km	67.63
Agreement Date	05-12-2011
Appointed Date	19.03.2012
Concession period	15
Commercial operation date	15.05.2013
Concession End Date	18-Mar-27
Traffic study year	2020
Vehicle Type	**AADT**
Car/Jeep/Van	669
2-axle Bus	226
LCV/LGV	7

Particular	Toll plaza 1
2A-Truck	45
MAV (2A-6A)	56
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5 Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 @ Km.59+400	Remarks
2019-20	332.921	Actual
2020-21	363.902	Projected
2021-22	404.118	Projected
2022-23	432.687	Projected
2023-24	469.212	Projected
2024-25	517.273	Projected
2025-26	559.554	Projected
2026-27	573.368	352 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project Highways by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection**: Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection**: Detailed Inspections often require some measuring instruments, done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection**: Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required occasionally. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project Highway and Project Facilities.

1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2 Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3 Carrying out preventive and periodic maintenance of the Project Highway;
4 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6 Functioning of the lighting system;
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Parking Lay bays
13 Pickup Bus stops / Bus Bays
14 protection of the environment and provision of equipment and materials therefor;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
16 complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

One lane in each direction is currently operational and the extra wide lane is opened for wide vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project Highway

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1 : Schedule and status of for Periodic Maintenance

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance-Phase-1	2021	25km Planned to execute
2	1st Periodic Maintenance-Phase-2	2022	43km Planned to execute
3	2nd Periodic Maintenance	2027	68Km Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of October 2020. As per Schedule K of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

9.6.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in October 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.238	0.181		0.47	0.89
2021	0.245	0.186	3.15	0.48	4.06
2022	0.253	0.192	7.36	0.50	8.31
2023	0.260	0.198		0.51	0.97
2024	0.268	0.203		0.53	1.00
2025	0.276	0.210		0.55	1.03
2026	0.284	0.216		0.56	1.06
2027	0.283	0.222	11.73	0.58	12.81
Total	**2.11**	**1.61**	**22.24**	**4.18**	**30.14**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2 of CA)

Article 2 provides the scope of work which includes the following.

- construction of the Project Highway on the Site set forth in Schedule-A of CA and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA
- operation and maintenance of the Project Highway in accordance with the provisions of Concession Agreement (CA)
- performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award (LOA)

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. A copy of LOA is enclosed at **ANNEXURE-6.**

10.3 Conditions precedent (Article 4 of CA)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1 of CA)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project Highway upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3 of CA)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9 of CA)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3 of CA)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B of CA, C and D of CA and after determining successful completion of tests, the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. A copy of PCC attached at Annexure -7

10.8 Completion Certificate (Clause 14.4 of CA)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. A copy of CC enclosed at Annexure -8

10.9 Commercial Operation Date (COD) (clause 15.1 of CA)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16 of CA)

List of Change of scope proposals initiating during construction period and consented by the MPRDC are enclosed at **Annexure 10**.

10.11 O&M Obligations of the Concessionaire (Clause 17.1 of CA)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project Highway
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any un authorized use of the Project Highway.

- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2 of CA)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K of CA (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3 of CA)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Lanning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4 of CA)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.

- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8 of CA)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.

- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1 of CA)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5 of CA)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1 of CA)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y of CA the sum of Rs 8.28 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y of CA, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 10.1 Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1st Annuity	24-Dec-13
2	2nd Annuity	27-May-14
3	3rd Annuity	21-Nov-14
4	4th Annuity	22-May-15
5	5th Annuity	18-Nov-15
6	6th Annuity	18-May-16
7	7th Annuity	28-Nov-16
8	8th Annuity	19-May-17
9	9th Annuity	8-Dec-17
10	10th Annuity	29-May-18
11	11th Annuity	16-Nov-18
12	12th Annuity	28-May-19
13	13th Annuity	20-Nov-19
14	14th Annuity	22-May-20
15	15th Annuity	17-Nov-20

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 General

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall affect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001986	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Electronic Equipment Insurance Policy	Oriental Insurance Company Limited	171200/44/2021/41/001	8.09.2020	7.09.2021	IT equipment, Electronic Equipment
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	311420338774890000 0	19.05.2020	18.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 12. CONCLUSION

12.1 General

Based on the above information over all condition of the Project is provided below.

12.2 Pavement Condition

Pavement condition is good. Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed is 10.68%, where as 5% growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Km. 59+400 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in good condition. Medical Aid posts found in functional condition. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in good condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards is good Other road appurtenances like metal beam crash barriers and Kerb are intact.

12.7 Maintenance

A dedicated team is appointed for routine maintenance works and working effectively. Major maintenance (MM) /Periodic maintenance was carried out recently and next MM is scheduled in 2021

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
0+000	1+000								G		E/P	F	F	LD	F
1+000	2+000								G		E/P	F	F	LD	F
2+000	3+000								G		E/P & E	F	F	LD	F
3+000	4+000								G		E	F	F	ULD	F
4+000	5+000								G		E	F	F	ULD	F
5+000	6+000								G		E	F	F	ULD	F
6+000	7+000	1	5						F		E	F	F	ULD	F
7+000	8+000	1	4						F		E	F	F	ULD	F
8+000	9+000								G		E	F	F	ULD	F
9+000	10+000								G		E/P & E	F	F	LD	F
10+000	11+000								G		E/P & E	F	F	LD	F
11+000	12+000								G		E	F	F	ULD	F
12+000	13+000								G		E	F	F	ULD	F
13+000	14+000								G		E	F	F	ULD	F
14+000	15+000								G		E	F	F	ULD	F
15+000	16+000								G		E	F	F	ULD	F
16+000	17+000								G		E	F	F	ULD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
17+000	18+000								G		E	F	F	ULD	F
18+000	19+000								G		E	F	F	ULD	F
19+000	20+000								G		E	F	F	ULD	F
20+000	21+000								G		E/P & E	F	F	LD	F
21+000	22+000								G		E	F	F	ULD	F
22+000	23+000		5	3					F		E	F	F	ULD	F
23+000	24+000								G		E	F	F	ULD	F
24+000	25+000								G		E	F	F	ULD	F
25+000	26+000								G		E	F	F	ULD	F
26+000	27+000								G		E	F	F	ULD	F
27+000	28+000								G		E	F	F	ULD	F
28+000	29+000								G		E/P & E	F	F	LD	F
29+000	30+000								G		E	F	F	ULD	F
30+000	31+000								G		E/P & E	F	F	LD	F
31+000	32+000								G		E/P & E	F	F	LD	F
32+000	33+000								G		E	F	F	ULD	F
33+000	34+000								G		E/P & E	F	F	LD	F
34+000	35+000								G		E/P & E	F	F	LD	F
35+000	36+000								G		E	F	F	ULD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
36+000	37+000								G		E	F	F	ULD	F
37+000	38+000								G		E	F	F	ULD	F
38+000	39+000								G		E	F	F	ULD	F
39+000	40+000								G		E	F	F	ULD	F
40+000	41+000								G		E	F	F	ULD	F
41+000	42+000								G		E	F	F	ULD	F
42+000	43+000								G		E	F	F	ULD	F
43+000	44+000								G		E	F	F	ULD	F
44+000	45+000								G		E	F	F	ULD	F
45+000	46+000								G		E/P & E	F	F	LD	F
46+000	47+000								G		E/P & E	F	F	LD	F
47+000	48+000								G		E	F	F	ULD	F
48+000	49+000								G		E	F	F	ULD	F
49+000	50+000								G		E	F	F	ULD	F
50+000	51+000								G		E	F	F	ULD	F
51+000	52+000								G		E	F	F	ULD	F
52+000	53+000								G		E	F	F	ULD	F
53+000	54+000								G		E	F	F	ULD	F
54+000	55+000								G		E	F	F	ULD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain	
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***
55+000	56+000								G		E	F	F	ULD	F
56+000	57+000								G		E	F	F	ULD	F
57+000	58+000								G		E	F	F	ULD	F
58+000	59+000								G		E	F	F	ULD	F
59+000	60+000								G		E	F	F	ULD	F
60+000	61+000								G		E	F	F	ULD	F
61+000	62+000								G		E	F	F	ULD	F
62+000	63+000								G		E	F	F	ULD	F
63+000	64+000								G		E	F	F	ULD	F
64+000	65+000								G		E	F	F	ULD	F
65+000	66+000								G		E	F	F	ULD	F
66+000	67+000								G		E	F	F	LD	F
67+000	67+633								G		E	F	F	LD	F

Annexure 2: Condition of Structures

S No	Type of Structure	Chainage (Km.)	Substructure	Superstructure	Expansion Joint	Approach slabs	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	Minor Bridge	2+320	Good	Good	Good	Good	Good	-	Fair	-	-
2	Minor Bridge	3+217	Good	Good	Good	Good	Good	-	Fair	-	-
3	Minor Bridge	5+376	Good	Good	Good	Good	Good	-	Good	-	-
4	Minor Bridge	7+073	Good	Good	Good	Good	Good	-	Good	-	-
5	Minor Bridge	14+461	Good	Good	Good	Good	Good	-	Fair	-	-
6	Minor Bridge	15+987	Good	Good	Good	Good	Good	-	Good	-	-
7	Minor Bridge	25+459	Good	Good	Fair	Good	Fair	-	Fair	-	-
8	Minor Bridge	27+833	Good	Good	Fair	Good	Fair	-	Fair	-	-
9	Minor Bridge	33+179	Good	Good	Good	Good	Good	-	Fair	-	-
10	Minor Bridge	34+012	Good	Good	Good	Fair	Fair	-	Good	-	-
11	Minor Bridge	36+540	Good	Good	Fair	Good	Fair	-	Fair	-	-
12	Minor Bridge	38+980	Good	Good	Good	Good	Good	-	Good	-	-
13	Minor Bridge	40+171	Good	Good	Fair	Good	Fair	-	Fair	-	-
14	Major Bridge	41+698	Good	Good	Fair	Good	Fair	-	Fair	-	-
15	Minor Bridge	42+285	Good	Good	Fair	Good	Fair	-	Fair	-	-
16	Minor Bridge	45+334	Good	Good	Fair	Good	Fair	-	Fair	-	-
17	Minor Bridge	45+446	Good	Good	Good	Good	Good	-	Good	-	-
18	Minor Bridge	47+786	Good	Good	Fair	Good	Fair	-	Fair	-	-
19	Minor Bridge	53+769	Good	Good	Good	Fair	Fair	-	Good	-	-
20	Minor Bridge	54+496	Good	Good	Fair	Good	Fair	-	Fair	-	-
21	Minor Bridge	54+792	Good	Good	Good	Fair	Fair	-	Good	-	-
22	Minor Bridge	57+140	Good	Good	Good	Good	Good	-	Good	-	-
23	Minor Bridge	59+336	Good	Good	Fair	Good	Fair	-	Fair	-	-
24	Minor Bridge	59+360	Good	Good	Good	Good	Good	-	Good	-	-
25	Minor Bridge	62+732	Good	Good	Good	Fair	Fair	-	Good	-	-

Annexure 3: Condition of Box/Slab/Hume Pipe Culvert

S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet wall
1	2+721	Good	Fair	Fair	Fair	-	Fair
2	9+348	Good	Good	Good	Good	-	Good
3	9+584	Good	Good	Good	Good	-	Good
4	10+343	Good	Good	Fair	Fair	-	Good
5	10+671	Good	Good	Good	Fair	-	Good
6	14+760	Good	Good	Good	Fair	-	Good
7	19+519	Good	Good	Good	Good	-	Good
8	29+200	Good	Good	Good	Good	-	Good
9	37+804	Good	Good	Fair	Fair	-	Good
10	50+620	Good	Good	Fair	Fair	-	Good
11	56+176	Good	Good	Good	Good	-	Good
12	57+690	Good	Good	Good	Good	-	Good
13	60+611	Good	Good	Good	Good	-	Good
14	61+286	Good	Good	Good	Good	-	Good
15	61+468	Good	Good	Fair	Fair	-	Good
16	61+898	Good	Good	Good	Good	-	Good

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	1+277	Good	Good	Fair	-
2	1+405	Good	Good	Fair	-
3	1.993	Good	Good	Fair	-
4	2+342	Good	Good	Fair	-
5	3+215	Good	Good	Fair	-
6	4.762	Good	Good	Fair	-
7	5+057	Good	Good	Fair	-
8	5+902	Good	Good	Fair	-
9	6+410	Good	Good	Fair	-
10	7+750	Good	Good	Fair	Good
11	8+034	Good	Good	Fair	Good
12	8+556	Good	Good	Fair	Good
13	11+667	Good	Good	Fair	Good
14	13+010	Good	Good	Fair	-
15	13+617	Good	Good	Fair	-
16	15+356	Good	Good	Fair	-
17	15+560	Good	Good	Fair	-
18	16+300	Good	Good	Fair	-
19	16+989	Good	Good	Fair	-

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
20	17+780	Good	Good	Fair	-
21	17+950	Good	Good	Fair	-
22	18+050	Good	Good	Fair	-
23	18+469	Good	Good	Fair	Good
24	18+720	Good	Good	Fair	-
25	18+950	Good	Good	Fair	-
26	21+400	Good	Good	Fair	Good
27	21+950	Good	Good	Fair	-
28	22+600	Good	Good	Fair	-
29	23+300	Good	Good	Fair	-
30	23+700	Good	Good	Fair	-
31	23+950	Good	Good	Fair	-
32	24+765	Good	Good	Fair	Good
33	24+950	Good	Good	Fair	-
34	26+500	Good	Good	Fair	Good
35	26+900	Good	Good	Fair	Good
36	28+452	Good	Good	Fair	-
37	28+994	Good	Good	Fair	-
38	29+392	Good	Good	Fair	-
39	29+950	Good	Good	Fair	Good
40	29+983	Good	Good	Fair	Good
41	30+339	Good	Good	Fair	Good
42	30+803	Good	Good	Fair	-
43	31+440	Good	Good	Fair	-
44	31+600	Good	Good	Fair	-
45	31+874	Good	Good	Fair	-
46	31+996	Good	Good	Fair	-
47	32+279	Fair	Fair	Fair	-
48	33+800	Good	Good	Fair	Good
49	34+950	Fair	Fair	Fair	Good
50	35+379	Good	Good	Fair	-
51	35+528	Good	Good	Fair	-
52	35+928	Good	Good	Fair	-
53	36+985	Good	Good	Fair	-
54	37+120	Good	Good	Fair	-
55	37+460	Good	Good	Fair	-
56	37+600	Good	Good	Fair	-
57	37+990	Good	Good	Fair	-
58	38+480	Good	Good	Fair	-
59	39+040	Good	Good	Fair	-
60	39+400	Good	Good	Fair	-

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
61	40+700	Good	Good	Fair	-
62	40+933	Good	Good	Fair	-
63	41+053	Good	Good	Fair	-
64	41+455	Good	Good	Fair	-
65	42+800	Good	Good	Fair	-
66	43+284	Good	Good	Fair	Good
67	45+530	Good	Good	Fair	-
68	45+726	Good	Good	Fair	-
69	46+300	Good	Good	Fair	-
70	47+108	Good	Good	Fair	-
71	47+190	Good	Good	Fair	-
72	47+235	Good	Good	Fair	-
73	48+687	Good	Good	Fair	-
74	49+095	Good	Good	Fair	-
75	50+143	Good	Good	Fair	-
76	50+985	Good	Good	Fair	Good
77	54+294	Good	Good	Fair	-
78	54+571	Good	Good	Fair	-
79	55+460	Good	Good	Fair	-
80	55+600	Good	Good	Fair	-
81	57+398	Good	Good	Fair	-
82	58+240	Good	Good	Fair	-
83	58+760	Good	Good	Fair	-
84	59+600	Good	Good	Fair	-
85	59+800	Good	Good	Fair	-
86	60+920	Good	Good	Fair	-
87	61+900	Good	Good	Fair	-
88	62+638	Good	Good	Fair	-

Annexure 4: Estimation of Toll Revenue

1. **Toll Plaza: Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km.59+400
Car/Taxi/Van	669
LCV	226
Bus	7
Truck	45
MAV	56

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	82%	18%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates :**

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km.59+400
Car/Taxi/Van	40
LCV	95
Bus	195
Truck	235
MAV	470

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	7971320	3585930	7660020	500420	3891310	9683095	33292095	332.921	332.921
2020-21	8369886	4000553	8671215	550179	4250285	10548076	36390193	363.902	696.823
2021-22	9886928	4200581	9560015	591778	4644954	11527540	40411795	404.118	1100.941
2022-23	10381274	4670057	10038015	650956	5068464	12459915	43268681	432.687	1533.628
2023-24	10900338	5175980	11041817	699038	5522713	13581307	46921193	469.212	2002.840
2024-25	12717061	5434779	12120903	766611	5904283	14783689	51727326	517.273	2520.113
2025-26	13352914	6006861	13280294	822068	6420907	16072355	55955401	559.554	3079.667
2026-27	14020560	6307205	13944309	899137	6974434	17308690	57336783	573.368	3653.035

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	67.633	12	4	350	11,36,234	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	kms	3.55	24	4	350	1,19,280	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km	3.55	52	1	1939	3,57,939	01 nos of Labour
6	ROW Cleaning	Half yearly	Km	33.8165	2	5	350	1,18,358	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	104	2	2	650	2,70,400	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	67.633	4	1	350	94,686	02 nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	56	6	1	350	1,17,600	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	1.00	6	15	350	31,500	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos	24	2	2	350	33,600	02 nos of Labour for removal of vegetation/Structure
								22,79,597	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Grass cutter	Monthly	Nos	2.2	12	0	12000	1,342	(12000/year)

3	Bikes	Monthly	Nos	2.2	12	0	2500	4,472	Per Supervisor/Per Month
4	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								80,814	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
3	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
Total								**23,82,411.00**	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	1605	516	8,28,180	10 % of Total Project length on B/S for 1 year
2	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1014.495	225	6,84,784	5% of total Shoulder length throughout the project
3	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 nos)
4	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
5	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	67.633	4	17	2250	1,53,000	5 % of total stones per year (unable to understand the backup)
	Total amount for 1 Year							**18,07,964**	

Operational Expenses Statement

S. No.	Particulars	Amount
1	Man Power	₹ 34,56,000
2	Fuel for Generator & Vehicles	₹ 7,56,000
3	Electricity	₹ 3,30,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 77,093
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 47,04,093**

Abstract Summary of Major/Periodic Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2021	2,89,41,358	3.00	3.0%	3,15,46,080	3.15
1st Major Maintenance - Highway	01-04-2022	6,75,29,835	3.00	3.0%	7,36,07,520	7.36
2nd Major Maintenance - Highways	01-04-2028	9,64,71,193	7.20	3.0%	11,73,08,970	11.73
				Total	**₹ 22,24,62,570**	**22.24**

Major Maintenance BOQ

S. No.	Description	Unit	Quantity	Rate	Amount
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	4,91,069.00	14.00	68,74,966
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00	
	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size		6,138.36	6,800.00	4,17,40,865
	Micro surfacing		2,45,534.50	160.00	3,92,85,520
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	872.00	250.00	2,18,000
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	545.00	130.00	70,850
	Total				**8,81,90,201**
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive	Sqm	16,048.43	516.00	82,80,992

S. No.	Description	Unit	Quantity	Rate	Amount
	of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.				
3	Road Studs	Nos	-	750.00	
			Total	-	**82,80,992**
			Grand Total		**9,64,71,193**

Annexure 6: Letter of Award

MPRDC

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2766196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in

No. MPRDC/BOT/U-P/2010/ 8271
Bhopal, dated 17 October 2011

M/s Dilip Buildcon Ltd.
E-5/99, Arera Colony,
Bhopal

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Mundi-Punasa-Sulgaon-Sanawad Road on BOT ((Toll+ Annuity) basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Mundi-Punasa-Sulgaon-Sanawad Road on BOT ((Toll+ Annuity) basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **₹ 8.28 crores (Rupees eight crores twenty eight lacs only)** as Annuity Amount payable in terms of Clause.25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Thanking you,

Yours faithfully

Encl: **Duplicate copy of LoA**

(Neeraj Vijay)
Dy. General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

VAIDYA ORGANISATION
INFRASTRUCTURE DEVELOPMENT CONSULTANT

TL Office : 302, Shebo Complex, Regal Squre, Indore (M.P.),Tel/Fax : 0731 4000147
Mob : 94250 81233, E-mail : vaidya.mprdc@gmail.com
H. Off. : 31, Indraprosth Tower, 6/1 M.g. Road, Indore (M.P.)Tel/Fax : 0731 4050850,
Mob : 98262-80850, E-mail : Vaidyamk@yahoo.co.uk

Letter No. VO/TL/DBL/22 Date: - 15/05/2013

To,

M/s DBL Mundi – Sanawad Tollways Ltd.
E-5/99 Arera Colony
Bhopal (M.P.)

PROVISIONAL CERTIFICATE

1. I Team Leader Vaidya Organisation Indore, acting as Independent Engineer, under and in accordance with the concession agreement dated 05.12.2011 (The "Agreement") for development of the Mundi - Punasa - Sulgaon - Sanawad Road section (km 0+000 to 67+517) of MDR the "Project Highway" on build, operate and transfer BOT (Toll + Annuity) basis, through M/s DBL Mundi – Sanawad Tollways Ltd, hereby certify that the test specification in Article 14 and Schedule-I of the agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement,
2. Construction works that were found to be incomplete and/ or deficient have been specified in the punch list appended hereto, and the Concessionaire has agreed and accepted that it shall complete and /or rectify all such works it the time and manner set forth in the agreement. (Some of the incomplete works have been delayed as a result of reason attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the Concessionaire,). I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the day of May 15, 2013.

ACCEPTED, SIGNED, SEALED AND DELEVERED
For and on behalf of
CONCESSIONAIRE by;

A.M. Qureshi

M/s DBL Mundi – Sanawad Tollways Ltd

SIGNED, SEALED AND DELIEVERD
For and on behalf of
INDEPENDENT ENGINEER by;

P. C. Agrawal
Team Leader
Indore Package

15/5/13

Annexure 8: Completion Certificate

SCHEDULE –J
(See Clauses 14.2 & 14.3)

COMPLETION CERTIFICATE

1. I **Poonam chand Agrawal** Team Leader **Vaidya Organisation Indore,** acting as Independent Engineer, under and in accordance with the Concession Agreement dated 14.03.2012 (the "Agreement"). For Two laning of the Mundi – Punasa – Sulgaon – Sanawad section (0+000 to 63+.347 Mundi - Punasa – Sulgaon Sanawad & 0–000 to 4–170 Punasa existing Road) **total length 67+517Km** of Major District Road (the "MDR") on build, operate and transfer (BOT) basis, through **M/s DBL Mundi – Sanawad Tollways Ltd, Bhopal** hereby certify that the tests specified in Article 14 and Schedule-I of the agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliable placed in commercial services of the Users thereof.
2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit entry in to commercial operation on this the day of July 8, 2013.

7
8-13

SIGNED, SEALED & DELIEVERED
For and on behalf of
INDEPENDENT ENGINEER by:

Team Leader
Vaidya Organisation, Consultants
Indore-Package

Poonam Chand Agrawal
Team Leader
Indore Package

Annexure 9: Insurance

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001986

जारीकर्ता कार्यालय/Issuing Office
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23, Madhya Pradesh
GSTIN: 23AAACN9467E1Z6
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

मुख्यालय सहयोग /Business Source: 910355
प्रतिनिधि चैनल कोड/Sales Channel Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL MUNDI SANAWAD TOLLWAYS LTD
पता/ Address: PLOT NO -5, INSIDE GOVIND NARAYAN SINGH GATE CHHUNA BHATTI KOLAR ROAD BHOPAL, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016. Cell: 8815168912

ग्राहक आईडी /Customer ID: 9701359577
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAECD0385Q

पॉलिसी: 27/03/2020 से 00:00 से 26/03/2021 की मध्यम सतुर्रीलिक पूरमाती /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 12,17,721.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 1,09,595.00		
SGST/UTGST	₹ 1,09,595.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/ Proposal Number and Date	8000200327066873 Dt. 27/03/2020
कम/ Less:GST_TDS	₹ 0.00		
पुनर्प्राप्त योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/ Receipt Number and Date	321300811010007666 Dt. 27/03/2020
कुल /Total Amount	₹ 14,36,911.00	पछिली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Fourteen Lakh Thirty Six Thousand Nine Hundred Eleven Only)
Location:Mundi-Punasa-Sulgaon-Sanawad Road on BOT (Toll + Annuity) basis, Madhya Pradesh Nimar - East, Khandwa - M.P, 450001

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & IT Equipment, Electronic Equipment, Road Furniture, Fixture, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	1,13,71,00,000.00	1,00,000.00
2	Roads		Zone IV	8,05,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable:Terrorism Damage Exclusion Warranty, Agreed Bank Clause, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportation Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

Printed on 27/03/2020 by ID: 75150

Page no: 1

INSURANCE

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ELECTRONIC EQUIPMENT INSURANCE - EQUIPMENT - ENDORSEMENT SCHEDULE

Attached to and forming part of Policy No : 171200/44/2021/41

Endorsement No : 171200/44/2021/41/001 Endorsement Date : 22/10/2020

Endorsement Effective From 00:00 On 08/09/2020 To Midnight Of 07/09/2021

Insured's Code	: 114378241	Issue Office Code	: 171200
Insured's Name	: DBL Mundi Sanawad Tollways Ltd (GSTIN: 23AAECD0385Q1ZE)	Issue Office Name	: CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016 BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001

Agent/Broker Details

Dev.Off.Code :

Agent/Broker : **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES F**

Address : **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**

Tel/Fax/Email : **0265-2252274/0265-2357445/0265-2356033/**

Total Premium : 0 Type of Endorsement : Addition / Deletion / Modification in Risk

Collection No & Dt : GST INVOICE NO :2419487426 UIN :0

Co Insurance Details :

ENDORSEMENT

Notwithstanding anything contained herein to the contrary in the within mentioned policy

The following correction is being done to the scope of the policy.

Corrrection in insured Name:

Correct name-DBL Mundi Sanawad Tollways Ltd

Subject otherwise to the terms, conditions, exceptions, exclusions and limitations of the policy.

SCHEDULEOF PREMIUM

Cover Description	Original Sum Insured	Endorsement Sum Insured	Revised Sum Insured	Endorsement Premium

Place : :

Date : 22/10/2020

For and on behalf of
The Oriental Insurance Company Limited

Authorised Signatory

All the Amounts mentioned in this policy are in INDIAN RUPEES

Page 1 of 2

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL MUNDI SANAWAD TOLLWAY LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203387748900000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203387748900000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

Annexure 10: Change of Scope

Name of Road : Mundi-Punasa-Sulgaon- Sanawad

Name of Villages/Town	Development proposal as per Schedule-B			Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
	From Ch	To Ch	Length(Km)			
Mundi	0+000	0+875	0.875	1. Mundi town Ch. 0+000 to ch. 0+875- A. From ch. 0+000 to ch. 0+875 carriageway is 2x7.5 = 15mtr. (no change) B. Median constructed is 0.5mtr wide in place of 1.5mtr proposed. C. Footpath 1.5mtr on both sides is not constructed. Actual 0.8mtr wide drains with covers are constructed on both sides. 2. Sulgaon village ch. 53+760 to ch. 54+495- Approved section is executed only median is constructed 0.5mtr wide in place of 1.5mtr proposed. 3. Sanawad town ch. 62+350 to	1. For four lane-divided carriageway with footpath the work was to be executed as per figure 2.2 of schedule. 2. The work executed lesser then provision of CA. A. Mundi town portion from ch. 0+000 to ch.0+875 i. median constructed 0.5mtr wide in place of 1.5mtr required (lesser work) ii. Footpath constructed 0.8mtr in place of 1.5mtr on both side lesser w ork. iii. Concessionaire constructed drains below footpath of 0.8mtr width and claimed the cost of drains as additional work, which is not agreed vide clause	Committee agreed to consider change of scope for difference of provision in Schedule-B and actual work done in site. Concessionaire has to carry out drain in built up area as per clause 3.7 of Schedule-B to concession agreement.
Sulgaon	54+065	54+800	0.735			
Sanawad	63+150	63+776	0.626			
	Total		2.236 km			

				ch. 63+351 (end of road) A. Median is not constructed. **B.** From ch. 62+350 to ch. 63+150- 7mtr wide road is constructed without any drains/footpath. **C.** From ch. 63+150 to ch. 63+245 and ch. 63+340 to ch. 63+351- 14mtr wide road is constructed without any drains /footpath. **D.** From ch. 63+245 to ch. 63+340 14mtr wide road with 0.8mtr wide drain on RHS is constructed. All the Typical Cross Section are attached herewith.	3.7drainage of agreement. **B.** Sulgaon village ch. 53+760 to ch. 54.495 i.e. 735mtr constructed as per CA but median width is only 0.5mtr against required 1.5mtr (lesser work is done) **C.** Sanawad town portion- 4lane was to be constructed in 626 mtr length Four lanes started from ch. 63+150 to ch. 63+347 n 12mtr to 15mtr variable width without median and footpath. only 0.8mtr wide drain on RHS is constructed from ch. 63+245 to ch. 63+340 which is not payable. **It is recommended as below** **i. Lesser work in length/width is chargeable (Negative Variation)** **ii. The Claim of drain work not payable as per clause 3.7 of CA**	

2.		Flexible Pavement construction in Built up area with Paved Shoulder Length= 2935 m				Flexible Pavement construction in Built up area with Paved Shoulder				1. The work was to be executed as per typical cross section fig 2.3 schedule D of the concession agreement width to be paved including drains was 15/20mtr. 2. The concessionaire in general achieved 13mtr-paved width including drains as following 7mtr carriageway, 1.5mtr paved shoulder on both sides and 1.5mtr footpath with drains on both side. Thus, maximum width achieved is 13mtr. Concessionaire claims that variable shoulders could not be constructed due to non-availability of land and defined parameter achieved in 13mtr width except some	Committee agreed to the negative change of scope as recommended by the IE.
		Sr. No.	**Chainage**		**Length as per CA.**	**Width to be paved including drains**	**Sr. No.**	**Chainage**		**Length as per CA.**	**Length to be paved including drains**
			From	**To**				**From**	To		
		1	2+695	2+945	0.25	20.00	1	2+695	2+945	0.25	
		2	20+790	20+995	0.205	15.00	2	20+790	20+995	0.205	
		3	28+250	28+465	0.215	20.00	3	27+840	28+055	0.215	
		4	30+960	31+290	0.33	15.00	4	30+520	30+920	0.400	
		5	0+400	2+935	1.935	20.00	5	1+000	2+935	1.935	

			Total		2.935km			Total		3.005	bottleneck places.	
		As per fig. 2.3 of schedule D					**Being variable shoulder with the targeted width could not be attempted at all the chainages. Concessionaire has constructed 7mtr wide road with 1.5mtr-paved shoulder on either side.**				The actual cross section achieved is on record. **Lesser work is chargeable as per provision of CA.**	
3.		Rigid Pavement construction in Built up area with Paved Shoulder Length=1090 m					Rigid Pavement construction in Built up area with Paved Shoulder Length= 1125 m				1. The work was to be executed as per typical cross section fig 2.3 schedule D of the concession agreement and width to be paved including drains was 15/20mtr. 2. The concessionaire in general achieved 13mtr paved width including drains as following 7mtr carriageway, 1.5mtr paved shoulder on both	Committee agreed to the negative change of scope as recommended by the IE.
		Sr. No.	**Chainage**		**Length as per CA.**	**Width to be paved including drains**	**Sr. No.**	**Chainage**	**Actual Length ~~as per CA.~~**	**Length to be paved including drains**		
			From	**To**				**From**	To			
		1	9+720	10+105	0.385	20.00	1	9+720	10+105	0.385		

		2	33+980	34+225	0.245	15.00	2	33+550	33+760	0.210	sides and 1.5mtr footpath with drains on both side. thus maximum width achieved is 13mtr. Concessionaire claim that variable shoulders could not be constructed due to non-availability of land and defined parameter achieved in 13mtr width except some bottleneck places. The actual cross section achieved is on record. **Lesser work is chargeable as per provision of CA.** clear road with the same was remaining uncompleted at some places. Concessionaire claim in place of above he constructed additional length at other required places.
		3	34+530	34+790	0.260	20.00	3	34+220	34+470	0.260	
		4	45+925	46+125	0.200	20.00	4	45+580	45+850	0.270	
			Total		1.090			Total		1.125	
		As per fig. 2.3 of schedule D					**Being variable shoulder with the targeted width could not be attempted at all the chainages. Concessionaire has constructed 7mtr wide road with 1.5mtr-paved shoulder on either side.**					

4		Concession agreement provides concrete drains / footpath as per typical cross section 2.2 & 2.3 in built-up area with flexible / Rigid pavement. Total length proposed is 2x4025=8050mtr.	The provisions executed in parts with variable sections. Executed sections are on record.	Concessionaire submitted as following- **A.** He was to construct 4.025x2=8.05 km. drain with 2 boxes of 0.6mtr each. Due to unavailability of clear road with the same was remaining uncompleted at some places. Concessionaire claim in place of above he constructed additional length at other required places. **Thus if work is done lesser then quantum of CA then it is chargeable.** **B. If work found more than quantum of CA it is not payable.**	Committee agreed to the negative change of scope as recommended by the IE.

Mundi – Punasa – Sulgaon – Sanawad Road
Change of Scope Structure

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer after revised submission by concessionaire	Decision of committee
1	1+132 (Existing Chainage) (HPC) __ 1x1	1+132 (Existing chainage) & 1+277 (Proposed chainage) Widening (HPC)_1x1	1+284 (P&P Chainage) Reconstruction (HPC)_2x1.2	Existing HPC 1x1000 mm was in poor condition and inadequate opening, which is proposed to widened as per Schedule-B. Hence it is provided reconstruction of 2x1.2 mtr dia HPC, which is recommended to consider net positive change of scope.	Committee agreed to consider net positive change of scope.
2	There was no structure at existing chainage	There was a defined Nallah at this Chainage but no CD structure proposed.	1+490 (Punasa City) (P & P Chainage) New Construction (HPC)_1x1.2	There was no HPC proposed at this location, but water was stagnated along the road. Hence it was necessary to provide 1x1.2 mtr dia HPC, which is adjusted in change in location of HPC at Sl.no. 11 below. Hence, no change of scope is	Committee agreed that no change of scope is required.

				recommended.	
3	2+566 (Existing Chainage) (HPC) __ 2x0.9	2+715 (Proposed Chainage) Retained (HPC) __ 2x0.90	2+721 (P & P Chainage) Reconstruction (BC) __ 1x5.0 Existing HPC dismantled and BC constructed	The existing HPC 2x0.9 mtr was found at site which was proposed to retain as per Schedule-B. There was well defined Nallah having approximate linear water way was 4.5 mtr. Hence, it was propose to reconstruct box type culvert 1x5 mtr at this location. There is a provision of reconstruction of slab 1x4.4 mtr at Sl. no. 9 below, which is recommended to adjust as change in location and consider net positive change of scope.	Committee agreed to consider net positive change of scope.
4	There was no structure at existing chainage	There was a defined Nallah at this Chainage but no CD structure proposed.	6+400 (P & P Chainage) New Construction (HPC)_1x1.2	There was no HPC proposed at this location, but water was stagnated along the road. Hence it was necessary to provide 1x1.2 mtr dia HPC, which is adjusted in change in location of HPC at Sl.no. 13 below. Hence, no change of scope is recommended.	Committee agreed that no change of scope is required.
5	15+550 (Existing Chainage) (HPC) __ 1x1	15+637 (Proposed Chainage) Reconstruction (HPC)_1x1.2	15+636 (P & P Chainage) Reconstruction (HPC)_3x1.2	The existing HPC 1x1 mtr was proposed to reconstruction of HPC 1x1.2 mtr as per Schedule-B, which was inadequate as per the discharge and catchment area at this	Committee agreed to consider net positive change

				location. Hence, it is necessary to provide 3x1.2 mtr dia HPC which is recommended to consider as net positive change of scope.	of scope.
6		21+876 (Proposed Chainage) New construction (HPC)_ 1x1.2	21+370 (P & P Chainage) New construction (HPC) _ 2x1.2	It was proposed to reconstruction of HPC 1x1.2 mtr as per Schedule-B, which was inadequate as per the discharge and catchment area at this location. Hence, it is necessary to provide 2x1.2 mtr dia HPC which is recommended to consider as net positive change of scope.	Committee agreed to consider net positive change of scope.
7		22+246 (Proposed Chainage) New construction (HPC)_1x1.2	21+925 (P & P Chainage) New construction (HPC) _2x1.2	It was proposed to reconstruction of HPC 1x1.2 mtr as per Schedule-B, which was inadequate as per the discharge and catchment area at this location. Hence, it is necessary to provide 2x1.2 mtr dia HPC which is recommended to consider as net positive change of scope.	Committee agreed to consider net positive change of scope.
8		22+872 (Proposed Chainage) New construction (HPC)_5x1.2	22+498 (P & P Chainage) New construction (HPC) _3x1.2	It was proposed to reconstruction of HPC 5x1.2 mtr as per Schedule-B, which was not required as per the discharge and catchment area at this location. Hence, it is necessary to provide 3x1.2 mtr dia HPC which is recommended to consider as net negative change of scope.	Committee agreed to consider net negative change of scope.

9	30+105 (Existing Chainage) (SC)_ 1x3.60	29+557 (Proposed Chainage) Reconstruction (SC)_1x4.4	29+166 (P & P Chainage) Retained (SC)__1x3.6	Already consider as per Sl.no. 3 above. No change of scope is required.	Committee agreed that no change of scope is required.
10	32+480 (Existing Chainage) (HPC) __ 2x0.9	32+480 (Existing chainage) & 31+996 (Proposed chainage) Widening (HPC)_2x0.9	31+605 (P&P Chainage) Reconstruction (HPC)_2x1.2	Existing HPC 2x0.9 mtr was in very poor condition, which was proposed to widening as per schedule-B. Moreover the opening was inadequate. Hence, it is recommended to consider as net positive change of scope.	Committee agreed to consider net positive change of scope.
11	34+560 (Existing Chainage) (HPC) __ 1x0.60	34+048 (Proposed Chainage) Reconstruction (HPC)__1x1.2	33+640 (P & P Chainage) Retained (HPC)__1x0.6	Already consider as per Sl.no. 2 above. No change of scope is required.	Committee agreed that no change of scope is required.
12	34+950 (Existing Chainage) (MNB)_4x14.80 8.30 mtr wide outer to outer	34+950 (Existing chainage) & 34+431 (Proposed chainage) Widening (MNB)_4x14.8. 12 mtr wide outer to outer	34+012 (P&P Chainage) (MNB)_4x14.8 Widening not done only repair of existing slab is done. 8.3mtr wide outer to outer	1. Widening from 8mtr to 12mtr not done by concessionaire. Cost is recoverable (Negative Variation) 2. Concessionaire claimed positive variation for repaired work done to existing super structure. Which is not found payable by this office.	Committee agreed to consider net negative change of scope.
13	35+870 (Existing Chainage)	35+303 (Proposed Chainage) Reconstruction	34+887 (P & P Chainage) Retained (HPC)__1x0.6	Already consider as per Sl.no. 4 above. No change of scope is required.	Committee agreed that no change of scope

	(HPC) __ 1x0.60	(HPC)__1x1.2			is required.
14	38+950 (Existing chainage) HPC____1x0.60	38+418 (Proposed chainage) Reconstruction (HPC)_1x1.2	37+999 (P&P Chainage) Retained (HPC)_1x0.6	The existing canal was crossing with HPC 1x0.6 mtr which was in good condition. Reconstruction of HPC 1x1.2 mtr was proposed at this location. Hence it is recommended to consider as negative change of scope which is adjusted due to change in location as per sl.no.15 below.	Committee agreed that no change of scope is required.
15	There was no structure at existing chainage.	There was no CD structure proposed at this Chainage.	39+072 (P & P Chainage) New Construction (HPC)_1x1.2	Already consider at Sl.no.14.	Committee agreed that no change of scope is required.
16	40+440 (Existing Chainage) (HPC) __ 1x0.60	39+891 (Proposed Chainage) Reconstruction (HPC)_1x1.2	39+488 (P & P Chainage) Retained (HPC)_1x0.6	The existing canal was crossing with HPC 1x0.6 mtr which was in good condition. Reconstruction of HPC 1x1.2 mtr was proposed at this location. Hence it is recommended to consider as negative change of scope which is adjusted due to change in location as per sl.no.23 below. No change of scope is required.	Committee agreed that no change of scope is required.
17	41+580 (Existing Chainage) (HPC) __ 1x0.60	41+010 (Proposed Chainage) Reconstruction (HPC)__1x1.2	40+606 (P & P Chainage) Retained (HPC)__1x0.6	The existing canal was crossing with HPC 1x0.6 mtr which was in good condition. Reconstruction of HPC 1x1.2 mtr was proposed at this location. Hence it is recommended to consider as negative change of scope which is adjusted due to	Committee agreed that no change of scope is required.

				change in location as per sl.no.25 below. No change of scope is required.	
18	42+675 (Existing Chainage) (MJB) __ 4x20.00	42+675 (Existing chainage) & 42+100 (Proposed chainage) Retained (MJB)_4x20.00	41+698 (P&P Chainage) Super structure replacement (MJB)_4x20.00	1. The superstructure of the retained bridge was replaced which is on record. 2. The design calculation and load testing is on record. 3. The extra cost for replacement of super structure as prepared by concessionaire is Rs. 148.423 lacs. This requires thorough checking. 4. The extra scope of work-required approval of competent vide article 16 clause 16.2 of CA. After approval positive variation (extra work is payable)	Committee agreed to consider net positive change of scope.
19	43+176 (Existing Chainage) (HPC) __ 1x0.9	42+601 (Proposed Chainage) Reconstruction (HPC)_ 1x1.2	42+184 (P & P Chainage) Retained (HPC)_1x0.9	Existing HPC 1x0.9 mtr was in good condition, which was proposed to reconstruction of HPC 1x1.2 mtr. It is recommended to consider as negative change of scope.	Committee agreed to consider net negative change of scope.

20	48+935 (Existing Chainage) (HPC) __ 2x0.6	48+351 (Proposed Chainage) Reconstruction (HPC) __ 1x1.2	47+943 (P & P Chainage) Re construction (HPC) __ 2x1.2	Existing HPC 2x0.6 mtr was in poor condition which was proposed to reconstruction 1x1.2 mtr HPC. It was found inadequate opening. Hence, it is recommended to consider as positive change of scope.	Committee agreed to consider net positive change of scope.
21	51+590 (Existing Chainage) (Slab culvert) 1x6.0 mtr 7.75 mtr width	51+028 (Proposed Chainage) Reconstruction (Slab culvert)____1x6.0 mtr 12 mtr width	50+620 (P & P Chainage) Retained (Slab culvert) __ 1x6.0 mtr 7.75 mtr width	Existing slab culvert was in a good condition which was proposed to reconstruction 1x6 mtr. Hence, this slab culvert is retained, and recommended to consider as negative change of scope.	Committee agreed to consider net negative change of scope.
22	52+000 (Existing Chainage) (HPC)___3x0.6	51+385 (Proposed Chainage) Reconstruction	50+976 (P & P Chainage) Re construction (HPC) __	The existing HPC 3 x 0.6 m was proposed for the reconstructiom as HPC 2 x 1.2 m which was in adequate as per hydraulic	Committee agreed to consider net

		(HPC)_2x1.2	3x1.2	caluculation. Hence HPC 3 x 1.2 m was proposed, which was recommended to consider as net positive change of scope.	positive change of scope.
23	There was no structure at existing chainage	There was a defined Nallah at this Chainage but no CD structure proposed.	52+640 (P & P Chainage) New Construction (HPC)_1x1.2	There is a requirement of 1x1.2 mtr HPC as per site condition, but no proposal was given as per schedule-B. This HPC is adjustable due to change in location at Sl.no. 16 above. Hence no change of scope is required.	Committee agreed that no change of scope is required.
24	54+800 (Existing) Chainage) (HPC) __ 4x1.2	54+189 (Proposed Chainage) Widening (HPC) __ 4x1.2	53+769 (P & P Chainage Reconstruction (MNB)_____2x5.00	Existing HPC 4 x 1.2 m was in poor condition which was proposed for widening as per sechedule B. There was a well defined nala having liner water way approximate 9 mtr. Hence reconsrtuction minor bridge 2 x 5 mtr was proposed which is recommeded to consider as net positive change of scope.	Committee agreed to consider net positive change of scope.

25	There was no structure at existing chainage	There was a defined Nallah at this Chainage but no CD structure proposed.	55+460 (P & P Chainage) New Construction (HPC)_1x1.2	here is a requirement of 1x1.2 mtr HPC as per site condition, but no proposal was given as per schedule-B. This HPC is adjustable due to change in location at Sl.no. 17 above. Hence no change of scope is required.	Committee agreed that no change of scope is required.
26	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	58+240 (P & P Chainage New Construction (HPC) __ 2x1.2	Since it was an additional structure, which will not consider as change of scope as per provision of C.A.	Committee agreed that no change of scope is required.
27	61+350 (Existing chainage) (HPC)_4x1.2	60+766 (Proposed chainage) Widening (HPC)_4x1.2	60+265 (P&P Chainage) Reconstruction (MNB)_1x8.00	Existing HPC 4 x 1.2 m was in poor condition which was proposed for widening as per sechedule B. There was a well defined nala having liner water way approximate 9 mtr. Hence reconsrtuction minor bridge 1 x 8 mtr was proposed which is recommeded to consider as net positive change of scope. due approval of advisory committee.	Committee agreed to consider net positive change of scope.

28	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	60+934 (P & P Chainage New Construction (HPC) __ 1x1.2	Since it was an additional structure, which will not consider as change of scope as per provision of C.A.	Committee agreed that no change of scope is required.

In-principle approval under change of scope is recommended for above works as per remarks of last column. Further it has been instructed to Independent Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively.

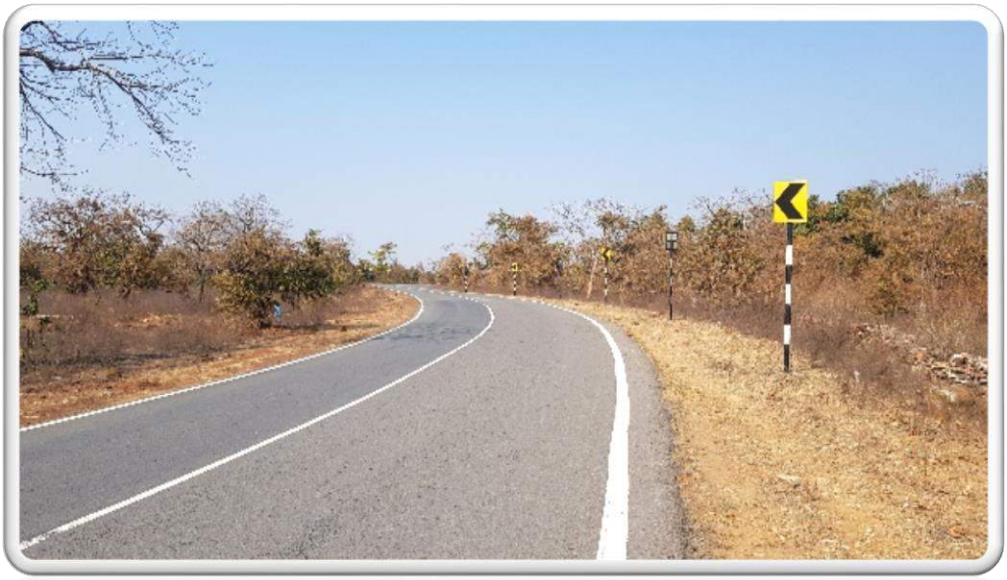
Devendra Jain) Director DBL, Bhopal	P.C. Agrawal) Team Leader Independent Engineer	(Anil Shrivastava) AGM (MDR) MPRDC	(B.C. Tentwal) DM (Indore) MPRDC	((Alok Chaturvedi) GM (MDR.) MPRDC Bhopal	(Arun Paliwal) GM (Finance) MPRDC ,Bhopal	(Narendra Kumar) Chief Engineer MPRDC Bhopal	(A.S. Ch Technical MPRDC

This is only Attence in Meeting, NOT Agrawal in Negative change

SHREM FINANCIAL PRIVATE LIMITED

Development of Uchera-Nagod-Singhpur-Kalinjer Section (SH-56) Road in the State of Madhya Pradesh on BOT (Toll+Annuity) basis.

TECHNICAL DUE DILIGENCE REPORT



FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Uchera-Nagod-Singhpur-Kalinjer Section (SH-56) Road in the State of Madhya Pradesh on BOT (Toll+Annuity) basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Uchera-Nagod	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

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This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL UCHERA-NAGOD TOLLWAYS LIMITED (herein after referred to as the "**Concessionaire**") had augmented the existing road "Uchera-Nagod-Singhpur-Kalinjer" section of SH in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 24th September, 2012.

The project Highway starts at Km.32+000 and ends at Km 87+000 Near UP Border on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis. Project Location map is given at **Figure 1.1.**

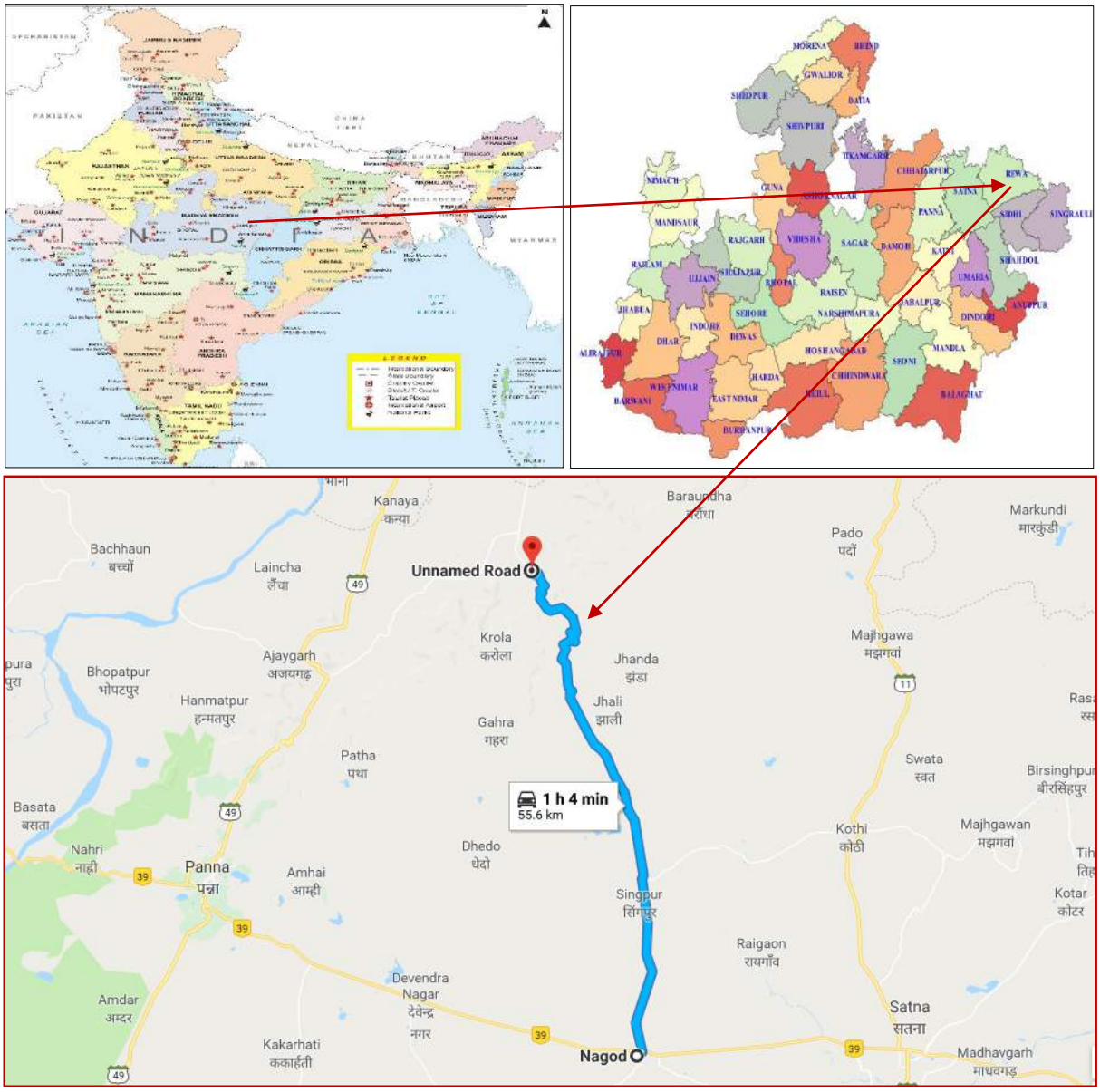

Figure 1.1: Project Location Map

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL UCHERA NAGOD TOLLWAYS LIMITED vide agreement dated 26.03.2018.

SHREM FINANCIAL PVT. LTD. (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection Etc.

1.2 Salient features of the Project

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Development of Uchera Nagod Kalinjar (SH-56) Road of SH-56 in the State of Madhya Pradesh on BOT (Toll + Annuity) basis.
2	Road Type	State Highway.
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Uchera - Nagod Tollways Ltd.
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Design Length as per Schedule B of CA	55.600 Km.
7	Date of LOA	08.08.2012
8	Date of Agreement	24.09.2012
9	EPC Cost	Rs. 97.85 Cr.
10	Nature of contract	BOT (Toll + Annuity)
11	Toll collected by	Concessionaire
12	Concession Period	15 years from the Appointed date
13	Appointed date	20.11.2012
14	Concession end date	19.11.2027
14	Construction Period	730 days from the Appointed date.
15	Schedule Completion Date	19.11.2014
16	Date of issuance of Provisional Certificate (Commercial Operation Date)	15.05.2014
17	Date of issuance of Completion Certificate	5.08.2014
18	Annuity Amount (every six months)	Rs 8.46 Cr
19	Total Number of Annuities payable	26 Nos.
20	First Annuity Payment Date	15.11.2014
21	Total Number of Annuities Paid	13 Nos

1.3 Scope of Consultancy services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features as per schedule B and Schedule C of CA including Change of scope are given in the following table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	COS*	As per Site
1	Total Length	55.600 Kms.	---	55.600 Kms.
2	Length of 2-Lane without paved shoulder	51.800 kms.	---	51.800 Kms.
3	Length of 2-Lane with paved shoulder	3.800 Kms.	---	3.800 Kms.
4	Length of Nagod Bypass	1.700 Kms.	---	1.700 Kms.
5	Toll Plaza	1 No.	---	1 No.
6	Bus Bays / Bus Shelters	7 Nos.	---	7 Nos.
7	Truck Lay Bays	1 Nos.	---	1 No.
8	Major Junction	4 Nos.	---	4 Nos.
9	Minor Junctions	9 Nos.	---	9 Nos.
10	Major Bridges	0 Nos.	2 Nos.	2 Nos.
11	Minor Bridges	7 Nos.	3 Nos.	10 Nos.
12	Box/Slab Culverts	35 Nos.	(+6, -11) Nos.	30 Nos.
13	Pipe Culverts	58 Nos.	(+45, -11) Nos.	92 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Sections shown below as per schedule D of CA, during the construction.

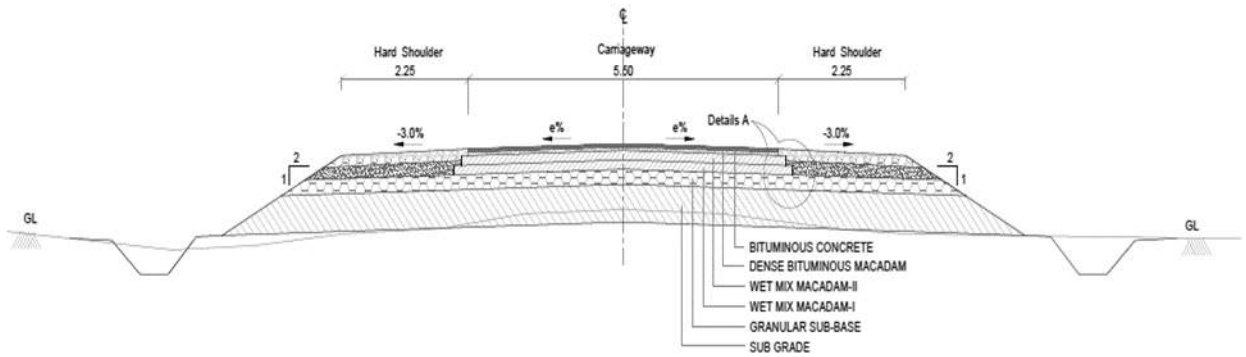

Figure 2.1: TCS 2.1 2 Lane with Granular Shoulder. (Cross Section in Open Country)

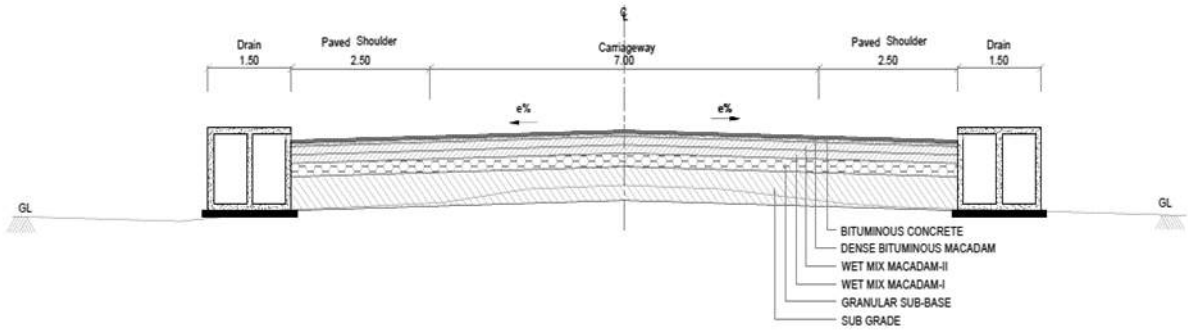

Figure 2.2: TCS 2.3 The Carriageway shall be 7.0 m with Paved shoulder (In Built up Areas)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From Chainage (Km.)	To Chainage (Km.)	Type of TCS
1	0+000	1+700	TCS 2.1
2	33+100	34+400	TCS 2.1
3	34+400	35+600	TCS 2.3
4	35+600	54+900	TCS 2.1
5	54+900	55+300	TCS 2.3
6	55+300	67+400	TCS 2.1
7	67+400	68+400	TCS 2.3
8	68+400	69+000	TCS 2.1
9	69+000	69+800	TCS 2.3
10	69+800	85+200	TCS 2.1
11	85+200	85+600	TCS 2.3
13	85+600	87+000	TCS 2.1

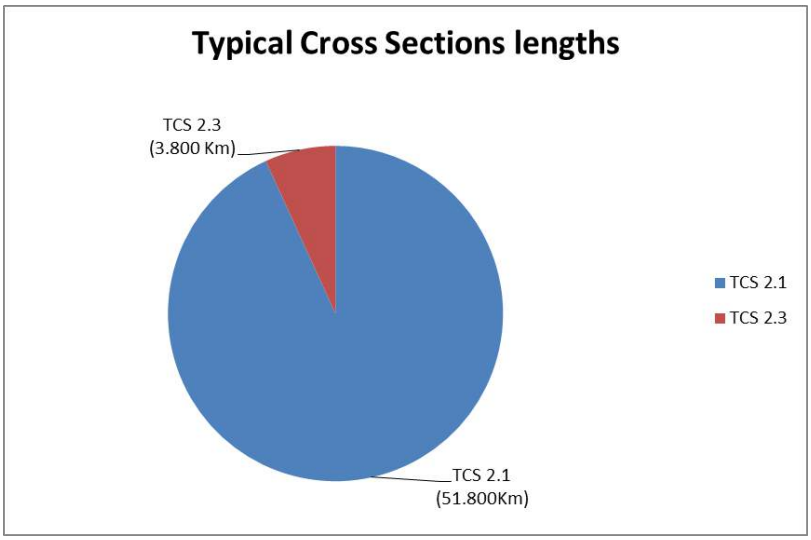

Figure 2.3: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, drains are accommodated along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.

- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment

Bypass is constructed for a length of 1.7 Km as per the provisions of Schedule B of the Concession Agreement.

2.6 Intersections

As per Schedule B of the Concession Agreement 4 Major Junctions and 9 Minor Junctions are developed. Details are given below

Table 2.3: Summary of Junctions

S. No.	Chainage (Km.)	Side	Type	Major /Minor
1	32+000	BHS	T	Major
2	33+100	BHS	T	Major
3	35+500	RHS	T	Minor
4	38+100	LHS	T	Minor
5	47+200	LHS	T	Minor
6	48+800	LHS	T	Major
7	50+500	RHS	T	Major
8	50+800	LHS	T	Minor
9	66+700	RHS	T	Minor
10	67+100	LHS	T	Minor
11	67+500	RHS	T	Minor
12	70+000	RHS	T	Minor
13	79+300	RHS	T	Minor

2.7 Grade Separated Structures and Uunderpasses

There are no Grade separated structures in the Project, as per provisions of Schedule B of the Concession Agreement.

2.8 Road Over Bridge

There are no Road Over Bridge in the Project, as per provisions of Schedule B of the Concession Agreement.

2.9 Summary of the Carriageway and pavement Details

The details of Pavement are shown in the following table.

Table 2.4: Summary of Carriageway and Pavement Details

S. No.	Description	Flexible (Km.)	TCS Type
1	2 Lane with Earthen shoulder	51.800	TCS 2.1 of Schedule D
2	2 Lane with Paved shoulder	3.800	TCS 2.3 of Schedule D
3	Bypass Length	1.700	
4	Total Length of the Project	55.600	
5	New Alignment	-	
6	Realignment	-	
7	Strengthening	-	
8	Reconstruction	55.600	
9	Total Length of the Project	55.600	

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	-	-	-	-
2	Widening	-	2	30	14
3	Reconstruction	-	5	9	21
4	New	-	-	19	-
5	Improvement	-	-	-	-
Total		**-**	**7**	**58**	**35**

2.11 Toll Plaza

As per Schedule C provisions of the Concession Agreement one Toll Plaza has been constructed at Km. 47+950. Salient features of Toll Plaza are provided below.

- Each side comprises of 1 Normal Lanes, 1 extra wide lane and bike lane.
- The lane width in normal lanes is 3.20m.
- The width of islands provided is 1.8m.
- The single canopy is provided to cover the toll lanes.
- Toll plaza building is G+1 building which houses control room, UPS and Pantry.

Figure 2.4: Toll Plaza at Km. 47+950

2.12 Bus shelters and truck lay byes

As per the provisions of Schedule C of the Concession Agreement (CA), 7 Nos. bus shelters and 1 No truck lay bye are provided in the entire length of Project. Details such as Chainage Location are listed in the following table.

Table 2.6: List of Bus shelter & Truck Lay bays

S. No.	Chainage (Km.)	Bus shelter/Truck lay bye
1	40+000	Bus shelter
2	44+600	Bus shelter
3	55+000	Bus shelter
4	67+900	Bus shelter
5	69+500	Bus shelter
6	85+500	Bus shelter
7	55+000	Bus shelter
8	86+500	Truck lay bye

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards, KM. stones, Road Marking and Object/Hazard Markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in Error! Not a valid bookmark self-reference. and few representative photographs are given below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain Rolling and Hilly Terrain
2	Land Use	Built Up, Agriculture and Forest
3	Total length of the Road	55.600 km
4	Earthen shoulder	1.0 m to 1.5m Width on site
5	Bypasses	1 Nos
6	Junctions	13 Nos.
7	Toll Plaza	Km.47+950
8	Sign boards	Sign boards are provided as per requirement
9	Road Markings	Lane markings are provided as per requirement
10	Bus Bays /shelters	07 Nos.
11	Truck Lay bye	01 Nos.
12	Street Lighting	Highway lighting provided as per requirement
13	Avenue plantation	Provided along the Project Corridor

3.3 Pavement Condition

Pavement condition survey was carried out on the project road, based on observations supplemented by simple measurements. The criteria adopted for the classification of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of

pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP 19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 3.3: Pavement Condition Summary

From (Km.)	To (Km.)	Length (Km)	Condition
Km. 0+000	Km. 1+700	55.600	Good
Km. 33+100	Km. 87+000		

Km.35+900

Km. 48+500

Km.72+400 **Km. 73+250**

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 02 Nos. Major Bridge, 10 Nos. Minor Bridges, 92 Nos. Pipe culverts and 30 Nos. Slab/ Box culverts are there along this project road.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	2 Nos
2	Minor Bridge	10 Nos
3	Pipe culverts	92 Nos
4	Slab/Box Culverts	30 Nos

For major bridges the superstructure is PSC T beam with RCC wall type piers and abutments resting on Open foundation. For minor bridges the superstructure is RCC solid slab and the substructures are of CR masonry wall type resting on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the major bridge at Km 0+274 is 60.0m with 2 spans. The superstructure consists of PSC T Beam with RCC column type piers and wall type abutments resting on open foundations. The Superstructure is seated on elastomeric / Neoprene bearings. Expansion joints are of strip seal type. RCC crash barrier have been provided on both sides of the deck.

The total length of the major bridge at Km 82+263 is 100.0m with 4 spans. The superstructure consists PSC T Beam with RCC column type piers and wall type abutments resting on Open / Pile foundations. Superstructure is seated on elastomeric / Neoprene bearings. Expansion joints are of strip seal type. RCC crash barrier have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)
1	Km. 0+274	2 x 30.0	60.0
2	Km. 82+263	4 x 25.0	100.0

The condition of the superstructure and substructure is good.

Km.82+263

Km.0+274

Figure 4.1: Representative photos of Major Bridges

4.4 Details of Minor Bridges

There are 10 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type, supported on open foundations. Expansion joints are buried type and bearings are tar paper and neoprene bearings. RCC crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)	Description
1	Km. 6+000	3 x 10	30	The Minor bridge has RCC solid slab superstructure supported on RCC wall type piers and abutments resting on open foundations.
2	Km. 16+950	3x15.0	45.0	The Minor bridge has girder type superstructure supported on RCC wall type piers and abutments resting on open foundations. It has RCC crash barrier with elastomeric bearings and buried type expansion joints.
3	Km. 21+600	5x7.5	37.5	The Minor bridge has arch type superstructure supported on CRM wall type abutment and piers resting on open foundations.
4	Km. 30+900	3x7.0	21.0	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5	Km. 42+600	3x15.0	45.0	The Minor bridge has RCC girder type superstructure supported on PCC / RCC wall type piers and abutments resting on open foundations. It has RCC railing. Elastomeric Bearings and buried type expansion joints.
6	Km. 48+787	1x10.0	10.0	The Minor bridge has RCC solid slab superstructure supported on RCC wall type abutments resting on open foundations. It has RCC crash barrier with Tar Paper Bearings and buried type expansion joints.
7	Km. 59+013	1x10.0	10.0	The Minor bridge has RCC solid slab superstructure supported on RCC wall type abutments resting on open foundations. It has RCC crash barrier with Tar Paper Bearings and buried type expansion joints.

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)	Description
8	Km. 69+000	3x20.0	60.0	The minor bridge has RCC girder type superstructure supported on PCC / RCC wall type piers and abutments resting on open foundations. It has RCC crash barrier with Elastomeric Bearings and buried type expansion joints.
9	Km. 69+779	3x6.0	18.0	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	Km. 80+100	1x10.0	10.0	The minor bridge has RCC solid slab superstructure supported on RCC wall type abutments resting on open foundations. It has RCC crash barrier with Tar Paper Bearings and buried type expansion joints.

Km.16+950

Km. 30+900

Figure 4.2: Representative photos for minor bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. Slab/Box Culverts

There are 30 No's of slab / box culverts present in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km)	Span (m)	Vent Size (m)
1	Km. 34+173	1 x 2.0	4.5
2	Km. 35+200	1 x 3.0	3.0
3	Km. 36+100	1 x 2.0	3.0
4	Km. 36+800	1 x 3.0	2.5
5	Km. 48+800	1 x 3.0	2.0
6	Km. 54+700	1 x 4.0	2.5
7	Km. 59+400	1 x 6.0	3.0

S. No.	Chainage (Km)	Span (m)	Vent Size (m)
8	Km. 59+800	1 x 4.0	3.0
9	Km. 60+700	1 x 6.0	4.0
10	Km. 61+100	1 x 6.0	3.5
11	Km. 61+200	1 x 6.0	2.5
12	Km. 62+000	1 x 4.0	2.0
13	Km. 62+400	1 x 4.0	2.0
14	Km. 65+900	1 x 3.0	3.0
15	Km. 66+600	1 x 3.0	2.2
16	Km. 69+100	1 x 3.0	2.5
17	Km. 71+500	1 x 4.0	3.2
18	Km. 71+900	1 x 3.0	1.5
19	Km. 72+500	1 x 3.0	1.5
20	Km. 74+800	1 x 4.0	1.5
21	Km. 80+191	1 x 3.0	2.0
22	Km. 81+443	1 x 3.0	1.5
23	Km. 82+600	1 x 4.0	1.5
24	Km. 86+200	1 x 1.0	2.0
25	Km. 86+400	1 x 1.0	1.5
26	Km. 86+500	1 x 1.0	1.2
27	Km. 86+800	1 x 1.0	1.5
28	Km. 87+200	1 x 1.0	1.3
29	Km. 87+400	1 x 1.0	1.25
30	Km. 88+700	1 x 1.0	1.2

4.5.2. Condition of the Slab/Box Culverts

The general condition of above slab / box culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km.35+200

Km.74+800

Km.71+500

Km.74+800

Figure 4.3: Representative photos for Box/Slab Culverts

4.5.3. General Description of the Pipe Culverts

There are 92 No's of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No	Chainage @ Km.	No. of Rows& Dia(m)	S. No	Chainage @ Km.	No. of Rows& Dia(m)	S. No	Chainage @ Km.	No. of Rows& Dia(m)
1	0+200	1 x 1.2	32	63+700	1 x 1.0	63	68+586	1 x 1.2
2	0+500	1 x 1.2	33	72+900	1 x 1.0	64	68+767	1 x 1.2
3	0+900	1 x 1.2	34	73+200	1 x 1.2	65	69+343	1 x 1.0
4	1+350	1 x 1.2	35	73+500	1 x 1.0	66	69+913	1 x 1.0
5	34+300	1 x 1.0	36	73+900	1 x 1.2	67	71+989	2 x 0.9
6	34+800	1 x 1.0	37	74+300	1 x 1.0	68	72+343	1 x 1.2
7	38+500	1 x 1.0	38	76+100	1 x 1.2	69	72+486	1 x 1.2
8	41+500	1 x 1.0	39	76+900	1 x 1.2	70	72+676	1 x 1.0
9	44+800	1 x 1.0	40	77+500	1 x 1.0	71	72+741	1 x 1.2
10	46+500	1 x 1.0	41	83+100	1 x 1.0	72	72+817	1 x 1.2
11	49+800	1 x 1.0	42	83+600	1 x 1.0	73	72+931	1 x 1.0
12	49+800	1 x 1.0	43	84+400	1 x 1.2	74	73+051	1 x 1.2
13	50+500	1 x 1.0	44	84+400	1 x 1.2	75	73+302	1 x 1.0
14	50+800	1 x 1.0	45	84+900	1 x 1.2	76	73+394	1 x 1.2
15	51+900	2 x 1.0	46	84+900	1 x 1.0	77	73+625	1 x 1.2
16	52+500	1 x 1.0	47	85+200	1 x 1.0	78	73+734	1 x 1.0
17	52+700	2 x 1.0	48	34+823	2 x 0.9	79	73+827	1 x 1.0
18	55+500	1 x 1.0	49	37+146	1 x 1.2	80	74+114	1 x 1.0
19	56+200	1 x 1.0	50	57+735	1 x 1.2	81	74+635	1 x 1.2
20	56+500	1 x 1.0	51	57+827	1 x 1.0	82	74+903	1 x 1.2
21	56+800	1 x 1.0	52	57+906	1 x 1.2	83	74+99	1 x 1.2
22	57+400	1 x 1.0	53	58+187	1 x 1.2	84	75+313	1 x 1.0
23	58+100	1 x 1.2	54	58+390	1 x 1.0	85	75+403	1 x 1.0
24	58+200	1 x 1.0	55	58+773	1 x 1.2	86	75+500	2 x 0.9

S. No	Chainage @ Km.	No. of Rows& Dia(m)
25	58+500	1 x 1.0
26	58+900	1 x 1.0
27	59+200	1 x 1.2
28	59+600	1 x 1.0
29	60+200	2 x 0.9
30	60+400	1 x 1.2
31	60+900	1 x 1.2

S. No	Chainage @ Km.	No. of Rows& Dia(m)
56	59+130	1 x 1.0
57	59+220	1 x 1.2
58	65+173	1 x 1.2
59	66+819	1 x 1.0
60	67+500	1 x 1.0
61	68+079	1 x 1.0
62	68+327	1 x 1.2

S. No	Chainage @ Km.	No. of Rows& Dia(m)
87	77+675	1 x 1.2
88	78+063	1 x 1.2
89	79+799	1 x 1.0
90	80+992	1 x 1.2
91	81+582	1 x 1.2
92	84+616	1 x 1.0

4.5.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report, providing insights on design life of pavement, crust thickness, history of overlays over the existing pavement etc., Based on pavement condition and Concession Agreement (CA) provisions recommendation for the upcoming renewal cycles.

5.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Pavement design (Crust Thickness)

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.1: Real Time Traffic from COD and Project Traffic Current years with 5% growth for CMSA

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2015	204	52	5	14	77	150	0.14	0.14	3	Actual
2016	273	73	9	12	107	200	0.19	0.33	4	Actual
2017	235	78	7	15	94	194	0.19	0.52	5	Actual
2018	395	140	16	21	101	278	0.27	0.79	6	Actual
2019	455	142	12	33	231	419	0.40	1.19	7	Actual
2020	422	97	16	50	255	418	0.40	1.59	8	Actual
2021	443	102	17	53	267	439	0.42	2.01	9	Projected
2022	465	107	18	56	281	461	0.44	2.45	10	Projected
2023	488	112	19	58	295	484	0.46	2.92	11	Projected
2024	513	118	20	61	309	508	0.49	3.40	12	Projected
2025	538	124	21	64	325	534	0.51	3.91	13	Projected
2026	565	130	22	68	341	560	0.54	4.45	14	Projected
2027	594	136	23	71	358	588	0.56	5.02	15	Projected

Pavement crust thickness in the pavement design report for flexible pavement is as follows: -

Table 5.2: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	7%
2	Design Life (Years)	15 years
3	Design Traffic (MSA)	1.59 MSA for 8 Years 5.86 MSA for 15 Years 10 MSA Adopted
4	Surface course (BC)	40 mm
5	Binder course (DBM)	60 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	230 mm

MSA has been adopted based on existing crust as per IRC 37 (Back Calculations)

Pavement crust thickness in the pavement design report for rigid pavement is as follows: -

Table 5.3: Rigid Pavement Design for Toll Plaza

Description	Designed Parameters
CBR of sub grade	7 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	250
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	600

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ designed traffic is more than the actual traffic. Hence pavement crust is safe

5.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 10 MSA for a design life of 15 years (up to end of the year 2027) as discussed in **Table 5.2**, whereas the actual traffic is 1.59 MSA and 5.86 MSA for 8 years and 15 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

5.4 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed on or before 2021.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction (as per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Road Safety Audit

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards		
		Information Boards		

S. No.	Item Description		Status	Condition
		Other Sign Boards		
		Gantry Sign Boards		
2	Road Marking	Studs &Lane marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Fair

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

S-curve ahead Km. 85+300

Cross Road at Km. 48+500

W Beam MCB at approaches of MJB at Km.41+600

OH marker board before the Head wall of Box MJB at km.41+600

Figure 6.1: Representative photos during road safety audit

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one Toll Plaza on the project road at Km.47+950. Each side comprises of 1 normal lane, 1 extra wide lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Equipment's at toll plaza and control room

S. No	Description	Normal Lanes	Extra Wide Lanes	Total
1	Toll Lane Controller	2	2	4
2	AVC Controller	2	2	4
3	Height Sensor	2	2	4
4	Toll Collector keyboard	2	2	4
5	Toll Collector Display TFT monitor	2	2	4
6	Traffic light	2	2	4
7	User fare display	2	2	4
8	Overhead Lane Status Light (OHLS)	2	2	4
9	Thermal receipt printer	2	2	4
10	Lane incident capture camera	4	4	8
11	Lane Exit barrier	2	2	4
12	Violation alarm switch	2	2	4
13	Amber and siren light	2	2	4
14	Slow Speed Weight in Motion	0	0	0
15	Booth CCTV camera	2	2	4
16	Lane Software	2	2	4
17	Intercom Slave Unit	2	2	4
Plaza room equipment				
1	TMS Server with monitor			1
2	Joystick			1
3	16 Channel NVR for central booth CCTV monitoring			1
4	PTZ Camera with pole			1
5	Incident Management Work Station			1
6	Intercom Master Unit			1
7	Computer			1
8	Printer			1
9	Scanner			1
10	42" TV			1
UPS				

S. No	Description	Normal Lanes	Extra Wide Lanes	Total
1	7 KVA			1
Generator				
1	62.5 KVA			1

7.3 Vehicles

Few vehicles are required for operation of the highway as per IRC and as per Contract document of the project. The list of vehicles which were observed at site are presented in the below Table.

Table 7.2: List of Vehicles

S. No	Vehicle Type	No
1	Patrol Vehicle	1
2	Ambulance	1
3	Crane	1

Toll Plaza at 47+950

Toll Building at 47+950

Figure 7.1: Photographs of Toll Plaza

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Annual Average Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2016	99821	26544	3354	4227	39007	172889
2017	85854	28358	2691	5330	34390	156320
2018	144158	51160	5970	7624	36845	245862
2019	165918	52005	4544	12121	84368	329044
2020	154420	35459	6003	18459	93150	300705
AACGR* (%)						**18.23%**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8.2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	84519	739	22096	4365	13659	90509	215887
Toll Revenue collection in Rs.	2535570	59101	1657200	681360	2563085	33707815	41204131

The figures shown in Table 8-1 are Real time traffic data on project road for the past five years and the growth rate is calculated to be 18.23%. It is pertinent to note that the figures given in table 8.1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8.2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	234	61	12	37	248	358	234	91	36	112	1116	1355	Actual
2021	245	64	13	39	260	376	245	95	38	118	1172	1423	Projected
2022	258	67	13	41	273	395	258	100	40	124	1230	1494	Projected
2023	270	70	14	43	287	414	270	105	42	130	1292	1568	Projected
2024	284	74	15	45	301	435	284	110	44	136	1356	1647	Projected
2025	298	77	15	48	316	457	298	116	46	143	1424	1729	Projected
2026	313	81	16	50	332	480	313	122	48	150	1495	1816	Projected
2027	329	85	17	53	349	504	329	128	50	158	1570	1906	Projected
2028	345	89	18	55	366	529	345	134	53	166	1649	2002	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in **Table 8.4**

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1
Location	Km.47+950
4 lane length in km	0
2 lane length in km	53.8
Agreement Date	24-09-2012
Appointed Date	20-11-2012
Concession period	15
Commercial operation date	05-08-2014
Concession End Date	19-11-2027
Traffic study year	2020
Vehicle Type	**AADT**
Car/Jeep/Van	234
2-axle Bus	61
LCV/LGV	12
2A-Truck	37
MAV (2A-6A)	248
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5 Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 Km.47+950	Remarks
2019-20	412.041	Actual
2020-21	450.294	Projected
2021-22	489.704	Projected
2022-23	537.1	Projected
2023-24	582.361	Projected
2024-25	631.297	Projected
2025-26	684.928	Projected
2026-27	745.416	Projected
2027-28	514.957	233 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project Highways by itself or through O&M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project Highway and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3. Carrying out preventive and periodic maintenance of the Project Road;
4. Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
5. Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;

6 Functioning of the lighting System
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Lay bays
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefor;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Road.
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project Highway

The maintenance methodology and yearly maintenance Programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This Programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Major Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
1st Major Maintenance - Highway Phase 1	18 Km- 2018	18 Km-Executed with micro surfacing
1st Major Maintenance - Highway Phase 2	26 Km- 2019	26 Km-Executed with BC Overlay
1st Major Maintenance - Highway Phase 3	13 Km- 2021	Scheduled
1st Major Maintenance - Highway Phase 4	15 Km- 2022	Scheduled
2nd Major Maintenance - Highway	56 km- 2028	Scheduled

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test (BI)

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in October 2020. As per Schedule K, If the value exceeds 3000 mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

9.6.2. Benkelman Beam Deflection (BBD)

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

As per the Concession Agreement (CA) BBD tests shall be conducted every year after rainy season which falls during month of October to May. Concessionaire has conducted test in November 2020. The values of deflection are within the limits as per laid down specifications. Hence overlay is not required.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.215	0.313		0.47	**0.99**
2021	0.221	0.323	1.87	0.48	**2.89**
2022	0.228	0.333	5.79	0.49	**6.84**
2023	0.235	0.343		0.51	**1.09**
2024	0.242	0.353		0.52	**1.12**
2025	0.249	0.363		0.54	**1.15**
2026	0.257	0.374		0.56	**1.19**
2027	0.264	0.385	4.53	0.57	**5.75**
2028	0.174	0.253	4.64	0.38	**5.44**
Total	**2.08**	**3.04**	**16.83**	**4.52**	**26.47**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- Construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D;
- Operation and maintenance of the Project Highway in accordance with the provisions of Concession Agreement (CA)
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this Concession Agreement (CA) and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4):

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement (CA)

Conditions precedent to be fulfilled by the Concessionaire:

Provide performance security to the Authority

- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project Highway upon termination of the Contract Agreement (CA)

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the Concession Agreement (CA).

A copy of PCOD is enclosed in **Annexure-7.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. A copy of Completion Certificate is enclosed in **Annexure-8.**

10.9 Commercial Operation Date (COD) (Clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of Scope Proposal during Construction period and consented by the Authority are given in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.

- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Lanning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance. The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.

- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly Status Reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 8.46 Crores.
As per Clause 25.2.1, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date. Total annuity nos. during the concession period are 26.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1st Annuity	1-Dec-14
2	2nd Annuity	28-May-15
3	3rd Annuity	30-Nov-15
4	4th Annuity	8-Jun-16
5	5th Annuity	22-Nov-16
6	6th Annuity	29-May-17
7	7th Annuity	17-Feb-18
8	8th Annuity	29-May-18
9	9th Annuity	29-Nov-18
10	10th Annuity	21-May-19
11	11th Annuity	20-Nov-19
12	12th Annuity	22-May-20
13	13th Annuity	18-Nov-20

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs. 1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll Fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks. The copies of Insurance are attached in **Annexure-9.**

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Policy
			From	To	
Civil Engineering Completed Risk Policy	Aspire Insurance Brokers Pvt Ltd	321300441910001988	27.3.2020	26.3.2021	Road and structure, Toll Building & Booths, Road furniture, Sign Boards
Employees Compensation Policy	HDFC ERGO General Insurance Co Ltd	3114203387691200000	19.05.2020	18.05.2021	Employees compensation
Electronic Equipment Insurance Policy Schedule	The Oriental Insurance Company Limited	171200/44/2021/37	08.09.2020	07.09.2021	EEI Equipment installed in the Project Highway

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed is 18.23%, however 5% growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities:

Toll Plaza is located at Km. 47+950 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Truck lay byes/Bus bays are in good condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at truck laybys and toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in good condition and number of sign boards are provided as per IRC SP 73-2007. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.

- Major maintenance (MM) /Periodic maintenance will be carried out in 2021 and 2028.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all time.

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+700								G		E	F	F	ULD	F	
32+000	33+000								G		E	F	F	ULD	F	
33+000	34+000								G		E	F	F	ULD	F	
34+000	35+000								G		E/E+P	F	F	LD	PF	
35+000	36+000								G		E/E+P	F	F	LD	PF	
36+000	37+000								G		E	F	F	ULD	PF	
37+000	38+000								G		E	F	F	ULD	PF	
38+000	39+000								G		E	F	F	ULD	F	
39+000	40+000								G		E	F	F	ULD	F	
40+000	41+000								G		E	F	F	ULD	PF	
41+000	42+000								G		E	F	F	ULD	F	
42+000	43+000								G		E	F	F	ULD	F	
43+000	44+000								G		E	F	F	ULD	PF	
44+000	45+000								G		E	F	F	ULD	F	
45+000	46+000								G		E	F	F	ULD	F	
46+000	47+000								G		E	F	F	ULD	F	
47+000	48+000								G		E	F	F	ULD	F	
48+000	49+000								G		E	F	F	ULD	F	
49+000	50+000								G		E	F	F	ULD	F	
50+000	51+000								G		E	F	F	ULD	PF	
51+000	52+000								G		E	F	F	ULD	PF	
52+000	53+000								G		E	F	F	ULD	PF	
53+000	54+000								G		E	F	F	ULD	PF	
54+000	55+000								G		E/E+P	F	F	LD	PF	
55+000	56+000								G		E/E+P	F	F	LD	PF	
56+000	57+000								G		E	F	F	ULD	F	
57+000	58+000								G		E	F	F	ULD	F	
58+000	59+000								G		E	F	F	ULD	PF	
59+000	60+000								G		E	F	F	ULD	F	
60+000	61+000								G		E	F	F	ULD	F	
61+000	62+000								G		E	F	F	ULD	PF	
62+000	63+000								G		E	F	F	ULD	F	
63+000	64+000								G		E	F	F	ULD	F	
64+000	65+000								G		E	F	F	ULD	F	
65+000	66+000								G		E	F	F	ULD	PF	
66+000	67+000								G		E	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
67+000	68+000								G		E/E+P	F	F	LD	PF	
68+000	69+000								G		E/E+P	F	F	LD	F	
69+000	70+000								G		E/E+P	F	F	LD	PF	
70+000	71+000								G		E	F	F	ULD	F	
71+000	72+000								G		E	F	F	ULD	PF	
72+000	73+000								G		E	F	F	ULD	F	
73+000	74+000								G		E	F	F	ULD	F	
74+000	75+000								G		E	F	F	ULD	F	
75+000	76+000								G		E	F	F	ULD	PF	
76+000	77+000								G		E	F	F	ULD	F	
77+000	78+000								G		E	F	F	ULD	PF	
78+000	79+000								G		E	F	F	ULD	F	
79+000	80+000								G		E	F	F	ULD	PF	
80+000	81+000								G		E	F	F	ULD	F	
81+000	82+000								G		E	F	F	ULD	F	
82+000	83+000								G		E	F	F	ULD	PF	
83+000	84+000								G		E	F	F	ULD	F	
84+000	85+000								G		E	F	F	ULD	F	
85+000	86+000								G		E/E+P	F	F	LD	PF	
86+000	87+000								G		E/E+P	F	F	LD	PF	

Annexure 2 : Condition of Bridges

S. No.	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching	Toe wall	Aprons
1	Km. 0+274	Major Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
2	Km. 6+000	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
3	Km. 16+950	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
4	Km. 21+600	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
5	Km. 30+900	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
6	Km. 42+600	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
7	Km. 48+787	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
8	Km. 59+013	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
9	Km. 69+000	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
10	Km. 69+779	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
11	Km. 80+100	Minor Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair
12	Km. 82+263	Major Bridge	Good	Good	Fair	Good	Fair	Good	Good	Fair	Fair	Fair

Annexure 3: Condition of Box/Slab/Pipe culverts
Condition of Box/Slab culverts

S. No	Chainage (Km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet Wall
1	35+200	Good	Good	Fair	Fair	Fair	Fair
2	35+200	Good	Good	Fair	Fair	Fair	Fair
3	36+100	Good	Good	Fair	Fair	Fair	Fair
4	36+800	Good	Good	Fair	Fair	Fair	Fair
5	48+800	Good	Good	Fair	Fair	Fair	Fair
6	54+700	Good	Good	Fair	Fair	Fair	Fair
7	59+400	Good	Good	Fair	Fair	Fair	Fair
8	59+800	Good	Good	Fair	Fair	Fair	Fair
9	60+700	Good	Good	Fair	Fair	Fair	Fair
10	61+100	Good	Good	Fair	Fair	Fair	Fair
11	61+200	Good	Good	Fair	Fair	Fair	Fair
12	62+000	Good	Good	Fair	Fair	Fair	Fair
13	62+400	Good	Good	Fair	Fair	Fair	Fair
14	65+900	Good	Good	Fair	Fair	Fair	Fair
15	66+600	Good	Good	Fair	Fair	Fair	Fair
16	69+100	Good	Good	Fair	Fair	Fair	Fair
17	71+500	Good	Good	Fair	Fair	Fair	Fair
18	71+900	Good	Good	Fair	Fair	Fair	Fair
19	72+500	Good	Good	Fair	Fair	Fair	Fair
20	74+800	Good	Good	Fair	Fair	Fair	Fair
21	80+191	Good	Good	Fair	Fair	Fair	Fair
22	81+443	Good	Good	Fair	Fair	Fair	Fair
23	82+600	Good	Good	Fair	Fair	Fair	Fair
24	86+200	Good	Good	Fair	Fair	Fair	Fair
25	86+400	Good	Good	Fair	Fair	Fair	Fair
26	86+500	Good	Good	Fair	Fair	Fair	Fair
27	86+800	Good	Good	Fair	Fair	Fair	Fair
28	87+200	Good	Good	Fair	Fair	Fair	Fair
29	87+400	Good	Good	Fair	Fair	Fair	Fair
30	88+700	Good	Good	Fair	Fair	Fair	Fair

Condition of Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Protection works	Toe wall
1	0+200	Good	Good	Fair	Fair
2	0+500	Good	Good	Fair	Fair
3	0+900	Good	Good	Fair	Fair
4	1+350	Good	Good	Fair	Fair
5	34+300	Good	Good	Fair	Fair
6	34+800	Good	Good	Fair	Fair
7	38+500	Good	Good	Fair	Fair
8	41+500	Good	Good	Fair	Fair
9	44+800	Good	Good	Fair	Fair
10	46+500	Good	Good	Fair	Fair
11	49+800	Good	Good	Fair	Fair
12	49+800	Good	Good	Fair	Fair
13	50+500	Good	Good	Fair	Fair
14	50+800	Good	Good	Fair	Fair
15	51+900	Good	Good	Fair	Fair
16	52+500	Good	Good	Fair	Fair
17	52+700	Good	Good	Fair	Fair
18	55+500	Good	Good	Fair	Fair
19	56+200	Good	Good	Fair	Fair
20	56+500	Good	Good	Fair	Fair
21	56+800	Good	Good	Fair	Fair
22	57+400	Good	Good	Fair	Fair
23	58+100	Good	Good	Fair	Fair
24	58+200	Good	Good	Fair	Fair
25	58+500	Good	Good	Fair	Fair
26	58+900	Good	Good	Fair	Fair
27	59+200	Good	Good	Fair	Fair
28	59+600	Good	Good	Fair	Fair
29	60+200	Good	Good	Fair	Fair
30	60+400	Good	Good	Fair	Fair
31	60+900	Good	Good	Fair	Fair
32	63+700	Good	Good	Fair	Fair
33	72+900	Good	Good	Fair	Fair
34	73+200	Good	Good	Fair	Fair
35	73+500	Good	Good	Fair	Fair
36	73+900	Good	Good	Fair	Fair
37	74+300	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Protection works	Toe wall
38	76+100	Good	Good	Fair	Fair
39	76+900	Good	Good	Fair	Fair
40	77+500	Good	Good	Fair	Fair
41	83+100	Good	Good	Fair	Fair
42	83+600	Good	Good	Fair	Fair
43	84+400	Good	Good	Fair	Fair
44	84+400	Good	Good	Fair	Fair
45	84+900	Good	Good	Fair	Fair
46	84+900	Good	Good	Fair	Fair
47	85+200	Good	Good	Fair	Fair
48	34+823	Good	Good	Fair	Fair
49	37+146	Good	Good	Fair	Fair
50	57+735	Good	Good	Fair	Fair
51	57+827	Good	Good	Fair	Fair
52	57+906	Good	Good	Fair	Fair
53	58+187	Good	Good	Fair	Fair
54	58+390	Good	Good	Fair	Fair
55	58+773	Good	Good	Fair	Fair
56	59+130	Good	Good	Fair	Fair
57	59+220	Good	Good	Fair	Fair
58	65+173	Good	Good	Fair	Fair
59	66+819	Good	Good	Fair	Fair
60	67+500	Good	Good	Fair	Fair
61	68+079	Good	Good	Fair	Fair
62	68+327	Good	Good	Fair	Fair
63	68+586	Good	Good	Fair	Fair
64	68+767	Good	Good	Fair	Fair
65	69+343	Good	Good	Fair	Fair
66	69+913	Good	Good	Fair	Fair
67	71+989	Good	Good	Fair	Fair
68	72+343	Good	Good	Fair	Fair
69	72+486	Good	Good	Fair	Fair
70	72+676	Good	Good	Fair	Fair
71	72+741	Good	Good	Fair	Fair
72	72+817	Good	Good	Fair	Fair
73	72+931	Good	Good	Fair	Fair
74	73+051	Good	Good	Fair	Fair
75	73+302	Good	Good	Fair	Fair

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Protection works	Toe wall
76	73+394	Good	Good	Fair	Fair
77	73+625	Good	Good	Fair	Fair
78	73+734	Good	Good	Fair	Fair
79	73+827	Good	Good	Fair	Fair
80	74+114	Good	Good	Fair	Fair
81	74+635	Good	Good	Fair	Fair
82	74+903	Good	Good	Fair	Fair
83	74+990	Good	Good	Fair	Fair
84	75+313	Good	Good	Fair	Fair
85	75+403	Good	Good	Fair	Fair
86	75+500	Good	Good	Fair	Fair
87	77+675	Good	Good	Fair	Fair
88	78+063	Good	Good	Fair	Fair
89	79+799	Good	Good	Fair	Fair
90	80+992	Good	Good	Fair	Fair
91	81+582	Good	Good	Fair	Fair
92	84+616	Good	Good	Fair	Fair

Annexure 4: Toll Revenue Calculations

Toll Plaza-I:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km.47.950
Car/Taxi/Van	234
LCV	61
Bus	12
Truck	37
MAV	248

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99%	1%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates :**

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km. 47+950
Car/Taxi/Van	30
LCV	75
Bus	155
Truck	190
MAV	375

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	2535570	59101	1657200	681360	2563085	33707815	41204131	412.041	412.041
2020-21	2662349	65935	1856064	733320	2796680	36915076	45029423	450.294	862.336
2021-22	2795466	69231	1948867	818110	3087105	40251630	48970410	489.704	1352.040
2022-23	3424446	76969	2174205	884281	3320520	43829553	53709974	537.100	1889.139
2023-24	3595668	85307	2282915	955023	3652572	47664639	58236125	582.361	2471.501
2024-25	3775451	89573	2538065	1030629	3922364	51773660	63129742	631.297	3102.798
2025-26	3964224	99001	2813022	1140656	4301526	56174421	68492850	684.928	3787.727
2026-27	4757069	103951	2953673	1228399	4612700	60885824	74541616	745.416	4533.143
2027-28	4994922	114606	3264586	1322064	5045141	65927931	51495713	514.957	5048.100

Annexure 5: O & M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	55.6	12	4	350	934,080	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km	3.8	24	4	350	127,680	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km	3.8	52	1	1939	383,146	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Km	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	3.8	12	0	21000	-	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km	27.8	2	5	350	97,300	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	122	2	2	650	317,200	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	55.6	4	1	350	77,840	02 nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	7	6	1	350	14,700	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	2.00	6	15	350	63,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos	10	2	2	350	14,000	02 nos of Labour for removal of vegetation/Structure
								2,028,946	

1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	1.2	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	1.2	12	0	12000	720	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	1.2	12	0	2500	2,400	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1		-	
9	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								78,120	

1	Patrolling vehicle	Monthly	Nos	12			150000	0	(1500000 is the cost of vehicle, considering 10% Rental per year) including maintenance

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
2	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Tow away trucks and Crane	Monthly	Nos	12		1	20000	20000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								42,000	
								2,149,066.00	

Incidental cost for 1 year

	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	4368	516	22,53,888	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	295	168	49,560	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	834	225	5,62,950	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considerd 500 nos)
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	55.6	4	14	2250	1,26,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	5895	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and	Yearly	Rmt.	0		0	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)

	Technical Specifications and as directed by the Engineer.								
	Total amount for 1 Year							**31,34,398**	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 2,976,000
2	Fuel for Generator & Vehicles	₹ 1,236,000
3	Electricity	₹ 330,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 30,080
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 4,657,080**

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	-	14.00		-	14.00	
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic	Cum	-	7,480.00		-	7,480.00	

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC - 111 and IRC 37.							
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	5,171.25	6,800.00	3,51,64,500	5,171.25	6,800.00	3,51,64,500
4	Providing Micro surfacing	Sqm	2,03,350.00	160.00	3,25,36,000	2,03,350.00	160.00	3,25,36,000
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00			250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**6,77,00,500**			**6,77,00,500**
	Chapter 9 Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of cement concrete kerb without channel (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - Consider 5% for construction period.	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	13,236.67	516.00	68,30,120	13,236.67	516.00	68,30,120
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total Chapter 9			**-**	**68,30,120**		**-**	**68,30,120**
	Grand Total				**7,45,30,620**			**7,45,30,620**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/U-N-S-K/2012/ 5797
Bhopal, dated 08 August,2012

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal
Fax: 4247574

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Uchera-Nagod-Singhpur-Kalinjer (SH-56) Road on BOT (Toll + Annuity)basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Uchera-Nagod-Singhpur-Kalinjer (SH-56) Road on BOT (Toll + Annuity) basis.** In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **₹ 8,46,00,000.00 (Rupees eight crores forty six lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA**

(Arun Paliwal)
Dy. General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

REDECON (INDIA) PRIVATE LIMITED
A MULTI-DISCIPLINARY CONSULTANCY AND CONSTRUCTION MANAGEMENT ORGANISATION
Registered Office : H-54 A, Kalkaji, New Delhi - 110 019 (India) Fax : 91-11-26239888
Tel. : 41605600, 41605601, 41605602 E-mail : redecon1@rediffmail.com www.redeconindia.com

Project Office: - Duplex No. 2 Sunny Residency, Mathura Vihar, Near Ghadi Chowk, Vijay Nagar, Jabalpur
Phone:-0761- 4040854, Email: - redeconjabalpur@gmail.com

Letter no: -MPRDC /IE/MP/45/2014 Date: - 15.05.2014

To,

The Project Manager
M/S DBL Nagod Kalinjer Tollways Limited
Site Office 52 mile stone village Maihtain
Block – Nagod, Dist – Satna (M.P.) Nagod Kalinjer
Road 45 km on Satna (M.P.)

Project: Development of Uchera-nagod-kalinjer (SH-56) on BOT (Toll+Annuity) ***Basis*** *road section km* ***32+000 to 85+803***

Subj.:- ***Issue of Provisional Certificate of above road project section km 32+000 to 85+803***

Ref:- Your letter no. DBL/IE/2014/108 on dated 14.04.2014

Dear Sir,

As per Concession Agreement dated 24th September 2012 Article 14 Clause 14.3 read in Conjunction with Schedule 'J' the **Provisional Certificate** of Section km 32+000 to 85+803 is Forwarded as Appendix –A with Punch List as Appendix-B for your information and necessary Action please.

REDECON (INDIA) PVT. LTD.

Your's

R. D. Dohare
Team Leader
15. 5. 2014

R.D.DOHARE
Team Leader
Redecon (India) Private Limited

Encl: **1. Provisional Certificate Appendix-A**
2. Punch List Appendix-B

Copy To: 1. Chief Engineer (BOT), MPRDC, Bhopal.
2. General Manager (North), MPRDC, Jabalpur.
3. Divisional Manager, MPRDC, Rewa (Division-1)

Annexure 8: Completion Certificate

REDECON (INDIA) PRIVATE LIMITED
A MULTI-DISCIPLINARY CONSULTANCY AND CONSTRUCTION MANAGEMENT ORGANISATION
Registered Office : H-54A, Kalkaji, New Delhi - 110 019 (India) Fax : 91-11-26239888
Tel. : 41605600, 41605601, 41605602 E-mail : redecon1@rediffmail.com www.redeconindia.com

Project Office: - Duplex No. 2 Sunny Residency, Mathura Vihar, Near Ghadi Chowk, Vijay Nagar, Jabalpur
Phone:-0761- 4040854, Email: - redeconjabalpur@gmail.com

Letter no: -MPRDC /IE/MP/72/2014 Date: - 05.08.2014

To

The Project Manager
M/S DBL Nagod Kalinjer Tollways Limited
Site Office 52 Mile Stone Village Maihtain
Nagod, Dist- Satna(M.P) Nagod Kalinjer
Road 45 Km On satna (M.P)

Project : Development of Uchera- Nagod-Kalinjer (SH-56) On BOT (Toll+Annuity) Basis
road Section Km. 32+000 to 85+803

Sub: - Issue of Completion Certificate of above road project section km. 32+000 to 85+803

Ref:- (1) Your Letter No. – MPRDC/IE/MP/45/2014
(2) Our Letter No. – DBL/MPRDC/UNK/2014/124
(3) Our Letter No. – DBL/IE/UNK/2014/127

Dear Sir,

With reference to above letter, I the I.E, Redecon (India) Private Limited carried out the Joint Visit of project in presence of MPRDC and concessionaire on dated 04/08/2014

We are all satisfied with the completed balance work of "Punch List" and final certificate may be Issued.

R.D. DOHARE

TEAM LEADER 05.8.2014
REDECON (INDIA) PRIVATE LIMITED

R.D. DOHARE
TEAM LEADER
REDECON INDIA PVT. LTD
JABALPUR

Enclosed:-

1. COMPLIETION CERTIFICATE
2. STATUS OF PUNCH LIST

COPY TO:-

1. THE CHIEF ENGINEER (BOT + TOLL) MPRDC LTD. BHOPAL
2. THE GENERAL MANAGER (NORTH) MPRDC, JABALPUR
3. THE DIVISIONAL MANAGER MPRDC REWA DIVISION 1ST

Annexure 9: Insurance

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001988

जारीकरण कार्यालय/Issuing Office
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23, Madhya Pradesh
GSTIN: 23AAACN9967F1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355
बिक्रय चैनल कोड/Sales Channel Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL UCHERA NAGOD TOLLWAYS LTD
पता/ Address: PLOT NO 5, INSIDE GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, KOLAR ROAD, BHOPAL, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881839
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAECD3779L

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य राष्ट्रीय प्रशासी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 9,93,322.00	कवर नोट संख्या और तिथि / Cover Note Number and Date	NA
CGST	₹ 89,309.00		
SGST/UTGST	₹ 89,309.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/ Proposal Number and Date	8800200327086667 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/ Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 11,72,120.00	पछिली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Eleven Lakh Seventy Two Thousand One Hundred Twenty Only.)
Location:Uchera-Nagod-Singhpur-Kalinjer (SH-56) Road, Madhya Pradesh Satna, Satna, 485001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic	Zone IV	92,34,45,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	6,96,55,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable:Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:

Printed on 27/03/2020 by ID: 75159

Page no: 1

INSURANCE

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL UCHERA NAGOD TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203387691200000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203387691200000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203387691200000 **Employees Compensation Insurance**

Insured Name	DBL UCHERA NAGOD TOLLWAYS LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	13/05/2020

Period of Insurance	From Date & Time	19/05/2020 00:01 AM	To Date & Time	18/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203387691200000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:00:26 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/37**	**Prev Policy No**	:
Cover Note No	: ER1700203535	Cover Note Dt	: 08/09/2020
Insured's Code	: 114390109	Issuing Office Code	: 171200
Insured's Name	: DBL Uchera Nagod Tollways Ltd (GSTIN: 23AAECD3779L1ZC)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL462016@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_INDCSH 3214000845 - 17/09/2020 GST INVOICE NO :2419487404 UIN :0

Gross Premium : 1,252 GST : 225 Stamp Duty : 1 Total : 1,477

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 27,79,478

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Uchera to Nagod

MADHYA PRADESH - 485001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		27,79,478

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 2

Attached to and forming part of policy number 171200/44/2021/37

Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:08:26 I
Location: NOIDA
Reason: Signing Policy for OICL

2) Winchester Drive and/or Hard Disc-25% of claim amount subject to a minimum of Rs.10,000/-

In case of computers, the term 'equipment' shall include the entire computer system comprising of CPU, Key boards, Monitors, Printers, Stabilizers, UPS.

SCHEDULE OF PREMIUM

Cover Description	Premium
TOTAL PREMIUM	1,252
ADD :IGST	225
STAMP DUTY	1
TOTAL AMOUNT	1,477

Total Sum Insured In Words : Indian Rupees Twenty-Seven Lakhs Seventy-Nine Thousand Four Hundred Seventy-Eight Only
Total Amount Paid : Indian Rupees One Thousand Four Hundred Seventy-Seven Only

The Insurance under this policy is extended to cover risks of (as per forms attached):

STFI Inclusion Cover
EAR - EARTHQUAKE COVER

Excess / Deductible :
The following minimum deductibles are applicable based on Sum Insured of the policy

The Insurance under this policy is subject to warranties & Clauses (as per forms attached) :
In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
Communicable Disease Exclusion Clause
Exclusion-Any Direct or indirect loss by infectious or contagious disease

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at CBU Vadodara (GSTIN: 24AAACT0627R2Z4) on 17TH DAY OF SEPTEMBER 2020

For and on behalf of
The Oriental Insurance Company Limited

Entered By : AKSHAY ASHOKRAO HIWALE
Examined By : A K Parmar

Authorised Signatory

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 2 of 2

Annexure 10: Change of Scope

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.

(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPABX), 0755-2550995, Fax : 91-755-2572643
Website : www.mprdc.nic.in

Letter no. ……/Uchehara-Nagod Road/COS/06/2013, Bhopal Date .09.2014

To,

1. **Independent Engineer,**
   Redicon (India) Pvt. Ltd.,
   H-54-a, Kalkaji,
   New Delhi

2. **Divisional Manager,**
   M.P.R.D.C., Div.-1,
   Rewa (M.P.)

Sub. :- Approval of variation/Change of Scope for Uchehara-Nagod Road Road on BOT (Toll+Annuity) basis.

Ref. :- Your letter no. MPRDC/IE/MP/3014/2013, Date 26.09.2013.

Please find enclosed herewith the copy of the minutes of the meeting, for Change of Scope held on 15.10.2013. In-principle approval is granted accordingly for Change of Scope for the said project. You are hereby advised to send the financial implication &valuation of negative and positive variation on the basis of as built drawings and actual work done on site to this office within 15 days time positively.

Encl. :- As above.

— Sd. —
Chief Engineer (BOT)
MPRDC, Bhopal

Endt. no. 7590 ……/Uchehara-Nagod Road/COS/06/2013, Bhopal Date 23.09.2014

Copy to :-

1. Shri Arun Paliwal, General Manager (Finance), MPRDC, Bhopal for information and necessary action please.
2. General Manager (North), MPRDC, Jabalpur for information and necessary action please.
3. Shri Dilip Singh Bhadoria, Concessionaire Representative M/s DBL Uchehara-Nagod Tollways Pvt. Ltd., for information and necessary action please.

Chief Engineer (BOT)
MPRDC, Bhopal

Connecting People Through quality infrastructure

फाईल क्रमांक Uchera-Nagod/change of scope/06/2013 विषय Variation proposal in structure पृष्ठ क्रमांक
File No. Subject Page No. (3)

Santhanjya - Pls put up draft for meeting for 11/10/2013 as instructed

7/10

Mr. Sonal

Calling for meeting on 11/10/13
Draft for approval pls.

7/10/13

DGM(MHDP)

put up with fair

7/10

Mr. Sonal

fair for sign pls.

7/10/13

DGM(MHDP)

GM(BOT)

7/10

DGM(R) Sonal

7/10

7/10/13

Concessionaire representative & IE's representative are present on today 15/10/13. The meeting outcome are minutes & place below for further need full plan

15/10

GM(BOT)

N. 8812-19
Dt 07-10-13

MPRDC

फाईल क्रमांक Change of Scope File विषय Minutes of Meeting. पृष्ठ क्रमांक
File No. Subject Page No.

MINUTES OF MEETING AT MPRDC BHOPAL

Regarding Change of Scope of Uchehra–Nagod–Singhpur-Kalinger Road.

Meeting of Advisory committee of MPRDC has been conducted in the office of the MPRDC on dated 15.10.2013 for consideration of change of scope for Rehabilitation and Strengthening of **Uchera-Nagod-Singhpur-Kalinger road** on BOT basis, in view of the letter submitted by the Team Leader of Independent Engineer of the project vide letter no. MPRDC/IE/MP/3014/2013, dated 26-09-2013.

Following officials were present in the meeting :-

1. Shri . A.S. Chendke, (Technical Advisor) MPRDC
2. Shri Anil Chansoria (Chief Enginer)(BOT) MPRDC.
3. Shri Arun Paliwal, GM (Finance), MPRDC Bhopal.
4. Shri P.K. Chaturvedi, GM (BOT), MPRDC, Bhopal.
5. Divisional Manger, MPRDC Rewa Division-1
6. ~~Shri~~ R. K. Das a, Authorized Representative of Independent Engineer M/s Redecon India Pvt. Ltd. (Vide letter no. MPRDC/IE/MP/2424/48-49 dated 14/10/2013)
7. Shri. Dilip Singh Bhadoria, Authorized Representative & Project Manager M/s DBL Uhera Nagod Tollway Ltd.

The change of scope recommended by Independent Engineer vide letter above, has been discussed by the committee & recommendations on each point of Change of Scope are recorded and enclosed herewith on subsequent page no. 1 to 18.

In principle approval under change of scope is recommended for above works as per remarks of last column. Further, it is instructed to Independent Engineer and Concessionaire to prepare complete ~~as~~ designs, drawings & financial implication and submit within 15 days time positively.

Dilip Singh Bhadoria Authorized Representative & Project Manager M/s DBL Uhera Nagod Tollway Ltd	R. K. Das Authorized Representative, M/s Redecon India Pvt. Ltd.	**Arun Paliwal** GM (F) MPRDC, Bhopal	**P.K. Chaturvedi** GM (BOT) MPRDC, Bhopal
Divisional Manager Dn. No. – 1 MPRDC, Rewa	**Anil Chansoria** Chief Engineer (BOT) MPRDC, Bhopal	**A.S. Chendke** Technical Advisor MPRDC, Bhopal	

MPRDC

4/①

Change of scope proposal

DEVELOPMENT OF UCHERA-NAGOD- KALINJER (SH-56) FROM 31+361 TO 85+803 KM ON BOT(TOLL+ANNUITY)BASIS FOR THE STATE OF MADHYA PRADESH

CLIENT : Madhya Pradesh Road Development Corporation LTD

CONCESSIONAIRE:-	DEL NAGOD- KALINJAR TOLLWAYS LTD
NDEPENDENT ENGINEER :-	REDCON (INDIA)PVT. LTD
EPC CONTRACTOR :-	DILIP BUILDCON LTD.

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
1	Development of Existing Road Near Nagod Town of The Nagod Kalijer Road From Km 0+000 to Km 1+200 in Four lane configuration		NIL	NIL	During visit of chief engineer(MPRDC) on dated 11.05.2013 It was decided toreconstruct old Nagod kalinjer road to four lane Configuration As per IRC-SP-73 (FIG-2.2) The road starts (Nagod) from the existing junction of NH-75 & ends at bypass towards kalinjer side. which have approximate length 1200 RM and meets at chainage 33+170. The Entire work listed above is extra and beyond the present scope of works as per the CA. This work shall be treated as a +ve change of scope of works	Site inspection carried out by us and observed that Kalinjer road is bypassed Nagod city from chainage 31+470 on NH-75 and meets at chainage 33+170 on kalinjer bypass. NH-75 is crossing through Nagod city and old existing four lane road starts from the junction to kalinjer & meets at bypass road on chainge 33+170 The old existing four lane road is in deteriated condition and needs to reconstruct in 1200 RMT however 284 m length under rigid pavement which may be treated as DLC and may be constructed as rigid pavement. It is proposed and recommended to reconstruct four lane in the length of 1200mtr as per (IRC-SP-73 (FIG-2.2)). The concessionaire has also proposed the same and refered the verbal instruction of chief engineer MPRDC of dated 11.05.2013 Since the proposed work is out of scope of aggreement, (It is not mentioned in schedule B) this work shall be treated as a change of scope work (positive variation). The actual cost shall be worked out by the concessionaire under positive change of scope.	Reasons & recommendation of IE is accepted for reconstruction of 1200mtr Four Lane road in a manner described by him as per IRC-SP-73 (FIG-2.2) under Positive Change of Scope as additional work. This will not form part of the project length Actual financial implication may be worked out.
2			No Provision	No Provision in schedule B	One Major bridge is proposed for construction at Uchera by pass as per instruction of C.E MPRDC vide letter No. 3319 Uchehra Nagod Kalinjer project 01/2012 Bhopal 18.06.2013 under positive change of scope.	With reference to letter of MPRDC Bhopal dated 18.06.2013 one Major bridge under positive change of scope is proposed and recommended for construction as per site requirement based on design approved as per hydraulic and technical requirement Actual cost of structure accordigly be worked out.	IE's recommendation is accepted for proposal to construct one Major bridge, under Positive change of scope Actual financial implication may be worked out accordingly.
3	6+000	6+000	Type of Structure-causeway No of span-01 Span length-20m C.W-5.00 mtr Over all width-5.6 mtr Condition of structure- super structure -poor sub structure -poor	Detail of proposed structure Reconstruction of minor bridge (3x10) mtr in 12 mtr width	Existing structure Causeway is having 2 no. span of 2 mt. The structure found in good condition having carriageway width 7.8 mtr. and over all width 8.4 mtr. This stretch of road does not fall in project length. In schedule B it is proposed to reconstruct Minor bridge(3X10) mtr. in 12 mtr. width. But the condition of structure is sound and safe and hence may be retained as per IRC- SP-73 & MPRDC letter no.3319 U-N-K 01/2011 Bhopal 18.06.2013	Inspection of existing structure carried out by us and observed as follows (1) Existing stone masonary arch structure measured as 2 no. span of 2 mtr in good condition Existing carriageway width and overall width of structure measured 7.8 mtr and 8.4 mtr respectively. (2)In schedule A the condition of structure shown poor, in schedule B it is proposed to reconstruct Minor bridge (3X10)mtr in width of 12 mtr. (3) But the stone masonary arch structure found in good condition and safe for traffic movement hence it is proposed and recommended to retain the structure. and proposed reconstruction of minor bridge (3X10) mtr in 12 mtr width as per schedule B shall be under change of scope of Negative variation. Actual financial implication shall be worked out by concessionaire.	Reasons & recommendation of IE is accepted for retaining of the existing structure proposal of Minor bridge (3X10) mtr in 12 mtr width as per schedule B is taken as Negative change of scope, Financial implication may be worked out.

DEL UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

HDE

Team Leader
Redecon (I) Pvt. Ltd.

Divisional Manager
M.P.R.D.C Ltd.
Dn. No. 1, Rewa

CE(BOT)

15/10/13
GM(BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSEDBY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
4	21+600		**Type of Structure- Stone Arch** No of span-05 Span length-7.5m C.W-5.00 mtr Over all width-6.0 mtr Condition of structure- super structure -fair sub structure - fair	**Detail of proposed structure** widening 5 x 7.5 mtr in 12 mtr width	Structure is stone arch bridgeas mentioned in schedule A. Existing bridge is in good condition having carrige way width 7.0 mtr. and overall width 8.4 mtr. In schedule B it is proposed to widen the Structure (5x7.5m) minor bridge in 12 mtr. width. Over all condition of bridge insound and safe hence may be retained as per clause IRC-73 and MPRDC vide letter no.3319 U-N-K 01/2012 Bhopal 18.06.2013	Inspection of existing structure carried out by us and observed as follows (1) The measurement of structure found as mentioned in schedule A & schedule B (2)In schedule B it is proposed to widen in 12 mtr width (3) The condition of bridge is found sound and safe for traffic movement (4) Therefore considering the overall condition of bridge, which is in good condition and safe for traffic, it is proposed and recommended to retain under Negative change of scope. (a) Existing structure may be retained & proposed widening of Minor bridge (5X7.5) mtr in 12 mtr width as per schedule B shall be under change of scope of Negative variation. Whose financial implication shall be worked out by	Reasons & recommendation of IE for retaining of this structure proposed in schedule B to be taken as negative change of scope is accepted Financial implication may be worked out.
5	30+900	30+900	**Type of Structure- Stone arch** No of span-03 Span length-7m C.W-5.00 mtr Over all width-6 mtr Condition of structure- super structure -fair sub structure -fair	Detail of proposed structure Proposed - widening in 12 mtr. width With span of (1X17) mtr	Existing structure is an arch bridge having 3 no. span of 6.5 mtr. The carriage width is 7.0 mtr.and over all width of structure is 8.4 mtr. It is mentioned in schedule B to widen Minor bridge (1x17) mtr. in 12 mtr width. Over all condition of bridge k sound and safe hence may be retained as per clause IRC-73 and MPRDC vide letter no.3319 U-N-K 01/2012 Bhopal 18.06.2013	Inspection of existing structure carried out by us and observed as follows (1) 3 no. of span 6.5 mtr have been found (2) The measurement of carriageway width and overall width of structure found 7.0 mtr 8.4 mtr respectively (3) In schedule B it is proposed to widen Minor bridge (1X17)mtr in 12 mtr width. (4) The condition of bridge is found sound and safe for traffic movement (5) Considering the overall condition of bridge which is in good condition and safe for traffic, it is proposed and recommended as follows (a)Existing structure may be retained & proposed widening of Minor bridge (1X17) mtr in 12 mtr width as per schedule B shall be under change of scope of Negative variation. Financial implication shall be worked out by concessionaire.	Reasons & recommendation of IE is accepted for retaining of this structure proposed in schedule B as negative change of scope, Financial implication may be worked out.
6	35+200	33+170	Type of Structure-Slab No of span-01 Span length-3mtr C.W-6.5 mtr Over all width-8.4 mtr Condition of structure- slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of Structure Slab Culvert Proposed- widening in 12 mtr. width	During inventory it is found (1X3) slab is poor condition. Length -7.5mtr., Width/Span-3mtr. Height - 1.95mtr of existing structure (1) It is proposed to widen the structure in schedule B Existing road is changing in to four lane therefore it is required to be reconstructed (1X3X3.4) box culvert according to four lane standard. Hence it is proposed to reconstruct (1X3X3.4) box culvert of four lane standard	Site inspection at this location carried out by us. Agreed with the comments of concessionaire. Observing the above condition it is proposed & recommended to reconstruct structure to four lane standards as follows. (a) Proposed Structure in schedule B shall be under change of scope of Negative variation. (b) Proposed and recommended to re-construct structure of box (1X3X3.4) of four lane standards shall be under change of positive variation. (c) Net cost in variation shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening of slab culvert in 12 mtr. width proposed in schedule B taken as negative variation and construction of four lane standard structure as positive variation. Net Financial implication may be worked out accordingly
7		33+160 (ON BYPASS)	**Not Mentioned in schedule A**	**No Provision in scheduled B**	During site inventory it is found bypass road is adjacent to existing road, crossing obliquely The same Nallah which is on existing road is crossing through bypass. So it is needed to construct a New structure(1x3) Box culvert as the foundation condition dictating of two lane standards in down stream of Nallah. Width of structure shall be more than 12 mtr. being on the oblique road and may be decided as per site requirement. Therefore it proposed to construct New box culvert (1X332.8)mtr at this location	Site inspection at bypass road at this chainage carried out by us. Agreed with the comments of concessionaire Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to construct a New box culvert (1X332.8)mtr in 12 mtr width, at this chainagas follows. (a) structure proposed for New construction shall be under change of scope of positive variation Actual cost of structure shall be worked out by concessionaire for financial implication. 0	Reasons & recommendation of IE is accepted for New construction of (1X332.8)mtr Box culvert in 12 mtr width, under positive change of scope. Actual financial implication may be worked out accordingly.

HDE

Team Leader
Redecon (I) Pvt. Ltd.

Divisional Manager
MPRDC Ltd.
Dn. No. 1, Rewa

EE(BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
8	36+100	34+173	**Type of Structure-Slab** No of span-01 Span length-2mtr C.W-6.5 mtr Over all width-8.4 mtr **Condition of structure-** slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of structure- RCC culvert proposed- widening up to-12.0 mtr width	During inventory existing structure stone slab (1X1.6) is found in very poor condition at site. Length -8.2mtr , Width/Span -1.6mtr , Height - 1.95mtr of existing structure. In schedule B it is proposed to widen the structure to 12mtr width. Since the condition of structure is not good and unsafe for traffic hence it is proposed to re-construct (1X2X4.5)mtr box culvert having 12 mtr width as the foundation condition dictating.	Inspection of Existing structure carried out by us Agreed with the comments of concessionaire Therefore it is proposed and recommended to reconstruct (1x2) Box culvert in width of 12 mtr. at this location as follows (a) In schedule B proposed widening in 12 mtr. width of structure shall be under change of scope of Negative variation (b) proposed and recommended box culvert (1x2X4.5)mtr in 12 mtr width shall be under change of scope of positive variation (c)Net cost in variation shall be worked out by the concessionaire for financial implication The work is under progress .	Reasons & recommendation of IE is accepted for widening existing RCC culvert to 12mtr width proposed in schedule B is taken as negative variation and reconstruction of (1X2X4.5) Box culvert in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
9	36+800	34+823	**Type of Structure Slab** No of span-01 Span length-3mtr C.W-7 mtr Over all width-8.4 mtr **Condition of structure-** slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of structure(1X3) RCC slab culvert Proposed-Widening up to-12.0 mtr width	During inventory existing structure is found H.P.C (2X1.9) in very poor condition. The detail of existing structure is given below. Length -2.5mtr , 2 row Dia 0.9mtr In schedule B there is a provision to be widened (1X 3) slab in width of 12 mtr. Local enquiry of people at this location considered, which reveals water overtops. Therefore larger cross sectional area is provided to over come this. Hence it is proposed to reconstruct (3X1.2)HPC in width of 12 mtr.	Inspection of Existing structure carried out by us Agreed with the comments of concessionaire. Therefore it is proposed and recommended to reconstruct (3X1.2) HPC in the width of 12 mtr at this location as follows (a) In schedule B proposed widening structure in the width of 12 mtr shall be under change of scope of Negative variation (b) proposed structure (3X1.2)HPC shall be under change of positive variation. (c) Net cost in variation shall be worked out by the concessionaire for financial implication. The work is under progress.	Reasons & recommendation of IE is accepted for widening of RCC slab to 12mtr width proposed in schedule B taken as negative variation and proposed construction of 3 rows HPC 1.2 mtr. Dia of pipe to 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
10	Extra	37+146	NIL	No provision in schedule B	During inventory existing structure is found HPC (1X0.9) mtr in good condition. The detail of existing structure is given below. Length -7.5mtr , 1 row Dia 0.9mtr Since it is not proposed in schedule A & B and for the reconstruction of highway I is required to widen the structure in 12 mtr width Hence it is proposed for widening to 12 mtr. width with existing HPC of (1X0.9) mtr.	Site inspection carried out by us. Agreed with the comments of concessionaire. (1) Since it is not mentioned in schedule A hence there is no provision in schedule B Therefore it is proposed & recommended to widen the structure in 12 mtr width as per site condition. (2) Complete widening of HPC shall be under positive change of scope. Actual financial implication shall be worked out by concessionaire The work is under progress.	Reasons & recommendation of IE is accepted for widening of HPC (1X1)mtr to 12 mtr. width taken as positive variation. Actual financial implication may be work out accordingly.
11	42+600	40+724	Type of Structure- Minor Bridge No of span-03 Span length-15mtr C.W-6.7 mtr Over all width-8.3 mtr **Condition of structure-** super structure -poor sub structure -poor	Type of Structure (3X15) mtr. Minor Bridge Proposed-- Re-construction in 12 mtr. Width	As per detailed inventory (3X17) box girder bridge is existing in good condition. The carriage way width is 7.0 mtr. and over all width of structure is 8.4 mtr. In schedule B it is proposedto re-construct (3X15) mtr. minor bridge in width of 12mtr. The Existing bridge is in good condition hence may be retained. as per clause IRC-78. The retaining wall LHS kalinjar Side is required to be re-constructed in length of 40 mtr. and average height approximately 5 mtr. which is collapsed. Hence a positive variation is considerd for re-construction of retainingwall.	Site inspection carried out by us. Agreed with the comments of concessionaire. Existing Bridge found in sound condition, hence it is proposed & recommended to retain. (1)- (a) Proposed reconstruction of structure in schedule B (3 X 15) mtr. minor bridge in width of 12 mtr. with 3 no quadrant high toe wall shall be under change of scope of negative variation one No. quadrant wall shall be reconstructed (b) Actual financial implication shall be work out by concessionaire.	Reasons & recommendation of IE is accepted for retaining (3X15) minor bridge in width of 12 mtr. with 3 no. quadrant high toe wall taken as Negative variation Net financial implication may be work out accordingly.
12	44+600	42+859	**Type of Structure- HPC** No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-7.5 mtr **Condition of structure-** pipe-fair Head wall -fair Return wall-fair	Type of structure-H.P.C(1x1.00)mtr. Proposed - widening up to 12 mtr width.	During Inventory 2 row of 10 mtr. HPC, overall width 9.5mtr is found in fair condition. (1) In schedule B it is proposed to widen (1X1.0) HPC up to 12 mtr width. But at site the existing structure have 2 Row of 1.00mtr. HPC Hence due to this difference it is required to widen additional one Row from scheduled B and proposed to widen the existing HPC in 2 row of 12 mtr. width.	The site Inspection carried out by us. Agreed with the comment of concessionaire. In schedule B HPC (1x1.0)mtr is proposed to widen and in inventory2 row of 1mtr HPC found is fair condition. Due to this difference and as per site condition it is proposed with recommendation to widen (2X1) HPC up to 12 mtr width under following condition. (2) Extra one row widening shall be change of scope of positive variation. The actual cost of variation shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for additional one Row HPC width (1x1.00)mtr. to 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.

NAGOD TOLLWAY PROJECT MANAGER

HDE

Team Leader

Divisional Manager

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
13	48+800	46+868	Type of Structure-Slab No of span-01 Span length-3mtr CW-6.5 mtr Over all width-7.5 mtr Condition of structure- slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of Structure-RCC culvert(1x3)mtr. Proposed-widening up to 12 mtr width	During inventory existing structure slab culvert (1x1.8)mtr is found. in poorcondition. Details of existing structures given below Length -6.1mtr , Width/Span -1.8mtr , Height - 1.6mtr . In schedule B it is proposedto widen the structure (1X3) RCC slab culvert in 12 mtr width. Since the condition of structure is very poor hence it is proposed to re-construct box culvert (1X2X2.88)mtr. upto 12 mtr width as foundation condition dictating.Design and drawing is submitted to IE.	Inspection carried out by us. Agreed with the comments of concessionaire.Existing structure found is in deteriated condition Hence it is proposed & recommend to reconstruct (1X2X2.88)mtr Box culvert in width of 12 mtr. as follows (a) In schedule B widening of structure shall be under change of scope of Negative variation. (b) Proposed box culvert shall be under change of scope of positive variation. Net cost shall be worked out by concessionaire for financial implication	Reasons & recommendation of IE is accepted for widening of RCC culvert(1X3)mtr to 12 mtr width proposed in schedule B taken as negative variation and construction of (1X2X2.88) mtr Box Culvert up to 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
14	50+800	48+787	Type of Structure- HPC No of pipe-02 Dia of pipe-1000mm CW-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (01X1000) Proposed-- widening up to 12 mtr width	During inventory existing structure is found (2x0.6) HPC in width of 7.5 mtr in poor condition. In schedule B it is proposedto widen the structure (1X1.0) HPC in 12 mtr width. It is observed in rainy season water flows above the existing culvert and the catchment area for this culvert is quite large. The hydraulic calculation is schemetied and accordingly a minor bridge (1X10) mtr width of 12 mtr is proposed for construction. Also it is decided during site visit of CE (MPRDC) dt. 11.05.2013 Hydraulic data is given below. (1) Effecting water way = 9.32mtr (2) Afflux = 0.102mtr (3) Design discharge = 46.31 m^3/s (4) Velocity = 1.5 m/s	Inspection at this chainage is carried out by us. Agreed with the comments of concessionaire It is observed that water overtops at this culvert and also it has large catchment area. As per hydraulic calculation and also the requirement of site condition it is proposed and recommended a minor bridge (1X10) mtr in 12 mtr width as follows (a) In schedule B mentioned widening of HPC structure shall be change of scope of Negative variation. (b) Proposed minor bridge of (1X10) mtr of 12 mtr width shall be change of scope of positive variation. Net cost shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening to 12 mtr width (1X1.0) HPC proposed in schedule B taken as negative variation and construction of (1X10) mtr minor bridge up to 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
15	51+900	49+880	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm CW-6.5 mtr Over all width-8.4 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (2X1.0) mtr Proposed-- widening up to 12 mtr width	During site inventory existing structure (1X0.9) HPC in width of 7.5 mtr is found in fair condition. It is sufficient to drainout the rain water. In schedule B it is mentioned to widen (2X1.0) HPC up to 12 mtr width. There is difference in existing structure and proposal in schedule B Hence as per site condition existing structure (1X0.9) mtr HPC is proposed to widen in 12 mtr width	Site inspection carried out by us. Agreed with the comments of concessionaire since the condition of structure is good and there is no requirement of Extra one row of HPC as per site situation. Since there is diffrence between existing HPC (1X0.9), and proposed HPC (2X1.0) in schedule A & B respectively. Therefore it is proposed and recommended to widen the existing structure (1X0.9) mtr HPC in 12 mtr width as follows (a) As per mentioned in schedule B there is saving of one row HPC for widening hence it shall be under change of scope of Negative variation. (b) The actual cost of variation shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening to 12 mtr width (1X0.9) HPC proposed in schedule B taken as Negative variation. Actual financial implication may be worked out accordingly.
16	52+700	50+703	Type of Structure- HPC No of pipe-02 Dia of pipe-1000mm CW-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe-poor Head wall -poor Return wall-poor	Type of Structure- HPC(2X1.00)mtr. proposed -width Reconstruction in 12.0 mtr width	In inventory it is found (2X .8)mtr HPC overall width 6.5 mtr. In schedule B it is proposed to construct (2X1.2)mtr HPC. It is observed the existing bulbh is live because the catchment area on this location is large also a small dam is constructed on upstreamside. In rainy season water flows above the existing culvert hydrological data has also thrown the quantum of discharge which is submitted. Hence (1X8) mtr minor bridge in width of 12 mtr is proposed Also it is decided during site visit of CE (MPRDC) dt. 11.05.2013. Hydraulic data is given below. (1) Effective water way=8.03mtr (2) Afflux = 0.066mtr (3) Discharge = 43.03 m^3/s (4) Velocity = 1.84 m/s	Inspection carried out by us . Agreed with the comments of concessionaire Hydraulic data is submitted by the concessionaire (1)(i) In schedule A (2X1.0)mtr HPC is shown in fair condition. (ii) In schedule B (2X1.2)mtr HPC is proposed in 12 mtr width. Seeing the above condition and considering the hydraulic data (1X8)mtr Minor bridge in 12 mtr width is proposed and recommended to construct as follows. (i) Proposed structure In schedule B shall be change of scope of Negative variation. (ii) Proposed and recommended structure minor bridge(1X8) mtr shall be change of scope positive variation. Net cost shall be worked out by concessionaire for financial implication. The work is under progress	Reasons & recommendation of IE is accepted for reconstruction to (2x1.2)mtr HPC in 12 mtr width taken as negative variation and construction of (1x8)mtr minor bridge in width of 12 mtr as positive variation.Net financial implication may be worked out accordingly.

Team Leader
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Divisional Manager
M.P.R.D.C. Ltd.
Dn. No. Rewa

CE(BOT)

SR. NO.	EXISTING	DESIGN	EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
17	55+580	53+366	Type of Structure- HPC No of pipe-01 Dia of pipe-1000 C.W-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC(1x1.0)mtr Proposed -widening upto12 mtr width	During site inventory existing structure (1X0.6) HPC in width of 7.5mtr found in poor condition. It is in sufficient to drainaw the rain water. In schedule B it is proposed to widen (1X1.0) HPC up to 12 mtr width. There is a difference in existing structure and proposed structure in schedule B. Hence (1X1.2)mtr HPC is proposed to reconstruct at this chainage in 12 mtr width.	Site inspection carried out by us. Agreed with the comments of concessionaire. Since the existing HPC and proposed HPC in schedule B is not resembling with each other hence it is proposed & recommended to reconstruct (1X1.2)mtr HPC in width of 12 mtr whose cross sectional area is more compare to the existing structure. (a) Structure proposed in schedule B shall be under change of scope of Negative variation. (b) The proposed & recommended structure shall be under change of scope of positive variation. (c) Net cost of variation shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for proposed structure in schedule B, widening of HPC (1X1.0)mtr in 12mtr width taken as Negative variation and reconstruction of (1x1.2)mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
18	Extra	57+735	Not Mentioned in schedule A	No proposal inShedule B	In inventory existing structure (1x0.6)mtr HPC in width of 6.8 mtr found in poor condition. As per schedule A & B, structure is not Proposed. Observing Nallah at this chainage location it is required to provide larger cross sectional area. Also local enquiry regarding flow of water during rainy season which overtops the existing structure. Therefore considering the location of structure it is proposed to reconstruct (2X1.0) HPC in width of 12 mtr.	Inspection carried out by us. Agreed with the comments of concessionaire.Structure is not mentioned in schedule A and there is no provision of structure in schedule B. Local enquiry reveals that at this location water overtops the existing structure in rainy season. Hence it is proposed and recommended to reconstruct (2X1.0) mtr HPC in 12 mtr width whose cross sectional area is more compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (2x1.0)mtr HPC in 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.
19	Extra	57+827	Not Mentioned in schedule A	No proposal inShedule B	In inventory existing structure (1x0.85)mtr stone slab found in poor condition. Details of existing structure is given below Length -6mtr , Width/Span -0.85mtr , Height - 0.85mtr As per schedule A & B structure is not Proposed. But structure is required at his location for safety and traffic of road Hence it is proposed to reconstruct (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire. Structure is not mentioned is schedule A and there is no provision of structure in schedule B Hence as per site condition (1X1.0) mtr HPC in width of 12 mtr width is proposed whose cross sectional area is more compare to the existing structure (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x1.0)mtr HPC in 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.
20	Extra	57+906	Not Mentioned in schedule A	No proposal inShedule B	In inventory existing structure (1x0.65)mtr stone slab found in poor condition. Details of existing structure is given below Length -7.2mtr , Width/Span -0.65mtr , Height - 1.5mtr As per schedule A & B structure is not Proposed. But structure is required at his location for safety and traffic of road Hence it is proposed to reconstruct (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire. As per schedule A & B structure is not Proposed. Hence as per site condition (1X1.0) mtr HPC in width of 12 mtr is proposed whose cross sectional area is more compare to the existing structure. The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x1.0)mtr HPC in 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.
21	Extra	58+187	Not Mentioned in schedule A	No proposal inShedule B	In inventory existing structure (1x0.35)mtr stone slab found in poor condition. Details of existing structure is given below Length -7mtr , Width/Span -0.35mtr , Height - 1.5mtr As per schedule A & B structure is not Proposed. But structure is required at his location for safety and traffic of road Hence it is proposed to reconstruct (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire. As per schedule A & B structure is not Proposed. Hence as per site condition (1X1.0) mtr HPC in 12 mtr width is proposed whose cross sectional area is more compare to the existing structure. The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked outby the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x1.0)mtr HPC in 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.

DBL UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

HDE

Team Leader
Redecon (I) Pvt. Ltd.

C/S

Divisional Manager
M.P.R.D.C. Ltd.
Dn. No. 1, Rewa

CE(BOT)

15/12/13
CM(BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
22	Extra	58+199	**Not Mentioned in schedule A**	No proposal inSchedule B	In inventory existing structure (1x0.8)mtr stone slab found in poor condition . Details of existing structure is given below Length -7.2mtr , Width/Span -0.8mtr . Height - 1.0mtr As per schedule A & B structure is not Proposed . But structure is required at this location for safety and traffic of road Hence it is proposed to reconstruct (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence as per site condition (1X1.0) mtr HPC in 12 mtr width is proposed whose cross sectional area is equivalent to the existing structure. The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.
23	Extra	58+773	**Not Mentioned in schedule A**	No proposal in Shedule B	In inventory existing structure (1x1.05)mtr stone slab found in poor condition. Details of existing structure is given below Length -7mtr . Width/Span -1.05mtr . Height - 1.05mtr As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season this required to provide larger cross sectional area. Hence it is proposed to reconstruct (2x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us. Agreed with the comments of concessionaire.As per schedule A & B structure is not Proposed. Local enquiry reveals that during rainy season sometimes water overtops at this location . Hence as per site condition (2X1.0) mtr HPC in 12 mtr width whose cross sectional area is more compare to the existing structure. The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (2x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.
24	60+200	59+013	Type of Structure-Arch No of span-01 Span length-10mtr C.W-6.5 mtr Over all width-7.5 mtr Condition of structure- slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of Structure-RCC slab(1x6) mtr span Proposal - Reconstruction in(1x6)mtr RCC slab in 12.0 mtr width	As per site inventory existing structure (132.5)mtr Stone slab is found in poor condition. In schedule B it is proposed to reconstruct (1X6)mtr Minor bridge in 12 mtr width. The proposed structure has same span compared to existing bridge. Hydraulic calculation is considered and accordingly (1X8) mtr Minor bridge in width 12 mtr is proposed to reconstruct. Also during visit of CE MPRDC on dated 11-05-2013 decided and proposed (1X8) mtr Minor bridge the for construction	Inspection carried out by us and Agreed with the comments of concessionaire. The existing structure is located in deep hilly terrain where water flows suddenly high during rainy season.hydrological data also shows the same. Hence as per site condition it is proposed and recommended to reconstruct (1X8)mtr minor bridge as follows . (i) Structure mentioned in schedule B shall be under change of scope of negative variation. (ii) Proposed and recommended structure shall be under change of scope of positive variation. Net cost shall be worked out by concessionaire for net financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x6)mtr minor bridge in 12 mtr width proposed in schedule B taken as negative variation and proposal for reconstruction of (1x8) mtr minor bridge in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
25	Extra	59+130	Not Mentioned in schedule A	No proposal in schedule B	During inventory no structure found at this location In rainy season it is observed that water flows on road, due to location of chainage is hilly terrain In schedule B and A structure is not proposed Therefore to safeguard the road in rainy season a New structure is required. Hence it is proposed to New construction of (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire.It is observed that in rainy season water overtops the road at this location. There is no provision of structure in schedule A & B Hence as per site condition (1X1.0) mtr HPC in 12 mtr width is proposed and recommended to New construction follows (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (1x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.
26	Extra	59+220	Not Mentioned in schedule A	No proposal in schedule B	In inventory existing structure (1x0.75)mtr stone slab found in poor condition. Details of existing structure is given below Length -5.5mtr , Width/Span -0.75mtr . Height - 1.4mtr As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season this required to provide larger cross sectional area. Hence it is proposed to reconstruct (2x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire.Local enquiry reveals that during rainy season sometimes water overtops at this location . Structure is not mentioned in schedule A and there is no provision of structure in schedule B. Hence as per site condition (2X1.0) mtr HPC upto 12 mtr width is proposed to reconstruct whose cross sectional area is more compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	IE recommendation is accepted for reconstruction to (2x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.

UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

Team Leader
Redecon (I) Pvt. Ltd

Divisional Manager
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CE(BOT)

15/10/13
GM (BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
27	63+000	64+752	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-7.5 mtr Over all width-8.5 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.0)mtr Proposed - widening up to 12 mtr width	As per site inventory existing structure (1X1.2)mtr. Stone slab is found in poor condition. Details of existing structure is given below Length -7.3mtr , Width/Span -1.2mtr , Height - 1.1mtr (3 no vents) It is mentioned in schedule B (1X1.0) mtr HPC in 12 mtr width to be widened. Also local enquiry reveals that the flow of water during rainy season is high. Therefore the safety of road and requirement of site condition it is proposed to reconstruct (1X3X2.0) box culvert in width of 12 mtr	Inspection carried out by us Agreed with the comments of concessionaire.As per local enquiry it is found that the existing structure has sufficient area of vents for clearance of rainy water therefore As per requirement and safety of road for traffic movement it is proposed and recommended to reconstruct (1X3X2.0)mtr box culvert in width of 12 mtr as follows. (a) The structure proposed in schedule B shall be under change of scope of Negative variation. (b) The proposed and recommended structure shall be under change of scope of Positive variation. (c) Net cost in variation shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening to (1x1.0)mtr HPC in 12 mtr width proposed in Sheduled B taken as negative variation ,and proposal for reconstruction of (1x3X2.0) mtr Box culvert in 12 mtr width as positive variation. Actual financial implication may be worked out accordingly.
28	Extra	65+170	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (2X0.9)mtr HPC found in poor condition Detail of existing structure it given below. Length -9.2mtr 2 row pipe Dia -0.9mtr . As per schedule A & B structure is not Proposed . Observing Nalah at this chainage location, and flow of water during rainy season it is required to provide larger cross sectional area. The structure is located in pahadikheda village Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence as per site condition (2X1.2) mtr HPC upto 12 mtr width is proposed whose cross sectional area is sufficient compare to the Existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction to (2x1.2)mtr HPC in 12 mtr width taken as positive variation . Financial implication may be worked out accordingly.
29	67+600	68+319	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-8.2 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.0)mtr Proposed -widening up to 12 mtr width	As per site inventory existing structure (1X1.6)mtr. Stone slab is found in poor condition. Details of existing structure is given below Length -9.2mtr , Width/Span -1.6mtr , Height - 2.5mtr It is proposed in schedule B (1X1.0) mtr HPC in 12 mtr width to be widened. The structure is located in Pahdikheda village Therefore for the safety of road and requirement of site condition it is proposed to reconstruct (1X3X2.95) box culvert in width of 12 mtr	The mentioned chainage inspected by us Agreed with the comments of concessionaire.The structure is located in pahadikhera village. Local enquiry regarding flow of water during rainy season is considered which overtops at this chainage location. Hence as per requirement of site condition and safety for road & traffic movement it is proposed & recommended to reconstruct (1X3) mtr box culvert in 12 mtr width as follows. (a)The structure mentioned in schedule B shall be under change of scope of Negative variation. (b) Proposed and recommended box culvert (1X3X2.95) shall be under change of scope of positive variation. (c) Net cost in variation shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening to (1x1.0)mtr HPC in 12 mtr width proposed in schedule B taken as negative variation ,and proposal for reconstruction of (1x3X2.95) mtr Box culvert in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
30	67+900	65+627	Type of Structure- HPC No of pipe-02 Dia of pipe-1000mm C.W-6.5 mtr Over all width-8.2 mtr Condition of structure- pipe-poor Head wall -poor Return wall-poor	Type of Structure-HPC(2x1.2) proposed - Reconstruction in 12.0 mtr width	As per site inventory existing structure (1X2.7)mtr. Arch culvert is found in poor condition. Details of existing structure is given below Length -8.6mtr , Width/Span -2.7mtr , Height - 1.3mtr It is proposed in schedule B(2X1.2) mtr HPC in 12 mtr width to be Reconstructed. The structure is located in Pahdikheda village Therefore for the safety of road and requirement of site condition it is proposed to reconstruct (1X3X3.4) box culvert in width of 12 mtr.	The mentioned chainage inspected by us and Agreed with the comments of concessionaire.The structure is located in pahadikhera village therefore for the clearance of water in rainy season it is preferred to construct slab culvert. Hence it is proposed & recommended to construct (1X3X3.4)mtr Box culvert upto 12 mtr width for the safety of road and movement of traffic as follows. (a) Structure in mentioned in schedule B shall be under change of scope of Negative variation. (b) Structure proposed and recommended for construction shall be under change of scope of positive variation. (c) Net cost in variation shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening to (2x1.0)mtr HPC in 12 mtr width proposed in Sheduled B taken as negative variation ,and proposal for reconstruction of (1x3X3.4) mtr Box culvert in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.

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GM(R&D)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
31	66+100	66+013	Type of Structure-Stone No of span-01 Span length-1mtr C.W-6 mtr Over all width-6.7 mtr Condition of structure- slab -fair head wall/wing wall -fair return wall/parapet-fair	Type of Structure-Stone slab culvert(1x3.0)mtr Proposed – Reconstruction in 12.0 mtr width	During inventory existing structure (100.95)mtr stone slab is found in poor condition.Details of existing structure is given below Length -6.6mtr , Width/Span -0.95mtr . Height - 0.55mtr In schedule B it is proposed is reconstruct (1X3)mtr slab culvert in width of 12 mtr . As per site condition and consideration of local people opinion (2X1.2)mtr HPC upto 12 mtr width is proposed	The mentioned chainage inspected by us and Agreed with the comments of concessionaire.In rainy season flow of water at this location is observed and it seems that the proposed construction(1x3) mtr slab culvert is on higher side compare to water flow. As per site condition (2X1.2) mtr HPC in width of 12 mtr is sufficient for drainage of water at this location hence it is proposed and recommended to construct (2X1.2)mtr HPC in 12 mtr width . (a) Structure proposed in schedule B(RCC slab culvert 1x3)mtr in width of 12 mtr is deleted shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost shall be worked out by concessionaire	Reasons & recommendation of IE is accepted for reconstruction of (1x3)mtr slab in 12 mtr width proposed in schedule B taken as negative variation and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
32	Extra	67+500	Not Mentioned in schedule A	No provision is scheduled B	During inventory as structure is found at this location in rainy season it is observed that water flows on road, In schedule A & B structure is not proposed Therefore to safeguard the road in rainy season a New structure is required. Hence it is proposed Newconstruction of (1x1.0) mtr HPC in 12 mtr width.	Inspection carried out by us Agreed with the comments of concessionaire. There is no provision of structure in schedule A & B Hence as per site condition (1X1.0) mtr HPC in 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (a) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE recommendation is accepted for Newconstruction of (1x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.
33	Extra	68+070	Not Mentioned in schedule A	No proposal in Shedule B	In inventory existing structure (2x1.10)mtr stone slab is found in poor condition. Details of existing structure is given below Length -7.9mtr , Width/Span -1.10mtr . Height - 0.9mtr(Two nos vent) As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season this required to provide a structure to safeguard road and traffic. Hence it is proposed to reconstruct (2x1.0) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (2X1.0)mtr HPC up to 12 mtr width whose cross sectional area is equivalent compare to the existing structure. (a) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction of (2x1.0)mtr HPC in 12 mtr width taken as positive variation . Financial implication may be worked out accordingly.
34	Extra	69+327	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (100.95)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -9.1mtr .width-0.95 height -0.65mtr . As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season this required to provide structure to safeguard road and traffic. Hence it is proposed to reconstruct (1x1.0) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0) mtr HPC upto 12 mtr width whose cross sectional area is equivalent to the existing structure. (1) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE recommendation is accepted for reconstruction of (1x1.0)mtr HPC in 12 mtr width taken as positive variation . Financial implication may be worked out accordingly.
35	Extra	69+586	Not Mentioned in schedule A	no proposal in Shedule B	During inventory existing structure (100.65)mtr stone slab is found is poor condition Detail of existing structure is given below. Length -7.2mtr .width-0.65 height -1.2mtr . As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season this required to provide structure, to safeguard road and traffic. Hence it is proposed to reconstruct (2x1.0) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (2X1.0)mtr HPC is proposed whose cross sectional area is more compare to the existing structure. (1) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction of (3x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.

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15/10/15
GM (R&D)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
36	Intra	68+763	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X1.2)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -5mtr ,width-1.2 height -1.15mtr . As per schedule A & B structure is not Proposed . Observing Nallah at this chainage location, and flow of water during rainy season water overtops the existing structure .Hence it is required to provide structure, to safeguard road and traffic. Therefore it is proposed to reconstruct (2x1.0) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed & recommended as per site condition to reconstruct (2X1.0) mtr HPC upto 12 mtr width ,whose cross sectional area is sufficient compare to the existing structure (1) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for reconstruction of (2x1.0)mtr HPC in 12 mtr width taken as positive variation . Actual financial implication may be worked out accordingly.
37	71+900	69+343	Type of Structure-Stone No of span-01 Span length-1.5mtr C.W-5.0 mtr Over all width-6.5 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure- RCC(1x3)mtr slab Proposed -Reconstruction in 12.0 mtr width	During inventory existing structure (1X0.9)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -5.5mtr ,width-0.9 height -1.35mtr . (1) In schedule B it is proposed to reconstruct (1X3) slab in 12 mtr width. Observing a narrow Nallah at this chainage location, and flow of water during rainy season it is required to provide structure, to safeguard road and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. As per site condition (2X1.2) HPC is sufficient for drainage of water at this location hence it is proposed and recommended to reconstruct (2X1.2) mtr HPC upto 12 m width as follows (a) Structure proposed in schedule B(1x3)mtr slab in 12 mtr width is deleted, shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost variation of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion of (reconstruction of (1x3)mtr slab in 12 mtr width) proposed in schedule B taken as negative variation and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
38	72+500	69+913	Type of Structure-Stone No of span-01 Span length-1.0 mtr C.W-5.7 mtr Over all width-6.7 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure-RCC slab(1x3.0) mtr Proposal -Reconstruction in 12.0 mtr width	During inventory existing structure (2X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7.4mtr ,width-0.6 height -0.8mtr . (1) In schedule B it is proposed to reconstruct (1X3) slab in 12 mtr width. Observing a narrow Nallah at this chainage location, and flow of water during rainy season it is required to provide structure, to safeguard road and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. As per site condition (2X1.2) HPC is sufficient for drainage of water at this location hence it is proposed and recommended to reconstruct (2X1.2) mtr HPC upto 12 m width as follows. (a) Structure proposed in schedule B (1x3) slab culvert is deleted shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost of structure of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening of (1x3.0)slab culvert in 12 mtr width proposed in schedule B taken as negative variation and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
39	72+900	-	Not Mentioned in schedule A	Type of structure- HPC (1x1.2)mtr HPC proposed -Newconstruction in 12.0 mtr width	During inventory no structure found at existing chainage In schedule B it is proposed to Newconstruct (1X1.2) mtr HPC upto 12 mtr width As per site observation the structure is not required at this location Hence the structure is cancelled	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. As per favourable condition of site no structure is required at this location because both side ground (upstream and downstream) is in sloping type hence it is proposed and recommended to delete the structure(1x1.2)mtr HPC New construction in 12 mtr width (a) Structure mentioned in schedule B shall be change of scope of Negative variation. Actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE for deleting this structure HPC (1X1.2) mtr in width of 12 mtr taken as negative change of scope. Financial implication may be worked out.
40	73+600	71+343	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-8.4 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.0)mtr Proposed- widening up to 12 mtr width	During inventory existing structure (1X0.9)mtr HPC is found in poor condition Detail of existing structure is given below. Length -7.4mtr ,one row Dia -0.9 As per schedule B it is proposed to widen (1X1.0)mtr HPC in 12 mtr width. Since the existing HPC is in poor condition Hence it is proposed to reconstruct (1X1.2) mtr HPC in 12 mtr width	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. Due to deteriated condition of H.P.C it is proposed & recommended to reconstruct H.P.C (1X1.2)mtr in 12 mtr width (a) Structure in mentioned in schedule B shall be under change of scope of Negative variation. (b) Structure proposed and recommended for construction shall be under change of scope of positive variation. (c) Net cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening of (1x1.0)HPC in 12 mtr width proposed in schedule B taken as negative variation and proposal for reconstruction of (1x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.

DBL UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

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Divisional Manager
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SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
41	74+180	-	Not Mentioned in schedule A	Type of structure- HPC (1x1.2)mtr Proposed -Newconstruction in 12.0 mtr width	During inventory no structure found at existing chainage In schedule B it is proposed to Newconstruct (1X1.2)mtr HPC upto 12 mtr width. As per site observation the structure is not required at this location Hence the structure is deleted	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. As per favourable condition of site no structure is required at this location because both side (upstream and downstream) is sloping type , hence it is proposed and recommended to delete the HPC (1x1.2) mtr new construction in 12 m width. (a) Structure proposed in schedule B shall be change of scope of Negative variation. Actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE for deleting of this structure HPC(1X1.2) mtr is 12 mtr width taken as negative change of scope. Financial implication may be worked out.
42	74+300	71+757	Type of Structure- HPC No of pipe-01 Dia of pipe-1000 C.W-6.5 mtr Over all width-8.2 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.0)mtr Proposed widening of HPC in 12 mtr width	During inventory existing structure (1X0.9)mtr HPC is found in poor condition Detail of existing structure is given below. Length -9.8mtr ,one row Dia - 0.9 As per schedule B it is proposed to widen (1X1.0)mtr HPC in 12 mtr width. Since the of existing HPC is in poor condition Hence it is proposed to reconstruct (1X1.2) mtr HPC in 12 mtr width	The mentioned chainage inspected by us and Agreed with the comments of concessionaire. keeping in view the safety of traffic under following condition (a) Structure in mentioned in schedule B shall be under change of scope of Negative variation. (b) Structure proposed and recommended (1x1.2)mtr HPC in 12 mtr width for construction shall be under change of scope of positive variation. (c) Net cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening of (1x1.0)HPC in 12 mtr width proposed in schedule B takes as negative variation ,and proposal for reconstruction of (1x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
43	Extra	71+989	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (2X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7mtr ,width-0.6 height -1.0mtr (two no vents). In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. The structure is neither shown in schedule A Nor proposed in schedule B Hence it is proposed and recommended to reconstruct (1X1.0) mtr HPC in width of 12 mtr, whose cross sectional area is equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
44	Extra	72+363	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -9.0mtr ,width-0.6 height -0.5mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
45	Extra	72+606	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -8.2mtr ,width-0.65 height -0.44mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0) mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE recommendation is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out

DBF UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

Team Leader
Redecon (I) Pvt. Ltd.

Divisional Manager
M.P.R.D.C. Ltd.
Dn. No. 1, Rewa

CE (BOT)

GM (BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
46	Extra	72+678	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.7)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.6mtr ,width-0.7 height -0.35mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
47	Extra	72+761	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.6mtr ,width-0.65 height -0.65mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
48	Extra	72+817	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.5mtr ,width-0.65 height -0.55mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B. Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
49	Extra	72+931	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.5mtr ,width-0.65 height -0.5mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
50	Extra	73+851	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.8)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.1mtr ,width-0.8 height -0.55mtr . (3 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (3x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B.Also it is observed in rainy season water overtops the existing structure Hence the proposal of the concessionaire to reconstruct (3X1.2) mtr HPC upto 12 mtr width is moderated to (2x1.0)mtr HPC whose cross sectional area is more than the existing structure. Hence proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (2x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out

DBL UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

Team Leader
Redecon (I) Pvt. Ltd.

Divisional Manager
M.P.R.D.C Ltd.
Dn. No. 1, Rewa

CE (BOT)

15/10/13
GM (BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
S1	Extra	73+302	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1.60-7)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.1mtr ,width-0.7 height -0.5mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation Actual financial implication may be worked out
S2	Extra	73+334	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.5)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -0.2mtr ,width-0.5 height -0.35mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
S3	Extra	73+625	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (2X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7.3mtr ,width-0.65 height -0.46mtr . (2 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr whose cross sectional area is equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
S4	Extra	73+734	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.65)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -6.8mtr ,width-0.65 height -0.4mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
S5	Extra	73+827	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7.6mtr ,width-0.6 height -0.4mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is sufficient compare to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out

HOE

Team Leader
Redecoh (I) Pvt. Ltd.

Divisional Manager
M.P.R.D.C. Ltd.
Dn. No. 1, Rewa

CE (BoT)

15/7/13
GM (LAT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSEDBY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
56	Extra	74+114	Not Mentioned in schedule A	No proposal in Shedule B	During inventory existing structure (1X0.8)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -8.5mtr ,width-0.8 height -0.4mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B (2) Hence it is proposed and recommended to reconstruct (1X1.0) HPC upto 12 mtr width whose cross sectional area is equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
57	Extra	74+635	Not Mentioned in schedule A	No proposal inShedule B	During inventory existing structure (1X2.4)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -3.7mtr ,width-2.4 height -0.9mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (2x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (2X1.0)mtr HPC upto 12 mtr width whose cross sectional area is equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (2x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
58	77+500	74+716	**Type of Structure- HPC** No of pipe-01 Dia of pipe-1000mm CW-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe-fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.00) Proposed -widening up to 12 mtr width	During inventory existing structure (3X0.65)mtr stone slab is found in poor condition Detail of existing structure is gives below. Length -7.8mtr ,Width/span -0.65 Height - 1.4mtr (3 no. vents) As per schedule B it is proposed to widen (1X1.0)mtr HPC in 12 mtr width Which is not resembling with the existing structure. Therefore seeing above site condition for the safety of traffic and requirement to fulfil the condition of road it is proposed to reconstruct (2X1.0) HPC in width of 12 mtr.	The mentioned chainage inspected by us and Agreed with the comments of concessionaire Hence it is proposed and recommended to reconstruct (2X1.0)mtr HPC which is equivalent to the cross sectional area of Existing structure in width of 12 mtr on the located chainage as follows. (4) (a) Structure mentioned in schedule B proposed for widening shall be change of scope of Negative variation. (b) The proposed and recommended structure shall be under change of scope of positive variation. The Net cost shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for widening of (1x1.0)HPC in 12 mtr width proposed in schedule B taken as negative variation and proposal for reconstruction of (2x1.0) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
59	Extra	74+803	Not Mentioned in schedule A	No proposal in schedule B	During inventory existing structure (2X0.85)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -9.2mtr ,width-0.85 height -0.7mtr . (2 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is Equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
60	Extra	74+990	Not Mentioned in schedule A	No proposal in schedule B	During inventory existing structure (2X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -9.8mtr ,width-0.6 height -0.72mtr . (2 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is Equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out

UCHERA-NAGOD TOLLWAYS LIMITED PROJECT MANAGER

Team Leader
Redecon (I) Pvt. Ltd.

HDE

Divisional Manager
M.P.R.D.C. Ltd.
Dn. No. 1, Rewa

CE (BOT)

15/11/13
GM (QS)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSEDBY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
61	Extra	75+312	Not Mentioned in schedule A	No proposal in schedule B	During inventory existing structure (3X0.8)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -8.2mtr ,Width-0.8 height -0.5mtr . (2 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is Equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
62	Extra	76+433	Not Mentioned in schedule A	No proposal in schedule B	During inventory existing structure (3X0.9)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -8.5mtr ,width-0.9 height -0.5mtr . (3 no. vents) In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (3x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to construct (3X1.0) mtr HPC upto 12mtr width whose cross sectional area is Equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction of (3x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
63	Extra	76+600	Not Mentioned in schedule A	No proposal in schedule B	During inventory existing structure (1X0.6)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7.8mtr ,width-0.6 height -0.15mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	The mentioned chainage inspected by us. Agreed with the comments of concessionaire. Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed and recommended to reconstruct (1X1.0)mtr HPC upto 12 mtr width whose cross sectional area is Equivalent to the existing structure. (i) The proposed and recommended structure shall be under change of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication	Reasons & recommendation of IE is accepted for re construction of (1x1.0)mtr HPC in the width of 12 mtr taken as positive variation. Actual financial implication may be worked out
64	80+100	77+101	Type of Structure- Minor Bridge No of span-03 Span length-10mtr CW-6.7 mtr Over all width-8.5 mtr Condition of structure- super structure -poor sub structure -poor	Type of structure- minor bridge (1x10)mtr minor bridge Proposal - Reconstruction in 12.0 mtr width	(1) As per site inventory existing structure is Minor bridge (3X7.2) mtr in good condition. The carriage way and over all width of structure is 6.7 and 8.5 mtr respectively. (2) In schedule B it is proposed to reconstruct (1X10) mtr minor bridge in 12 mtr width. Also it is decided during site visit of CE (MPRDC) dt. 11.05.2013. to retain this structure. The structure can be saved as it is in good condition with minor repairs. Hence it is proposed to retain the structure.	The mentioned chainage inspected by us Agreed with the comments of concessionaire. Therefore it is proposed and recommended to retain the structure as follows. (a) Proposed construction of minor bridge (1X10)mtr upto 12 mtr width shall be under change of scope of Negative variation. The actual cost of structure shall be worked outby concessionaire for financial implication.	Reasons & recommendation of IE, is accepted for proposal of construction in schedule B, (1X10)mtr Minor bridge upto 12 mtr width takes as under Negative change of scope. Financial implication may be worked out.
65	80+600	77+675	Type of Structure-Stone No of span-01 Span length-1mtr CW-6.5 mtr Over all width-7.5 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet poor	Type of structure- Slab culvert (1x3)mtr proposed -Reconstruction in 12.0 mtr width	During inventory existing structure (1X1.2)mtr HPC is found in poor condition Detail of existing structure is given below. Length -6.4mtr ,One new Dia- 1.2 mtr . (1) In schedule B it is proposed to reconstruct (1X3) slab in 12 mtr width. Observing a narrow Nallah a this chainage location, and flow of water during rainy season it is required to provide structure, to safeguard road and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	Inspection is carried out by us. Agreed with the comments of concessionaire . As per site condition (2X1.2) HPC is sufficient for drainage of water at this location hence it is proposed and recommended to Reconstruct (2X1.2) HPC in 12mtr width as follows. (a) Structure proposed in schedule B shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost shall be worked out by concessionaire for financial implication.	IE recommendation is accepted for deletion of (reconstruction of (1x3)mtr slab in 12 mtr width) structure proposed in shedule B taken as negative variation and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.

Team Leader
Redecon (I) Pvt. Ltd.

Divisional Manager
MPRDC Ltd

CE(BOT)

GM(BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
66	81+200	78+063	Type of Structure-Stone No of span-01 Span length-2.0 mtr C.W-5.5 mtr Over all width-6.5 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure-RCC slab(1X4.0)mtr proposed -Reconstruction in 12.0 mtr width	During inventory existing structure (1X0.7)mtr stone slab is found in poor condition Detail of existing structure is given below. Length -8.0mtr ,width/span -0.7mtr Height -0.75mtr (1) In schedule B it is proposedto reconstruct (1X4) slab in 12 mtr width. Observing a narrow Nallah at this chainage location, and flow of water during rainy season it is required to provide structure, to safeguardroad and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	Inspection is carried out by us. Agreed with the comments of concessionaire. As per site condition (2X1.2) HPC upto 12 mtr width is sufficient for drainage of water at this location hence it is proposed and recommended to construct (2X1.2) HPC in 12 m width as follows . (a) Structure proposed in schedule B shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost shall be worked out by concessionaire for financial implication	Reasons & recommendation of IE is accepted for deletion of(reconstruction of (1x4)mtr slab in 12 mtr width) structure proposed in schedule B taken as negative variation ,and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
67	82+900	79+799	Type of Structure-Stone No of span-01 Span length-2mtr C.W-6 mtr . Over all width-7.5 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure-RCC slab(1x3.00) proposed -Reconstruction in 12.0 mtr width	During inventory existing structure (1X1.0) mtr stone slab is found in poor condition Detail of existing structure is given below. Length -7.5mtr ,width/span - 10 mtr . Height -0.95mtr (1) In schedule B it is proposed to reconstruct (1X3) slab in 12 mtr width. Observing a narrow Nallah at this chainage location, and flow of water during rainy season it is required to provide structure, to safeguard road and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (2x1.2) mtr HPC in 12 mtr width.	Inspection is carried out by us. Agreed with the comments of concessionaire . As per site condition (2X1.2) HPC upto 12 mtr width is sufficient for drainage of water at this location hence it is proposed and recommended to reconstruct (2X1.2) HPC upto 12 mtr width as follows . (a) Structure proposed in schedule B shall be change of scope of Negative variation. (b) structure proposed and recommended to reconstruct shall be change of scope of positive variation. Net cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion of (reconstruction (1x3)mtr slab in 12 mtr width) structure proposed in schedule B taken as negative variation ,and proposal for reconstruction of (2x1.2) mtr HPC in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
68	83+393	80+191	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-8.2 mtr Condition of structure- pipe-poor Head wall -poor Return wall-poor	Type of Structure- HPC (1x1.2)mtr Proposed - Reconstruction in 12 mtr width	During inventory existing structure (1X1.2)mtr slab is found in fair condition. Detail of existing structure is given below. Length -8.0mtr ,width/span - 12 mtr . Height -1.1mtr Existing slab culvert is sufficient for drainge of water in rainy season. The slab condition is found fair. In schedule B it is proposed toreconstruct (1x1.2)mtr HPC upto 12 mtr width. Since the condition of existing slab culvert is fair therefore widening of slab cuvrt with existing span (1x1.2) mtr is proposed upto 12 mtr width	Inspection is carried out by us. Agreed with the comments of concessionaire .proposed and recommended to widen the existing culvert(1x1.2)mtr width up to 12 mtr length as follows . (a) In shedule B proposed HPC shall be under charge of scope of Negative variation. (b) Proposed and recommended for widening of slab shall be under charge of scope of positive variation. Net cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion (reconstruction of (1x1.2)mtr HPC in 12 mtr width) structure proposed in schedule B taken as negative variation ,and proposal for widening of (1x1.2) mtr slab culvert in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
69	84+100	86+992	Type of Structure-Stone No of span-01 Span length-3mtr CW-6 mtr Over all width-7.5 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure- slab culvert(1x4)mtr proposed -Reconstruction in 12.0 mtr width	During inventory existing structure (1X0.6)mtr HPC is found in poor condition Detail of existing structure is given below. Length -8 mtr ,One row Dia - 0.6 mtr . (1) In schedule B it is proposed to reconstruct (1X4) slab in 12 mtr width. Observing a narrow Nallah at this chainage location, and flow of water during rainy season it is required to provide structure, to safeguard road and traffic. Proposed structure in schedule B may be changed as per requirement of site condition. Hence it is proposed to reconstruct (1x1.2) mtr HPC in 12 mtr width.	site inspection is carried out by us. Agreed with the comments of concessionaire . But as per site condition (1X1.2) HPC upto 12 mtr width is sufficient for drainage of water hence it is proposed and recommended to reconstruct on this location as follows Structure is proposed in schedule B shall be change of scope of Negative variation. Structure proposed for reconstruction shall be change of scope of positive variation. Net cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion of (1x4)mtr slab culvert in 12 mtr width proposed inSchedule B taken as negative variation ,and proposal for widening of (1x1.2) mtr HPC in 12 mtr width as positive variation. Net financial Implication may be worked out accordingly.

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SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
70	81+908	81+443	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe-poor Head wall -poor Return wall-poor	Type of Structure- HPC(1X1.2)mtr. Proposed - Reconstruction in 12 mtr width	During inventory existing structure (1X1.2)mtr slab is found in fair condition. Detail of existing structure is given below. Length -8.0mtr ,width/span - 1.2 mtr . Height -6.95mtr Existing slab culvert is sufficient for drainge of water in rainy season. The slab condition is found fair. In schedule B it is proposed to reconstruct (1x1.2)mtr HPC upto 12 mtr width. Since the condition of existing slab culvert is fair therefore widening of slab cvert with existing span (1x1.2) mtr is proposed upto 12 mtr width.	Site inspection is carried out by us. Agreed with the comments of concessionaire . Observing the above condition of site and structure it is proposed and recommended to widen the existing culvert up to 12 mtr length as follows . (a) In shedule B mentioned HPC shall be under change of scope of Negative variation. (b) Proposed and recommended for widening of slab shall be under change of scope of positive variation. Net cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for re construction(1x1.2)mtr HPC culvert in 12 mtr width proposed in schedule B taken as negative variation and proposal for widening of (1x1.2) mtr slab culvert in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
71	Extra	81+582	Not Mentioned in schedule A	No proposal in schedule B	During site inventory it is found a buried pipe is very poor condition the location of this chainage is required drainage system to the safety of traffic and road. Hence it is proposed to reconstruct (1x1.0)mtr HPC	Site inspection is carried out by us Agreed with the comments of concessionaire . Structure is not mentioned in schedule A and there is no provision of structure in schedule B Hence it is proposed & recommended to reconstruct (1x1.0) HPC in width of 12 mtr. 5(a)Proposed and recommended structure shall be under change of scope of positive variation. Actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for proposal of reconstruction (1x1.0) mtr HPC in 12 mtr width taken as positive variation. Actual financial implication may be worked out accordingly.
72	85+260	82+078	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-7.5 mtr Condition of structure- pipe- fair Head wall -fair Return wall-fair	Type of Structure- HPC (1x1.0) Proposed -widening up to 12 mtr	During site inventory (1x0.85) stone slab is found in poor condition. Detail of existing structure is given below. Length -6.0mtr ,width/span - 0.85 mtr . Height -1.9mtr In schedule B it is proposed to widen RPC (1X1.0)mtr upto 12 mtr width Since the existing structure is stone slab so it can not be widened with HPC. In this circumstances it is proposed to reconstruct (1X1.2)mtr HPC upto 12 mtr width.	Site inspection is carried out by us Agreed with the comments of concessionaire . Since the existing structure is stone slab in debilitated condition so can not be widened with HPC In this circumstances it is proposed and recommended to reconstruct (1X1.2)mtr HPC upto 12 mtr width. (1)(a)Proposed and recommended structure shall be under change of scope of positive variation. (b) proposed structure in schedule B shall be under change of scope of Negative variation . Net cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for proposal of reconstruction of (1x1.2) mtr HPC in 12 mtr width taken as positive variation. And structure proposed in schedule B as Negative variation. Net financial implication may be worked out accordingly.
73	86+080	87+625	Type of Structure-Slab No of span-01 Span length-1mtr C.W-7 mtr Over all width-8.4 mtr Condition of structure- slab - fair head wall/wing wall -fair return wall/parapet-fair	Type of Structure- RCC Culvert No. of span x length of span-1x1.0mtr C.W-6.5 mtr Over all width-7.5 mtr Condition of structure Substructure- fair super structure-fair Proposed width- (i)widening up to 12.0 mtr width (ii) (1X1.2) HPC is proposed for new construction.	During site inventory it is found (180.9) slab in poor condition Detail of existing structures are given below. Length -8.0mtr ,width/span- 0.9 mtr . Height -2.2mtr. In schedule B at this chainage location 2 no. structures are proposed (i) (1X1.0) slab is proposed for widening up to 12 mtr width (ii) (1X1.2) HPC is proposed for new construction. Since MGB is proposed hence the above structures are required to eliminate.	Site inspection carried out by us and observed that site Stone slab culvert (180.9) found in detariated condition as agerred schedule A provision (1) In schedule B 2 no. structures are proposed for construction. (a)(1X1.0) RCC culvert for widening (b)(1X1.2) HPC for reconstruction (2) Since major bridge (4125) is proposed and recommended for construction on schedule chainage 85+500 The mentioned 2 nos structure in schedule B proposed the construction may be omitted The 2 nostructure mentioned in schedule B shall be under change of scope of Negative variation. Actual cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted to delete 2 nos structures mentioned in schedule B under Negative variation.

HDB

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CE (BOT)

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GM (BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSED BY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
74	75+180	83+805	Not Mentioned in schedule A	Detail Of Proposed Structure Type of structure- HPC NO. of pipes-1 Pipe dia-1200mm proposal & proposed width-Newconstruction in 12.0 mtr width	During inventory no structure found at existing chainage In schedule B it is proposed to Newconstruct (1X1.2)mtr HPC upto 12 mtr width. As per site observation the structure is not required due to this location being on ridge line Hence it is proposed to delete the structure mentioned in schedule B	During site investigation it is observed as follows. (1) No structure found at this chainage location The location of structure is on ridge line. (2) (i) In schedule A no structure is mentioned (ii) In schedule B it is proposed New construction HPC (1X1.2) in 12 mtr width Observing the above condition structure is not required hence it is proposed & recommended to delete as follows. (a) Proposed structure mentioned in schedule B shall be under change of scope of Negative variation. Actual cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion of(New construction HPC (1X1.2)mtr in width of 12mtr)structure proposed in schedule B. to be taken as Negative variation. Actual financial implication may be worked out accordingly.
75	75+400	84+130	Not Mentioned in schedule A	Detail Of Proposed Structure (1x1.20)HPC Proposed-Newconstruction in 12.0 mtr width	During inventory no structure found at existing chainage In schedule B it is proposed to Newconstruct (1X1.2)mtr HPC upto 12 mtr width. As per site observation the structure is not required due to this location being on ridge line Hence it is proposed to delete the structure mentioned in schedule B	During site investigation it is observed as follows. (1) No structure found at this chainage location The location of structure is on ridge line. (2) (i) In schedule A no structure is mentioned (ii) In schedule B it is proposed to new construction HPC (1X1.2) in width of 12 mtr. Seeing the above condition structure is not required hence it is proposed & recommended to delete under following condition (a) Proposed structure mention in schedule B shall be under change of scope of Negative variation. Actual cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted for deletion of(New construction HPC (1X1.2)mtr in width of 12mtr)structure proposed in schedule B to be taken as Negative variation. Actual financial implication may be worked out accordingly.
76	Extra	84+618	Not Mentioned in schedule A	Not Mentioned in Schedule B	During inventory an existing structure (1X1.2)mtr slab culvert is found in poor condition Detail of existing structure a given below. Length -7.7mtr ,width/span- 1.2 Height -0.6mtr . In schedule A & B it is not proposed. As per site condition and safety of the road, structure is required at this chainage location. Hence it is proposed to reconstruct (1x1.0) mtr HPC upto 12 mtr width	Inspection of Existing structure carried out by us Agreed with the comments of concessionaire (1)(i) In schedule A no structure is mentioned (ii) Also there is no provision of structure in schedule B (2) As per requirment of site condition and safety of road it is required . Hence it is proposed & recommended to reconstruct (1x1.0)mtr HPC in 12 mtr width on this location as follows (a) The complete structure shall be under charge of scope of positive variation. The actual cost of structure shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for proposal to reconstruct(1X1.0)mtr HPC, in width of 12mtr taken as Positive variation. Actual financial implication may be worked out accordingly.
77	89+580	85+504	Type of Structure-Slab No of span-01 Span length-1mtr C.W-6.5 mtr Over all width-8.2 mtr Condition of structure- slab -Fair head wall/wing wall -Fair return wall/parapet-Fair	Type of Structure-RCC culvert(1x1)mtr. Proposed-widening up to 12 mtr width	During site inventory (1X0.9) mtr slab is found on ridge line. Detail of existing structure is given below. Length -8.7mtr ,width/span-0.9 Height -1.1mtr . Due to the above position of structure there is no need to provide drainage system. In schedule B it is proposed to widen (1X1.0)mtr slab culvert. As there is no requirment of structure due to above condition hence it is proposed to delete	Inspection of Existing structure carried out by us Agreed with the comments of concessionaire. (1)(i) In schedule A structure is mentioned (1X1)mtr slab (ii) In schedule B it is proposed to widen existing structure (1X1)mtr RCC slab in 12 mtr width It is not needed to provide any cross drainage system as the location of structure exists on ridge line. Hence it is proposed & recommended to delete the structure as follows. Proposed structure in schedule B shall be under change of scope of Negative variation. Actual cost of structure shall be worked out by the concessionaire for financial implication.	Reasons & recommendation of IE is accepted to delete the structure (1X1) mtr RCC slab in 12 mtr width proposed in schedule B is taken as Negative variation. Actual financial implication may be worked out accordingly.

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CE (BOT)

SR. NO.	CHAINAGE		EXISTING DETAILS ASPER SCHEDULE A	PROVISION ASPER SCHEDULE B	CONSTRUCTION PROPOSEDBY CONCESSIONAIRE AS PER SITE CONDITION	REASONS & RECOMMENDATION BY INDEPENDENT ENGINEER	Decision of committee
	EXISTING	DESIGN					
78	72+380	69+979	Type of Structure- HPC No of pipe-01 Dia of pipe-1000mm C.W-6.5 mtr Over all width-8.1 mtr Condition of structure- pipe-fair Head wall - fair Return wall-fair	Type of Structure- HPC (1x1.0)mtr Proposed-widening up to 12 mtr width	In inventory existing structure (1X25)mtr causeway is found in poor condition. In schedule B it is proposed to widen (1X1.0)mtr HPC in 12 mtr width It is observed the existing Nalah has larger span due to its topography. Water flows above the existing causeway continuously in complete rainy season. Hydrological data has also shown the quantum of discharge which is submitted shows that (1X18) mtr minor bridge is width of 12 mtr is required, hence proposed for reconstruction under positive change of scope. Also the same is decided during site visit of CE (MPRDC) on dt 11.05.2018	The mentioned chainage inspected by us Agreed with the comments of concessionaire. Hence it is proposed and recommended to construct (1X18)mtr minor bridge in the width of 12 mtr which is hydrologically required and verified by us. on this located chainage as follows. (a) The proposed structure mentioned in schedule B shall be under change of scope Negative variation. (b) The proposed and recommended structure shall be under change of scope of positive variation. The net cost of variation shall be worked out by concessionaire for financial implication.	Reasons & recommendation of IE is accepted for proposal of widening (1x1.0)HPC in 12 mtr width proposed in schedule B be taken as negative variation and proposal for reconstruction of (1x18) mtr minor bridge in 12 mtr width as positive variation. Net financial implication may be worked out accordingly.
79	85+500	82+163	Type of Structure-Arch No of span-01 Span length-3mtr C.W-7.4 mtr Over all width-8.4 mtr Condition of structure- slab -poor head wall/wing wall -poor return wall/parapet-poor	Type of Structure- Slab culvert(1x3) Proposal -widening to 12.0 mtr width	During site inventory there are 2 separate slab culvert on existing road. Detail of existing structures are given below. (a) Length -6.2mtr ,width/span - 5.95 mtr . Height - 4 feets. (b) Length -6.2mtr ,width/span - 5.90 mtr . Height - 3.10mtr. Water flows during rainy season above 3 to 4 Mt. on existing slab, and traffic gets blocked. In schedule B it is proposed to widen (1X3) slab culvert in 12 mtr width) and other (1X4) slab for reconstruction in 12 mtr width Since it is a live river required to construct a major bridge for continuence of smooth movement of traffic based on the catchment areaand hydrological design. It is proposed to construct a major bridge (4x25) mtr on this re-alignment portion	During site inspection at this location following things are observed Agreed with the comments of concessionaire (1) (i) In schedule A (1X3.0) slab culvert and other (1X3.0) Stone arch are shown. (ii) In schedule B it is proposed to widen (1X3) slab culvert in 12 mtr width and other (1X4) slab. reconstruction in 12 mtr width Therefore a major bridge is required and recommendation for construction hydrologicaly major bridge(4x25) to easy movement of traffic in all weather condition as follows. (a)The proposed structure in schedule B shall be under change of scope of Negative variation. (b) Proposed Major bridge hydrologically and structurally checked for adequacy and structure major bridge (4x25) shall be under change of scope of positive variation. Net cost shall be worked out by concessionaire for financial implication	IE recommendation is accepted for proposal of reconstruction of (4x25) mtr major bridge in 12 mtr width taken as positive variation, and structure proposed (1X3) slab culvert to 12 mtr width in schedule B as Negative variation. Net financial implication may be worked out accordingly.

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SHREM FINANCIAL PRIVATE LIMITED

Development of Sardarpur- Badnawar Road Section (SH-35) in the State of Madhya Pradesh on DBFOT (Toll Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

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Development of Sardarpur- Badnawar Road Section (SH-35) in the State of Madhya Pradesh on DBFOT (Toll Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Sardarpur-Badnawar	02	February 2021	Technical Due Diligence Report

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Sardarpur BadnawarTollways Limited (herein after referred to as the "Concessionaire") had augmented the existing road from Km 0+000 to Km 43+300 (43 Kms) on Sardarpur– Badnawar Road section to 2 laning on DBFOT (Design, Build, Finance, Operate and Transfer) in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 29th June, 2011.

Project highway starts at Sardarpur (Km.0.000) and ends at Bhelosa Chauraha (Km.43.300) passing through Bola,Bidya, Labaria, Rajod, Nipavali in the state of Madhya Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis. Project Location map is given at Fig 1-1.

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL Sardarpur Badnawar Tollways Limited vide agreement dated 26 March 2018.

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriage way and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection Etc.

Figure 1.1: Project Location Map

1.2 Project Data:

The details of the Project are listed in the following table.

Table 1.1: The Project Data

S. No.	Particulars	Details
1	Name of the project	Construction, Operation and maintenance from 0+000 to 43+300 on Sardarpur - Badnawar Road section of SH-34 on DBFOT (Design, Build, Finance, Operate and Transfer) on Toll + Annuity Basis.
2	Road Type	State Highway
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Sardarpur BadnawarTollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	15.04.2011
7	Date of Agreement	29.06.2011
8	Design length as per Schedule B of CA	42.976 Km
9	Actual length constructed	42.976 Km
10	Project lane configuration	2 Lane
11	EPC cost	81.70 Cr
12	Nature of contract	BOT (Toll + Annuity)
13	Toll collected by	Concessionaire
14	Concession period	15 years from the appointed date
15	Date of Letter of Award	15.04.2011
16	Appointed date	16.12.2011
17	Concession end date	15.12.2026
18	Construction period	730 days from the appointed date.
19	Schedule completion date	16.12.2013
20	Date of issuance of provisional certificate (Commercial operation date)	9.06.2012
21	Date of issuance of completion certificate	05.09.2012
22	Annuity amount (every six months)	4.71 Cr
23	Total number of annuities payable	26 No
24	First annuity payment date	09.12.2013
25	Total number of annuity paid	17 No

1.3 Scope of consultancy services

The scope of work includes providing due diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features described in the following table to be developed as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope.

Table 2.1: Salient Features

S.No.	Particulars	As per CA	As per COS	As per Site
1	Total Length of 2 Lane with earthen shoulder	38.731 Km	---	38.731 Km
2	Total Length of 2 Lane with Paved shoulder	4.245	---	4.245
3	Reconstruction	32.692 Km	(-)1.450 Km	31.242 Km
4	Realignment/Bypass	10.284 Km	1.450 Km	11.734 Km
5	Toll Plaza	Km 9+250	Change in Location	Km8+600
6	Bus Bays / Bus Shelters	16 Nos.	---	16 Nos.
7	Truck Lay Bays	01 No.	---	01 No.
8	Major Junction	02 Nos.	---	02 Nos.
9	Minor Junctions	12 Nos.	---	12 Nos.
10	Major Bridges Retained	01 No.	---	01 No.
11	Total Minor Bridges	17 Nos.	---	17 Nos.
12	Total Pipe Culverts	22 Nos.	---	22 Nos.
13	Total Slab Culverts	24 Nos.	---	24 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Sections shown below as per schedule, during the construction.

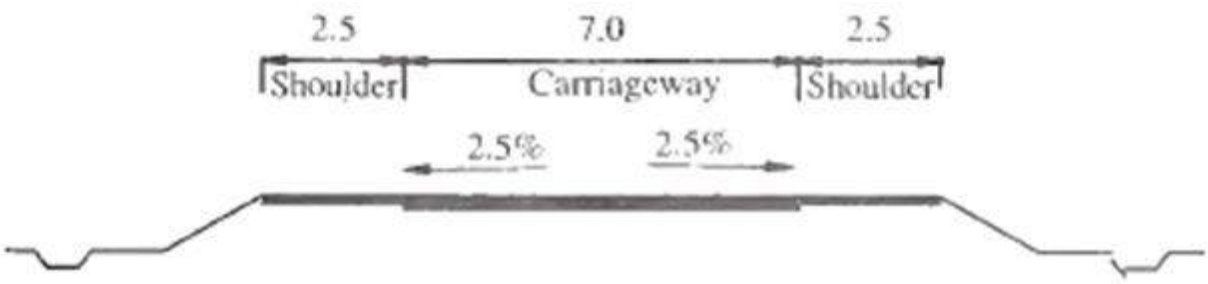

Figure 2.1: (TCS 2.1 of Schedule D of CA) -2 Lane Carriageway

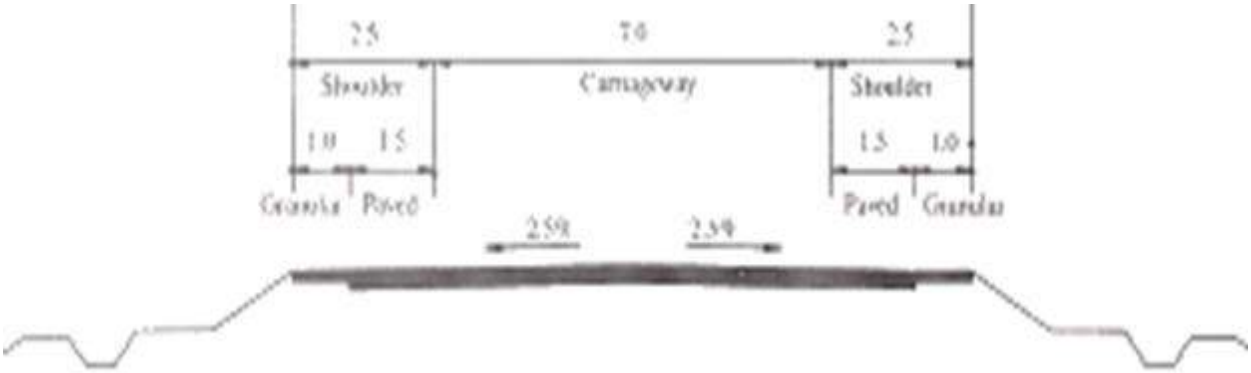

Figure 2.2: (TCS 2.3 of Schedule D) - 2 Lane with Paved Shoulder. (Cross Section in Open Country)

As built drawings are verified and found in accordance with TCS.

TCS schedule is provided below.

Table 2.2: TCS Schedule

S. No	From Chainage (Km)	To Chainage (Km)	Length (m)	Type of TCS
1	0.000	0.200	0.200	TCS.2.3 of Schedule D
2	0.200	6.200	6.000	TCS.2.1 of Schedule D
3	6.200	7.145	0.945	TCS.2.3 of Schedule D
4	7.145	13.100	5.955	TCS.2.1 of Schedule D
5	13.100	13.870	0.770	TCS.2.3 of Schedule D
6	13.870	19.220	5.350	TCS.2.1 of Schedule D
7	19.220	19.620	0.400	TCS.2.3 of Schedule D
8	19.620	24.400	4.780	TCS.2.1 of Schedule D
9	24.400	25.100	0.700	TCS.2.3 of Schedule D
10	25.100	36.440	11.340	TCS.2.1 of Schedule D
11	36.440	36.600	0.160	TCS.2.3 of Schedule D
12	36.600	37.700	1.100	TCS.2.1 of Schedule D
13	37.700	38.200	0.500	TCS.2.3 of Schedule D
14	38.200	39.800	1.600	TCS.2.1 of Schedule D
15	39.800	40.370	0.570	TCS.2.3 of Schedule D
16	40.370	42.976	2.606	TCS.2.1 of Schedule D

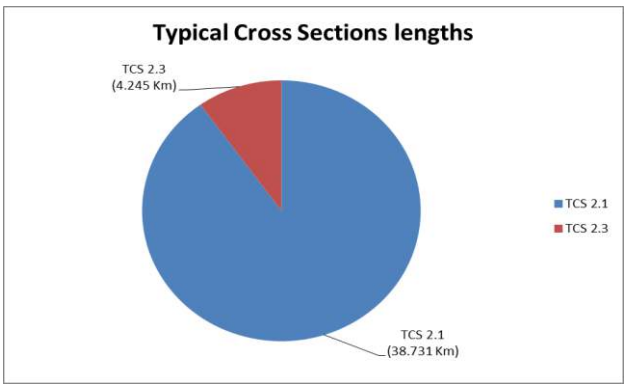

Figure 2.3: Typical Cross Section followed in the Project road

2.3 Road Side Drainage:

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of the CA in strict adherence to the Standard Specifications set forth in Schedule D of the CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment

Realignment of 11.734 Km has been constructed as per Schedule B of the Concession Agreement and COS.

2.6 Intersections

As per provisions of Schedule B of the Concession Agreement 2 Major Junctions and 12 Minor Junctions are provided. Details are given below.

Table 2.3: Summary of Junctions

S. No	Chainage	Side
Major Intersection		
1	0.000	Cross
2	42.976	Cross
Minor Intersection		
1	3.756	LHS
2	6.990	LHS
3	7.280	RHS
4	8.900	RHS
5	10.150	LHS
6	14.300	LHS
7	24.700	RHS
8	29.400	RHS
9	32.000	RHS
10	34.063	Cross
11	35.400	LHS
12	37.600	LHS

2.7 Grade Separated Structures and underpasses

There are no grade-separated structures in the Project, as per provisions of Schedule B of the Concession Agreement.

2.8 Road Under Bridge

There is no RUB in the Project, as per provisions of Schedule B of the Concession Agreement.

2.9 Summary of the Carriageway Details

The details of Pavement are shown in the following table.

Table 2.4: Summary of Carriageway Details

S. No.	Description	Flexible (km)	Rigid (km)	TCS Type
1	2 Lane with earthen shoulder	38.731	---	Fig 2.1 of Schedule D of CA
2	2 Lane with paved shoulder	4.245	---	Fig 2.3 of Schedule D of CA
3	4 Lane	---	---	Fig 2.2 of Schedule D of CA
4	Total length of the project	42.976	---	---
TYPE OF ALIGNMENT				
5	New alignment	---	---	---
6	Realignment	11.734	---	---
7	Strengthening	---	---	---
8	Reconstruction	31.242	---	---
9	Total length of the project	42.976	---	---

2.10 Summary of Structures:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Improvement Proposal of Structures

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1	13	10	---
2	Widening	---	---	5	---
3	Reconstruction	---	04	7	24
4	New	---	---	---	---
5	Improvement	---	---	---	---
6	Total	1	17	22	24

Details of the condition survey carried out on structures are provided at **ANNEXURE-2 & 3**

2.11 Toll Plazas

As per Schedule C of the CA provisions and COS, one Toll Plaza has been constructed at Km. 8+600. Salient features of Toll Plaza are provided below.

- Each side comprises of one normal lane, one extra wide lane and one bike lane.
- The lane width in normal lanes is 3.20mand extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting arrangements.

Figure 2.4: Toll Plaza at Km. 8+600

2.12 Bus shelters and truck lay byes

As per the provisions of Schedule C of the CA, 16 Nos. Bus shelters and 1No truck lay bye is provided in the entire length of Project. Details such as Chainage Location and Name of Village are listed in the following table.

Table 2.6: Bus Shelters and Truck Lay Byes details

S. No.	Chainage	Side	Location
Bus Shelters			
1	0.100	LHS	Sardarpur
2	0.300	RHS	Sardarpur
3	6.200	LHS	Bola Village
4	6.400	RHS	Bola Village
5	13.200	LHS	Jalona Village
6	13.500	RHS	Jalona Village
7	19.400	LHS	Bodiya Village
8	19.700	RHS	Bodiya Village
9	24.400	LHS	Labaria Village
10	25.300	RHS	Labaria Village
11	35.000	LHS	Rajad 1village
12	36.500	RHS	Rajad 1village
13	38.300	LHS	Nipavali Village
14	38.550	RHS	Nipavali Village
15	40.000	LHS	Dharsi kheda Village
16	40.600	RHS	Dharsi kheda Village
Truck lay bay			
1	42.600	Cross	Dharsi kheda Village

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule B of the CA
- Landscaping: provided at toll plaza location and being maintained
- Tree plantation: Tree plantation is provided on both sides of the project corridor all along the way and being
- Medical Aid Post: Provided at toll plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and truck lay bay locations and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in the following table. Couple of representative photographs are given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain, rolling and hilly Terrain
2	Land Use	Built Up 25 %, Agriculture 53%, Hilly 2%and Barren 20%
3	Earthen shoulder	1.0 m to 1.5m Width on site
4	Junctions	14 Nos.
5	Toll Plaza	Km.8+600
6	Sign boards	Sign boards are provided as per requirement
7	Road Markings	Lane markings are provided as per requirement
8	Bus Bays /shelters	16 Nos.
9	Truck Lay bye	1 Nos.
10	Street Lighting	Highway lighting provided as per requirement
11	Tree plantation	Provided

Km. 7+030

Km. 14+400

Figure 3.1: Existing Road Features

3.3 Pavement Condition

Pavement condition survey was carried out on the project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm, sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavementcondition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are

tabulated in the standard proforma as per IRC: SP-19 and is given in ANNEXURE 1. The summary of Pavement condition is given below.

Table 3.3: Pavement condition summary

From (km.)	To (km.)	Length (km.)	Condition
0+000	42+976	42.976	Good

Km. 19+400

Km. 29+200

Figure 3.2: Representative Photo of pavement Condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Condition of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The details of structures along the project highway is described below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	1 Nos.
2	Minor Bridge	17 Nos.
3	Pipe culverts	22 Nos.
4	Slab/Box Culverts	24 Nos.

For major bridge superstructure is of RCC Box Girder with RCC wall type piers and abutments resting on well/pile foundations. There are 17 minor bridges in which some are RCC solid slab type bridges, some are precast RCC T-Beam bridges with wall type abutments resting on open foundations. Also there are some RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

There is one Major bridge in the project stretch. The total length of the bridge is 99.6m with 4 spans of 24.9m. The superstructure is of RCC Box girder. the substructure is of RCC wall type piers and abutments resting on well/pile foundations. Elastomeric/Neoprene bearings are provided. Expansion joints are of buried type and RCC railing has been provided.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km)	Span	Total Length of Bridge (m)
1	21+878	4 x 24.9	99.60

The condition of the superstructure and substructure is good. The RCC wall type substructure is also in good condition. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Figure 4.1: Overall view of the major bridge at Km 21+878

4.4 Details of Minor Bridges

The details of Minor bridges in the project highway are listed below. The type of superstructure for minor bridges are RCC solid slab, Precast RCC T-Beam and cast in situ deck slab (5-girder system), RCC Box type structure.

The substructures are of PCC conventional wall type supported with open foundations, RCC wall type with open foundations.

Expansion joints are of Buried type and bearings are Tar Paper and Neoprene bearings. RCC railing and RCC crash barriers are provided on bridge deck.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage Km.	Span	Total Length of Bridge (m)	Description
1	0+607	2x5.4m.	10.8	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
2	3+650	1x6.2+1x6.9+1x7.2m.	20.3	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
3	4+128	2x4.5m.	10.1	It is twin cell RCC box type minor bridge.
4	6+925	6x8.4m.	50.4	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
5	9+616	2x12.0m.	24.0	The Minor Bridge has RCC solid slab superstructure supported on

S. No.	Chainage Km.	Span	Total Length of Bridge (m)	Description
				conventional RCC/PCC wall type piers and abutments resting on open foundations.
6	10+009	2x5.6m.	11.2	It is twin cell RCC box type minor bridge.
7	11+649	2x3.1m.	6.2	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
8	12+950	2x4.5m.	9.0	It is twin cell RCC box type minor bridge.
9	13+768	1x8.8m.	8.8	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
10	24+339	3x15.6m.	46.8	The Minor Bridge has Precast RCC T-Beam super structure with cast in situ deck slab (5-Girder System), supported on conventional RCC wall type piers and abutments resting on open foundations.
11	25+328	1x9.4m.	9.4	It has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
12	28+100	2x6.4m.	12.8	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
13	29+166	2x5.6m.	11.2	The Minor Bridge has RCC solid slab superstructure supported on conventional masonry wall type piers and abutments resting on open foundations.
14	29+975	3x15.6m.	46.8	The Minor Bridge has Precast RCC T-Beam super structure with cast in situ deck slab (5-Girder System), supported on conventional RCC wall type piers and abutments resting on open foundations.
15	35+193	3x15.6m.	46.8	The Minor Bridge has Precast RCC T-Beam super structure with cast in situ deck slab (5-Girder System), supported on conventional RCC wall type piers and abutments resting on

S. No.	Chainage Km.	Span	Total Length of Bridge (m)	Description
				open foundations.
16	37+900	2x8.4m.	16.8	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.
17	40+488	2x13.1m.	26.2	The Minor Bridge has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations.

Km. 3+650

Km. 4+128

Km. 6+925

Km. 9+616

Figure 4.2: Representative photos for minor bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1 General Description of the Slab/Box Culverts

There are 24 no's of slab / Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

Sl. No.	Chainage @Km.	Span (m)	Vent Size (m)
1	0+185	1 x 2.4	1.5
2	1+345	1 x 2.4	1.8
3	2+595	1 x 3.0	2
4	3+215	1 x 3.2	1.9
5	5+415	1 x 4.8	2.2
6	7+705	1 x 3.4	2.1
7	9+605	1 x 2.4	2.3
8	11+353	1 x 2.4	2.1
9	11+894	1 x 3.4	1.8
10	12+585	1 x 2.4	2.9
11	13+858	1 x 3.2	1.8
12	14+652	1 x 5.5	1.8
13	15+223	1 x 5.5	4
14	15+967	1 x 3.4	2.2
15	20+813	1 x 2.4	2.1
16	23+052	1 x 2.4	2
17	24+782	1 x 2.4	1.8
18	25+156	1 x 5.4	1.5
19	26+128	1 x 3.4	1.7
20	27+188	1 x 2.4	2.1
21	31+773	1 x 3.4	1.8
22	38+172	1 x 3.4	2.5
23	38+894	1 x 3.4	2.1
24	42+243	1 x 3.4	2.1

The general condition of above slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 1+345

Km. 5+415

Km. 11+353

Km. 15+967

Figure 4.3: Representative photos of Slab Culverts

4.5.2 General Description of the Pipe Culverts

There are 22 Nos of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage	Span	S. No.	Chainage	Span
1	1+120	1 x 0.9	12	23+362	1 x 1.2
2	1+330	1 x 0.9	13	23+865	1 x 0.9
3	4+376	1 x 0.9	14	26+218	1 x 0.9
4	4+738	1 x 0.9	15	26+890	1 x 0.9
5	5+832	1 x 1.2	16	28+495	1 x 0.9
6	6+600	1 x 1.2	17	32+598	1 x 0.9
7	8+163	1 x 0.9	18	36+344	1 x 0.9
8	10+875	1 x 1.2	19	37+325	2 x 1.2
9	12+218	1 x 1.2	20	38+562	2 x 1.2
10	13+400	1 x 1.2	21	39+343	2 x 1.2
11	20+015	1 x 1.2	22	42+085	2 x 1.2

The general condition of above pipe culverts is good. Some of the culverts are chocked and needs clearance as some debris/garbage was found in the vents.

Km. 37+325

Km. 42+085

Figure 4.4: Representative photos of Pipe Culverts

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design:

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

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As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	10%
2	Design Life (Years)	8 years for BT 15 years for Granular
3	Design Traffic (MSA)	5 MSA for BT 10 MSA for Granular
4	Surface course (SDBC)	25 mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

5.3 Validation of Pavement design:

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Flexible Pavement Design Traffic Validation

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2014	231	106	45	34	22	207	0.20	0.20	3	Actual
2015	263	99	46	23	18	187	0.18	0.38	4	Actual
2016	312	104	49	26	19	199	0.19	0.57	5	Actual
2017	357	109	44	27	26	207	0.20	0.77	6	Actual
2018	370	129	42	31	33	236	0.23	0.99	7	Actual
2019	373	125	41	32	35	233	0.22	1.21	8	Actual
2020	424	153	50	39	78	319	0.31	1.52	9	Actual
2021	445	160	52	41	82	335	0.32	1.84	10	Projected
2022	467	168	55	43	86	352	0.34	2.18	11	Projected
2023	490	177	58	45	90	369	0.35	2.53	12	Projected
2024	515	186	61	47	95	388	0.37	2.90	13	Projected
2025	541	195	64	49	100	407	0.39	3.29	14	Projected
2026	568	205	67	52	104	428	0.41	3.70	15	Projected

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 1.21 and 3.70 respectively. Traffic considered in pavement design (5MSA for 8 Years and 10MSA for 15 Years) is more than estimated traffic based on above actual traffic. Hence the pavement design adopted is found in order.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA and 10 MSA for a design life of 8 years for Bituminous layers (up to end of year 2019) and 15 years for granular layers respectively (up to end of year 2026), whereas the actual traffic is 1.21 MSA and 3.7 MSA for 8 years and 15 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next Major Maintenance Proposed on or before 2026.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special publication SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals. Type Designs for Intersections on National Highways, 1992

Table 6.1:Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC:SP- 88	Manual of Road Safety

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good
		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly
- Speed mitigation measures shall be provided at junction to reduce the speed, and adequate visibility shall be maintained at junctions in part of routine maintenance.
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

Km. 0+200 Over head sign

Km. 4+00 Chevron signs on the curve section

Km. 10+600 Village sign

Km. 29+900 Crash barrier at bridge section

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are done for road users along the project road is found to be in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the operation and maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plaza on the project road at Km. 8+600. Each side comprises of 3 Normal Lanes and 0ne extra wide lane. The third lane on both sides is presently used for Bikes. The lane width in normal lanes was 3.20m. The width of islands provided is 1.8m. The single canopy is provided to cover the toll lanes. . Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1:List of Equipment at Toll Plaza and Control Room

S. No	Equipment	Quantity
Lane Equipment		
1	TLC	4
2	MONITOR	4
3	PRINTER	4
4	KEYBOARD	4
5	CCTV BOOTH	4
6	INTERCOM-S	4
7	IC CAMERA	4
8	AUDIT CAMERA	4
9	BARRIER	4
10	UFD	4
11	TRAFFIC LIGHT	4
12	OHLS	4
13	HIGHT SENSOR	4
14	TREADLE	4
Control Room		
1	MONITOR	5
2	CPU	6
3	SERVER	1
4	KEYBOARD	3
5	SCANNER	1
6	PRINTER	1
7	LCD WITH REMOTE	1
8	MOUSE	4
9	INTERCOM-S	2
10	NVR	1
11	DVR MPRDC	1
12	4 PORT NETWORKING Switch	1
13	16 Port Networking Switch	1
14	BIOMETRIC MACHINE	1
15	AC	1

7.3 Vehicles:

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2 : List of Vehicles

S. No.	Vehicle Type	Make & Model	No.
1	Patrol Vehicle	TVS Bike	1
2	Ambulance	Mahindra Genio	1

Toll plaza & Toll Building

Sign boards at Toll plaza

Figure 7.1: 8+600 Toll Plaza

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past six years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2015	95868	36124	16919	8561	6723	164195
2016	114271	38124	17817	9670	7053	186935
2017	130186	39639	16232	9981	9633	205671
2018	135022	47098	15391	11434	12118	221063
2019	136219	45509	14930	11648	12839	221145
2020	155073	55909	18235	14129	28534	271880
AACGR (%)						10.87%

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given in the following table.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	103681	2877	48527	16099	14081	28515	213780
Toll Revenue collection in Rs.	2592025	230125	2911620	1978005	2085790	8553585	18351150

The figures shown in Table 8-1 are Real time traffic data on project road for the past six years and the growth rate is calculated to be 10.87%. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8-2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8-3.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	292	133	44	39	78	294	292	199	132	116	352	799	Actual
2021	307	140	46	41	82	308	307	209	139	122	369	839	Projected
2022	322	147	49	43	86	324	322	220	146	128	388	881	Projected
2023	338	154	51	45	90	340	338	231	153	134	407	925	Projected
2024	355	162	54	47	95	357	355	242	161	141	427	971	Projected
2025	373	170	56	49	100	375	373	255	169	148	449	1020	Projected
2026	391	178	59	52	105	394	391	267	177	155	471	1071	Projected
2027	411	187	62	54	110	413	411	281	186	163	495	1124	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in table 8-4

Table 8.4: Toll Revenue inputs

Particular	Toll plaza
Location	8.600
4 lane length in km	0
2 lane length in km	42.976
Agreement Date	29-06-2011
Appointed Date	16.12.2011
Concession period	15
Commercial operation date	09-06-2012

Particular	Toll plaza
Concession End Date	15-12-2026
Traffic study year	2020
Vehicle Type	**AADT**
Car/Jeep/Van	292
2-axle Bus	133
LCV/LGV	44
2A-Truck	39
MAV (2A-6A)	78
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP @ Km. 8.600	Remarks
2019-20	183.512	Actual
2020-21	197.692	Projected
2021-22	216.612	Projected
2022-23	239.460	Projected
2023-24	261.570	Projected
2024-25	280.199	Projected
2025-26	303.482	Projected
2026-27	231.875	259 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project Highways by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to the commencement of the month in which maintenance is to be carried out.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project Highway and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.

3 Carrying out preventive and periodic maintenance of the Project Highway;
4 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6 Functioning of the lighting system;
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Parking Lay bays
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefore;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

One lane in each direction is currently operational and the extra wide lane is opened only for wide vehicles. The tolling is manned by two people per direction per shift with a day having two shifts. Toll Manager takes care of the daily operation and carries out the task of patrolling on bike. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project Highway

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.
The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.
The details of periodic maintenance schedule is given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2019	BC Overlay is done
2	2nd Periodic Maintenance	2026	Planned to execute

9.6 Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and

e. Flood damage restoration works, etc.

9.7 Review of Test Reports:

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of May, 2020. As per Schedule K of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Nov, 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.8 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.177	0.119		0.34	**0.64**
2021	0.182	0.123		0.35	**0.66**
2022	0.187	0.127		0.36	**0.68**
2023	0.192	0.130		0.37	**0.70**
2024	0.199	0.134		0.38	**0.72**
2025	0.205	0.138		0.39	**0.74**
2026	0.211	0.143	6.58	0.41	**7.34**
2027	0.154	0.104		0.30	**0..56**

Total	**1.51**	**1.02**	**6.58**	**2.91**	**12.01**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D
- operation and maintenance of the Project Highway in accordance with the provisions of Concession Agreement (CA)
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project Highway upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certificate given in **ANNEXURE 7.**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8.**

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals initiating during construction period and consented by the MPRDC. Details are provided in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project Highway
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any un authorized use of the Project Highway.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K (the"**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall

separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 4.71 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1st Annuity	1-Jan-13
2	2nd Annuity	18-Jun-13
3	3rd Annuity	17-Dec-13
4	4th Annuity	9-Jun-14
5	5th Annuity	18-Dec-14
6	6th Annuity	17-Jun-15
7	7th Annuity	17-Dec-15
8	8th Annuity	15-Jun-16
9	9th Annuity	17-Dec-16
10	10th Annuity	27-Jun-17
11	11th Annuity	28-Dec-17
12	12th Annuity	19-Jun-18
13	13th Annuity	13-Dec-18
14	14th Annuity	20-Jun-19
15	15th Annuity	10-Dec-19
16	16th Annuity	9-Jun-20
17	17th Annuity	18-Dec-20

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 9.**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Policy
			From	To	
Standard Fire & Special Perils Policy	The Oriental Insurance Co Ltd	171200/11/2021/351	10.1.2021	9.1.2022	Constructed road from 0.00Km to 43.5 Km
EEI	The Oriental Insurance Co Ltd	171200/44/2021/42	8.09.2020	7.09.2021	Electronic Equipment
Fire Industrial All Risk Policy	The Oriental Insurance Co Ltd	171200/11/2021/352	10.1.2021	9.1.2022	Roads and Bridges
Employees Compensation Insurance Policy	HDFC Ergo General Insurance Co Ltd	3114203387855600000	19.5.2020	18.5.2021	Insurance for Road paving, Tarring and Road making of employees of DBL and sub-Contractor engaged in DBL

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. Major structural defects are not noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted from Schedule N of CA, the traffic growth observed is 10.87%, where as 5% growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Km.8+600 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards &other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried out in 2019and next MM is scheduled in 2026.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000								G		E/P	F	F	LD	F	
1+000	2+000								G		E	F	F	NO	PF	
2+000	3+000								G		E	F	F	ULD	PF	
3+000	4+000								G		E	F	F	ULD	PF	
4+000	5+000								G		E	F	F	ULD	PF	
5+000	6+000	1	2						F		E	F	F	ULD	PF	
6+000	7+000								G		E/P	F	F	LD	F	
7+000	8+000								G		E	F	F	ULD	PF	
8+000	9+000								G		E	F	F	ULD	PF	
9+000	10+000								G		E	F	F	ULD	PF	
10+000	11+000								G		E	F	F	ULD	PF	
11+000	12+000								G		E/P	F	F	LD	F	
12+000	13+000								G		E	F	F	ULD	PF	
13+000	14+000								G		E	F	F	ULD	PF	
14+000	15+000								G		E	F	F	ULD	PF	
15+000	16+000		2						G		E	F	F	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
16+000	17+000								G		E	F	F	ULD	PF	
17+000	18+000								G		E	F	F	ULD	PF	
18+000	19+000								G		E/P	F	F	LD	F	
19+000	20+000								G		E	F	F	ULD	PF	
20+000	21+000								G		E	F	F	ULD	PF	
21+000	22+000								G		E	F	F	ULD	PF	
22+000	23+000								G		E	F	F	ULD	PF	
23+000	24+000								G		E/P	F	F	LD	F	
24+000	25+000								G		E	F	F	ULD	PF	
25+000	26+000								G		E	F	F	ULD	PF	
26+000	27+000								G		E	F	F	ULD	PF	
27+000	28+000								G		E	F	F	ULD	PF	
28+000	29+000								G		E	F	F	ULD	PF	
29+000	30+000								G		E	F	F	ULD	PF	
30+000	31+000	1	3						F		E	F	F	ULD	PF	
31+000	32+000								G		E	F	F	ULD	PF	
32+000	33+000								G		E	F	F	ULD	PF	
33+000	34+000								G		E	F	F	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
34+000	35+000								G		E	F	F	ULD	PF	
35+000	36+000								G		E	F	F	ULD	PF	
36+000	37+000								G		E	F	F	ULD	PF	
37+000	38+000								G		E	F	F	ULD	PF	
38+000	39+000								G		E	F	F	ULD	PF	
39+000	40+000								G		E	F	F	ULD	PF	
40+000	41+000		2						G		E	F	F	ULD	PF	
41+000	42+000								G		E	F	F	ULD	PF	
42+000	42+976								G		E	F	F	ULD	PF	

Annexure 2: Condition of structures

S. No	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching	Toe wall
1	Km. 21+878	Major Bridge	Good	Good	Good	Good	Fair	Good	Good	Good	Good
2	Km. 0+607	Minor Bridge	Good	Good	Good	Good	Fair	Good	-	Fair	Good
3	Km. 3+650	Minor Bridge	Good	Good	Good	Good	Fair	Good	-	Fair	Good
4	Km. 4+128	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
5	Km.6+925	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
6	Km. 9+616	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
7	Km. 10+009	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
8	Km. 11+649	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
9	Km. 12+950	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
10	Km. 13+768	Major Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
11	Km. 24+339	Minor Bridge	Good	Good	Good	Good	Good	Good	Good	Fair	Good
12	Km. 25+328	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
13	Km. 28+100	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
14	Km. 29+166	Major Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
15	Km. 29+975	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
16	Km. 35+193	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
17	Km. 37+900	Major Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good
18	Km. 40+488	Minor Bridge	Good	Good	Good	Good	Fair	Good	Good	Fair	Good

Annexure 3 : Condition of Box/Slab/ Hume Pipe Culverts

Condition of Box/Slab Culverts

S. No	Chainage	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	0+185	Good	Fair	Fair	Fair	Fair
2	1+345	Good	Good	Fair	Good	Fair
3	2+595	Good	Good	Fair	Good	Fair
4	3+215	Good	Good	Fair	Fair	Fair
5	5+415	Good	Good	Fair	Fair	Fair
6	7+705	Good	Good	Fair	Fair	Fair
7	9+605	Good	Good	Fair	Good	Fair
8	11+353	Good	Good	Fair	Good	Fair
9	11+894	Good	Good	Fair	Fair	Fair
10	12+585	Good	Good	Fair	Fair	Fair
11	13+858	Good	Good	Fair	Good	Fair
12	14+652	Good	Good	Fair	Good	Fair
13	15+223	Good	Good	Fair	Good	Fair
14	15+967	Good	Good	Fair	Good	Fair
15	20+813	Good	Good	Fair	Good	Fair
16	23+052	Good	Good	Fair	Good	Fair
17	24+782	Good	Good	Fair	Good	Fair
18	25+156	Good	Good	Fair	Good	Fair
19	26+128	Good	Good	Fair	Fair	Fair
20	27+188	Good	Good	Fair	Good	Fair
21	31+773	Good	Good	Fair	Good	Fair
22	38+172	Good	Good	Fair	Fair	Fair
23	38+894	Good	Good	Fair	Fair	Fair
24	42+243	Good	Good	Fair	Fair	Fair

Condition of Hume Pipe Culverts

S. No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	1+120	Good	Good	Fair	Fair
2	1+330	Good	Good	Fair	Fair
3	4+376	Good	Fair	Fair	Fair
4	4+738	Good	Good	Fair	Fair
5	5+832	Good	Fair	Fair	Fair
6	6+600	Good	Good	Fair	Fair
7	8+163	Good	Fair	Fair	Fair
8	10+875	Good	Fair	Fair	Fair
9	12+218	Good	Good	Fair	Fair
10	13+400	Good	Good	Fair	Fair
11	20+015	Good	Fair	Fair	Fair
12	23+362	Good	Fair	Fair	Fair
13	23+865	Good	Fair	Fair	Fair
14	26+218	Good	Good	Fair	Fair
15	26+890	Good	Good	Fair	Fair
16	28+495	Good	Good	Fair	Fair
17	32+598	Good	Fair	Fair	Fair
18	36+344	Good	Good	Fair	Fair
19	37+325	Good	Good	Fair	Fair
20	38+562	Good	Fair	Fair	Fair
21	39+343	Good	Fair	Fair	Fair
22	42+085	Good	Good	Fair	Fair

Annexure 4: Estimation of Toll Revenue

1. Toll Plaza-I: Tollable Traffic considered for Toll Revenue in No. s (AADT):

• Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km.8+600
Car/Taxi/Van	292
LCV	133
Bus	44
Truck	39
MAV	78

2. Traffic Growth Rates

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• Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2021-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00

3. Trip Distribution Ratio as per the Toll Data.

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• Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	97%	3%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. Toll Rates:

• Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km 8+600
Car/Taxi/Van	25
LCV	60
Bus	125
Truck	150
MAV	300

Toll Plaza Revenue (Km.8+600):

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	2592025	230125	2911620	1978005	2085790	8553585	18351150	183.512	183.512
2020-21	2721626	256733	3057201	2197514	2291683	9244479	19769236	197.692	381.204
2021-22	2857708	269570	3477566	2396135	2483888	10176383	21661249	216.612	597.816
2022-23	3600712	299698	3651444	2609125	2771088	11013977	23946044	239.460	837.277
2023-24	3780747	332166	4128941	2837423	2995220	12082497	26156994	261.570	1098.847
2024-25	3969784	348774	4335388	3082029	3234838	13049097	28019910	280.199	1379.046
2025-26	4168274	385487	4877312	3344001	3490929	14082151	30348153	303.482	1682.527
2026-27	4376687	404761	5121177	3624466	3764542	15385701	23187479	231.875	1914.402

Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S.No.	Item	Frequency	Unit	No	Frequency per year	Qty.	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	42.976	12	4	350	721,997	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Km	4.245	24	4	350	142,632	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	4.245	52	1	1939	428,015	01 Nos of Labour
6	ROW Cleaning	Half yearly	Km	21.488	2	5	350	75,208	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	46	2	2	650	119,600	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	42.976	4	1	350	60,166	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	16	6	1	350	33,600	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	2.00	6	15	350	63,000	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	17	2	2	350	23,800	02 Nos of Labour for removal of vegetation/Structure
								1,668,018	
	EQUIPMENT SUPPLY								
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								75,000	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle,

S.No.	Item	Frequency	Unit	No	Frequency per year	Qty.	Rate	Amount	Remarks
									considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
3	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
								1,765,018.00	

Incidental cost for 1 year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	1002.77333	516	517,431	10 % of Total Project length on B/S for 1 year
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	644.64	225	435,132	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Milestone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	42.976	4	11	2250	99,000	5 % of total stones per year (unable to understand the backup)
		Total amount for 1 Year						1,193,563	

Operational Expenses

S NO	PARTICULARS	Amount
1	Man Power	₹ 2,256,000
2	Fuel for Generator & Vehicles	₹ 696,000
3	Electricity	₹ 330,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 38,733
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	₹ 3,405,733

Abstract of Major Maintenance

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
Major Maintenance - Highway	01-04-2026	**5,69,12,865**	5.20	3.0%	**6,57,91,272**	**6.58**
				Total	**₹ 6,57,91,272**	**6.58**

Major Maintenance BOQ

Sl. No.	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	-	14.00		-	14.00	
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00		-	7,480.00	
3	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	3,919.59	6,800.00	2,66,53,195	3,919.59	6,800.00	2,66,53,195
4	Providing and laying of Micro surfacing		1,56,783.50	160.00	2,50,85,360	1,56,783.50	160.00	2,50,85,360
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	

Sl. No.	DESCRIPTION	Unit	1st Cycle			2nd Cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
	Total				**5,17,38,555**			**5,17,38,555**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	10,027.73	516.00	51,74,310	10,027.73	516.00	51,74,310
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**51,74,310**		-	**51,74,310**
	Grand Total				**5,69,12,865**			**5,69,12,865**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/S-B/2010/ 437
Bhopal, dated 15 April, 2011

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal.
Fax - 4247574

Sub: **Regarding, Strengthening, Widening, Maintaining and Operating of Sardarpur-Badnawar Road on BOT (Toll + Annuity)basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of **Sardarpur-Badnawar Road on BOT (Toll + Annuity)basis**. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. 4.71 crores **(Rupees four crores seven one lacs only)** as Annuity Amount payable in terms of Clause.25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Thanking you,

Yours faithfully

Encl: **Duplicate copy of LoA.**

(Neeraj Vijay
Dy.General Manager

Accepted
(Kundan K. Das)
27/04/2011

DILIP BUILDCON LIMITED * BHOPAL *

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

MSV INTERNATIONAL INC.,
D-7, South City-1, Gurgaon-122001 Haryana, India
Tel. 0091-124-4002603, 04
Fax : 0091-124-4002605
E-mail : info@msvgroup.com

ISO 9001 : 2008 Certified Company

Bhopal Office :
7, Rishi Nagar, Char Imli,
Bhopal (M.P.)
Phone : 0755-2430131

PROVISIONAL CERTIFICATE

1. **Mr. Rajeev k Bidwai** acting as Independent Engineer, under and in accordance with the Concession Agreement Dated 30 July 2011 for development of the Sardarpur-Badnawer-Road section (km 1 to 42.990) of State Highway No. 35 (the " Project Highway") on desigh, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through DBL Sardarpur Badnawer Tollways Ltd. hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.

2. Constructions Works that were found to be incomplete and/ of deficient have been specified in the Punch List appended hereto and the Concessionaire has agreed and accepted that it shall complete and /or rectify all such works in the time and manner set forth in the Agreement .(Some of incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.

3. In view of the foregoing , I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof and in terms of the Agreement the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the 9 June 2012.

ACCEPTED, SIGNED, SEALED AND DELIEVERED
For and on behalf of

Nitin Shrivastava
DBL Sardarpur Badnawar Tollways Ltd,
E- 5/99, Arera Colony Bhopal (M.P.)

SIGNED, SEALED AND DELIEVERED
for and on behalf of
INDEPENDENT ENGINEER by:

Rajeev K Bidwai
MSV International Inc.
7 Rishi Nager Bhopal (M.P.)

Reg. Office : 11101, NE 60th Street, Kirkland, Washington - 980337528, USA, Telefax : 001-425-488-4442
E-mail : info@msvgroup.com

Annexure 8: Completion Certificate

MSV INTERNATIONAL INC.,
D-7, South City-1, Gurgaon-122001 Haryana, India
Tel. 0091-124-4002603, 04
Fax : 0091-124-4002605
E-mail : info@msvgroup.com

ISO 9001 : 2008
Certified Company

Bhopal Office :
7, Rishi Nagar, Char Imli,
Bhopal (M.P.)
Phone : 0755-2430131

COMPLETION CERTIFICATE

1. I, Rajeev K Bidwai, acting as Independent Engineer, under and in accordance with the Concession Agreement dated July 30, 2011 (the "Agreement"). For Two laning of the Sardarpur-Badnawar section (km 1 to42.990) of state Highway No. 35 (the "Project Highway") on build, operate and transfer (BOT) basis, through (M/s Dilip Buildcon, Bhopal), hereby certify that the Tests specified in Article 14 and Schedule –I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and reliably placed in commercial service of the Users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the project Highway is hereby declared fit for entry in to commercial operation on this the 5 day of September 2012.

SIGNED SEALED AND DELIVERED

Authorized Representative
of Independent Engineer

Pushkar Malik
Vice President
MSV International, Inc.
D-7 South City-I
Gurgaon (Haryana)

For and on behalf of
INDEPENDENT ENGINEER by:

Signature
Name : Rajeev K Bidwai
Designation : Team Leaader
Address : 7 Rishi Nagar, Char Imli,
Behind Akshay Hospital
Bhopal (M.P.)

Reg. Office : 11101, NE 60th Street, Kirkland, Washington - 980337528, USA, Telefax : 001-425-488-4442
E-mail : info@msvgroup.com

Annexure 9: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Jan 8, 2021 17:56:01 IST
Location: NOIDA
Reason: Signing Policy for OICL

STANDARD FIRE & SPECIAL PERILS POLICY SCHEDULE

Policy No	: 171200/11/2021/351	Prev Policy No	: 171200/11/2020/518
Cover Note No	: -	Cover Note Dt	:
Insured's Name	: 103408921 - DBL Sardarpur Badnawar Tollways Ltd. (GSTIN: 23AAECD0368P1ZF)	Issuing Office	: 171200 - CSU Vadodara (GSTIN: 24AAACT0827R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate,Chunabhatti, Kolar Road, Bhopal462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2438854 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD
Address	: 661-662 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,IBOE NO 9998298111 PHONE NO 0265-2352374,BARODA,GUJARAT,390007
Tel/Fax/Email	

Period of Insurance : FROM 00:00 ON 10/01/2021 TO MIDNIGHT OF 09/01/2022

Collection No & Dt : DC_I_IND 3214001319 - 08/01/2021 GST INVOICE NO :2419762939 UIN :0

Gross Premium : 91,613 GST : 16,480 Stamp Duty : .5 Total : 1,08,103

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CSU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	40.00

RISK DETAILS

1 Location of the Risk : Fully Constructed road from 0.0 Km Sardarpur and ends at 43.6 Km Badnawar ¿ Intermediate/ Two laning with paved shoulder of Sardarpur- Badnawar on BOT (TOLL+Annuity) basis under State Govt. of Madhya Pradesh

MADHYA PRADESH
DHAR
454111
DHAR

Risk Description : Roads

Place :
Date : 08/01/2021

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 3

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This Document is Digitally Signed

Signer: ATUL [illegible]
Date: Fri, Jan 8, 2021 [illegible] IST
Location: INDIA
Reason: Signing Policy for OICL

Attached to and forming part of policy number 171200/11/2021/351

: [illegible]

Block Description : 1

SMI Desc	Nature of Stock	Sum Insured
Toll Plaza Building and its assets & Toll Booths, TMS, HTMS, Office & IT Equipment, Road Furniture, Fixtures, Electrical Poles, Lighting & Fittings, Signboard, Safety Barrier, concrete barrier, protection barrier(Full desc as per Annexure)		9,17,97,062

Cover Wise Details : Cover Name	Sum Insured	Premium
STFI Cover	9,17,97,062	32,129.97
Fire Basic Cover	9,17,97,062	50,488.00
Earth Quake Cover	9,17,97,062	4,590.00
Impact Damage Due To Insured's Own Rail/Road Vehicles, Fork Lifts, Cranes, Bladders And The Lifts And Articles Dropped Therefrom	9,17,97,062	4,405.00

SCHEDULE OF PREMIUM

TOTAL PREMIUM	91,613.00
ADD :IGST	16,490.00
STAMP DUTY	0.50
TOTAL AMOUNT	1,08,103.00

Total Sum Insured In Words : Indian Rupees Nine Crores Seventeen Lakhs Ninety-Seven Thousand Sixty-Two Only
Total Premium In Words : Indian Rupees One Lakh Eight Thousand One Hundred Three Only

Excess / Deductible :
The following minimum deductibles are applicable based on per Location Sum Insured of the policy.
(except dwelling with individual owners)

Sum Insured Band per Location (Including endorsements, if any)	Material Damage	
	% Of Claim	Subject to Minimum deductible in INR.
Upto 10 Cr	5	10,000.00
Above 10 Cr and upto 100 Cr	5	25,000.00
Above 100 Cr and upto 1500 Cr	5	500,000.00
Above 1500 Cr and upto 2500 Cr	5	2,500,000.00
Above 2500 Cr	5	5,000,000.00

Place :
Date : 08/01/2021

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 2 of 3

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Signer: ATUL JERATH
Date: Fri, Jan 8, 2021 17:53:10 IST
Location: NOIDA
Reason: Signing Policy for OICL

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	: 171200/11/2021/352	Prev Policy No	: 171200/11/2020/517
Cover Note No	:	Cover Note Dt	:
Insured's Name	: 103409021 - DBL Sardarpur Badnawar Tollways Ltd. (GSTIN: 23AAECD0366P1ZF)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate,Chunabhatti, Kolar Road, Bhopal462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2438654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 16/01/2021 TO MIDNIGHT OF 09/01/2022

Collection No & Dt : DC_I_IND 3214001319 - 08/01/2021 GST INVOICE NO :2419762722 UIN :0

Gross Premium : 11,51,102 GST : 2,07,196 Stamp Duty : .5 Total : 13,58,300

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	40.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : ROADS AND BRIDGES
Fully Constructed road from 0.0 Km Sardarpur and ends at 43.5 Km Badnavar ¿ Intermediate/ Two laning
with paved shoulder of Sardarpur- Badnawar on BOT (TOLL+Annuity) basis under State Govt. of Madhya Pradesh

Deductible :

Risk Description : Roads

Stock Description : 1

SMI Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges)Underpasses, Culverts, drainages, Utilities, Slabs Box, Causeways, Machineries Such as DG Sets(Full desc As per annexure)		120,81,02,938

Cover Wise Details	Sum Insured	Premium

Place :
Date : 08/01/2021

For and on behalf of
The Oriental Insurance Company Limited

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In case of any query regarding the Policy please call Toll Free No. 1800 11 6485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupees

Page 1 of 4

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Signer: ATUL JERATH
Date: Fri, Jan 8, 2021 17:53:10 IST
Location: NOIDA
Reason: Signing Policy BY OICL

Attached to and forming part of policy number 171209/11/2021/362

Cover Wise Details	Sum Insured	Premium
Fire Basic Cover	120,61,02,938	6,64,456.62
STFI Cover	120,61,02,938	4,22,836.03
Earth Quake	120,61,02,938	60,405.15

SECTION III : IAR-BREAKDOWN SECTION

Item Description	Identification No.	Year of Make
AS PER LIST		

SMI Description	Sum Insured
Machinery Sum Insured	1,00,00,000

Cover Wise Details	Sum Insured	Premium
Breakdown Cover	1,00,00,000	2,500.00

SECTION II : IAR-FLOP SECTION

Type of Industry	: CONTINUOUS INDUSTRY	Basis of Indemnity	: TURNOVER BASIS
Indemnity Period	: 12 Months	Annual Gross Profit	: 1000000
Total Sum Insured	: 10,00,000	Time Exclusion	:

Cover Wise Details	Sum Insured	Premium
Fire LOP-Basic Cover	10,00,000	904.00

SCHEDULE OF PREMIUM

Fire Basic Cover	6,64,456.62
ADD :STFI Cover	4,22,836.03
ADD :Earth Quake	60,405.15
Fire LOP-Basic Cover	904.00
Breakdown Cover	2,500.00
TOTAL PREMIUM	11,51,102.00
ADD :IGST	2,07,198.00
STAMP DUTY	0.60
TOTAL AMOUNT	13,58,300.00

Sum Insured in Words :
Machinery Damage : Indian Rupees One Hundred Twenty Crores Eighty-One Lakhs Two Thousand Nine Hundred Thirty-Eight Only (This Sum Insured includes Machinery Breakdown Sum Insured Indian Rupees Only)

Place :
Date : 08/01/2021

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 6485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupees

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Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 11:32:02 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/42**	**Prev Policy No**	:
Cover Note No	: ER1700203532	Cover Note Dt	: 08/09/2020
Insured's Code	: 103409921	Issuing Office Code	: 171200
Insured's Name	: DBL Sardarpur Badnawar Tollways Ltd. (GSTIN: 23AAECD0386P1ZF)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot no. 5, Inside Govind Narayan Singhgate,Chunabhatti, Kolar Road, Bhopal462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000850 - 17/09/2020 GST INVOICE NO :2419487428 UIN :0

Gross Premium : 1,990 GST : 358 Stamp Duty : 1 Total : 2,348

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 44,21,979

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Sardarpur to Badnawar

MADHYA PRADESH - 454001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		44,21,979

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 17/09/2020

For and on behalf of
The Oriental Insurance Company Limited

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In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 2

Annexure 10: Change of Scope

MINUTES OF MEETING AT MPRDC BHOPAL

Meeting of advisory committee of MPRDC has been conducted in the office of MPRDC on dated 20th July 2012 for Change of Scope for Rehabilitation & strengthening of Sardarpur-Badnawar project on (Toll + Annuity) Basis.

Following officials were present in the meeting:-

1. Shri A.S.Chendke (Technical Advisor, MPRDC.)
2. Shri Anil Chansoria (Chief Engineer (BOT), MPRDC)
3. Shri Arun Paliwal (DGM (BOT), MPRDC)
4. Shri P.D. Vaishya (Divisional Manager MPRDC Indore)
5. Shri. Rajeev K Bidwai (Team Leader, Independent Engineer.)
6. Shri Nitin Shrivastava (Authorized representative of DBCL)

The work of change of scope recommended by Independent Engineer vide its letter no. MSV/BPL/INDORE ZONE/2012/202, DATED 04-06-2012, has been discussed by the committee & decisions taken for each work are recorded below:-

S. NO.	Chainage	Existing details	Provision as per schedule 'B'	Reasons & Recommendation of Independent Engineer	Decision of Committee
1	4+125	Existing Chainage 4+125, Minor bridge with Solid Slab (2x 6.8 m) span, Total Outer width of Bridge 8.3 m..	Widening repair & strengthening of minor bridge up to 12 m.	(i) Reinforcement fully rusted and bond with concrete of slab is very weak. Concrete is porous and disintegrated simply touching by hand. (ii) Abutment & piers of this minor bridge is made from stone masonry its condition is poor holes & plants have seen at many places in wall. (iii) Stone Masonry Foundation was damaged. (iv)Structure is very weak ,So recommended for Reconstruction with span of 10 m.and 12 m width bridge in place of widening is completed . There will be positive change of scope of reconstruction 10 m, span & 12 m. width and widening of existing structure will be negative variation.	Committee is agree with the comments of IE and recommended for reconstruction (with 10 m. span & 12 m. width) under positive change of scope & negative variation for widening of existing structure. **Net valuation of –ve & +ve variation may be worked out by IE.**
2	7+000	Existing Chainage 7+000,Minor bridge with Solid Slab (6x 8.50 m) span, Total Outer width of Bridge 8.3 m	Widening of minor bridge repair & strengthening upto 12 m.	(i) Reinforcement fully rusted and bond with concrete of slab is very weak. Concrete of super structure is porous and disintegrated simply touching by hand. (ii) Stone masonry was having open joints so widening of structure with jacketing of existing this work is done as per scope of work hence no change of scope. (iii) widening has been done as per scope of work (iv) It is recommended to replace super structure slab of 8.3 m. width under +ve change of scope.	Committee is agree with the comments of IE and recommended for replacement of, super structure slab of 8.3 m. wide under +ve change of scope. **Net valuation of –ve & +ve variation may be worked out by IE.**

5	12+950	Existing Chainage 12+950,Minor bridge with Solid Slab (1x 8 m) span, Totle Outer width of Bridge 8.3 m	Widening repair & strengthening of minor bridge upto 12 m.	(i) Reinforcement fully rusted and bond with concrete of slab is very weak. Concrete is porous and disintegrated simply touching by hand. (ii) Abutment & piers of this minor bridge is made from stone masonry its condition is poor holes & plants have seen at many places in wall. (iii) Stone Masonry Foundation was damaged. (iv)Structure is very weak ,So recommended for Reconstruction with span of 10 m.& to 12 m wide bridge in place of widening. There will be positive change of scope of reconstruction 10 m, span & 12 mwidth. widening of existing structure will be negative variation.	Committee is agree with the comments of IE and recommended for reconstruction (with 1 X 10 m. span & 12 m. width) under positive change of Scope & negative variation for widening of existing structure. **Net valuation of –ve & +ve variation may be worked out by IE.**
6	35+225	Existing Chainage 35+225,Minor bridge with Solid Slab (6x 8.60 m) span, Totle Outer width of Bridge 8.3 m	Widening repair & strengthening of minor bridge upto 12 m.	(i) Reinforcement fully rusted and bond with concrete of slab is very weak. Concrete is porous and disintegrated simply touching by hand. (ii) Abutment & piers of this minor bridge is made from stone masonry its condition is poor holes & plants have seen at many places in wall. (iii) Stone Masonry Foundation was damaged. (iv)Structure is very weak ,So recommended for Reconstruction with span of 3 X15.67 m. & with increase in the height of bridge 12 m. wide bridge in place of widening. There will be positive change of scope of reconstruction 3 X 15.67 m, span & 12 m width. widening of existing structure will be negative variation.	Committee is agree with the comments of IE and recommended for reconstruction (with 3 X 15.67 m. span & 12 m. width)under positive change of Scope & negative variation for widening of existing structure. **Net valuation of –ve & +ve variation may be worked out by IE.**
7	35+200 to 36+650	Single lane road is existing through Rajod town is a length 1.6 km.	Realignment of Rajod town of 7.0 m. width	It was decided in the review meeting at MPRDC's office at Bhopal to construct two lane road in town section of Rajod . Reconstruction of existing single lane road to two lane is recommended under change of scope .	Committee is agreeing with the Proposal and recommended for reconstruction of existing single lane road to two lane road under change of scope under positive change of variation. **Net valuation of –ve & +ve variation may be worked out by IE.**

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3	9+616	Existing Chainage 9+616 ,Minor bridge with Solid Slab (3x 7.30 m) span, Total Outer width of Bridge 8.3 m	Widening repair & strengthening of minor bridge upto 12 m.	(i) Reinforcement fully rusted and bond with concrete is porous and disintegrated simply touching by hand. (ii) Abutments & piers of this minor bridge was made from stone masonry its condition is poor. (iii) Stone Masonry Foundation was damaged. (iv) In all structure is very weak. So recommended for reconstruction of 2 X 12 m. span bridge width 12 m. There will be positive change of scope of reconstruction 2 X 12 m, span &12 m width .widening of existing structure will be negative variation.	Committee is agree with the comments of IE and recommended for reconstruction (with 2 X 12 m. span & 12 m. width) under positive change of scope. & negative variation for widening of existing structure. **Net valuation of –ve & +ve variation may be worked out by IE.**
4	10+003	Existing Chainage 10+003,Minor bridge with Solid Slab (2x 7.30 m) span, Totle Outer width of Bridge 8.3 m	Widening repair & strengthening of minor bridge upto 12 m.	(i) Reinforcement fully rusted and bond with concrete of slab is very weak. Concrete is porous and disintegrated simply touching by hand. (ii) Abutment & piers of this minor bridge is made from stone masonry its condition is poor holes & plants have seen at many places in wall. (iii) Stone Masonry Foundation was damaged. (iv)Structure is very weak ,So recommended for Reconstruction with span of 12 m. & width 12 m.to 12 m wide bridge in place of widening. There will be positive change of scope of reconstruction 12 m, span & 12 m. Width and widening of existing structure will be negative variation.	Committee is agree with the comments of IE and recommended for reconstruction (with 1 X 12 m. span & 12 m width)under positive change of scope& negative variation for widening of existing structure. **Net valuation of –ve & +ve variation may be worked out by IE.**

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In- Principle approval under change of scope is recommended for above works as per remark of last column. Further, it has been instructed to Independent Engineer and Concessionaire to prepare complete as built drawings & financial implication and submit within 15 days time positively.

Shri Nitin Shrivastav (Authorized representive Of DBCL)	Shri. Rajeev K Bidwal (Team Leader) Independent Engineer	Shri P.D.Vaishya Divisional Manager (MPRDC) Indore	Shri Arun Paliwal (DGM (BOT), (BOT), MPRDC)	Shri Anil Chansoria (Chief Engineer) MPRDC Bhopal	Shri A.S.Chendke (Technical Advisor) MPRDC Bhopal

SHREM FINANCIAL PRIVATE LIMITED

Development of Patan–Tendukheda – Rehli Road Section (SH-15) in the State of Madhya Pradesh on BOT(Toll+Annuity) Basis.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Patan–Tendukheda – Rehli Road Section (SH-15) in the State of Madhya Pradesh on BOT(Toll+Annuity) Basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Patan-Rehli	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

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This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL PATAN REHLI TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing road "Patan-Tendukheda-Rahli" section of SH-15 in the State of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 1st September, 2015.

Project Road starts at Rehli–Gorjhamar-Patan Chowk from Km 31+000 and cross the junction at Km 113+400 of Rehli Gourjhamar road including bypass of Rehli which is about 4.400 Kms and terminates at Km 38+100 on Sagar – Rehli State Highway (SH-15A) in the state of Madhya Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis. Project Location map is given at **Figure 1.1**.

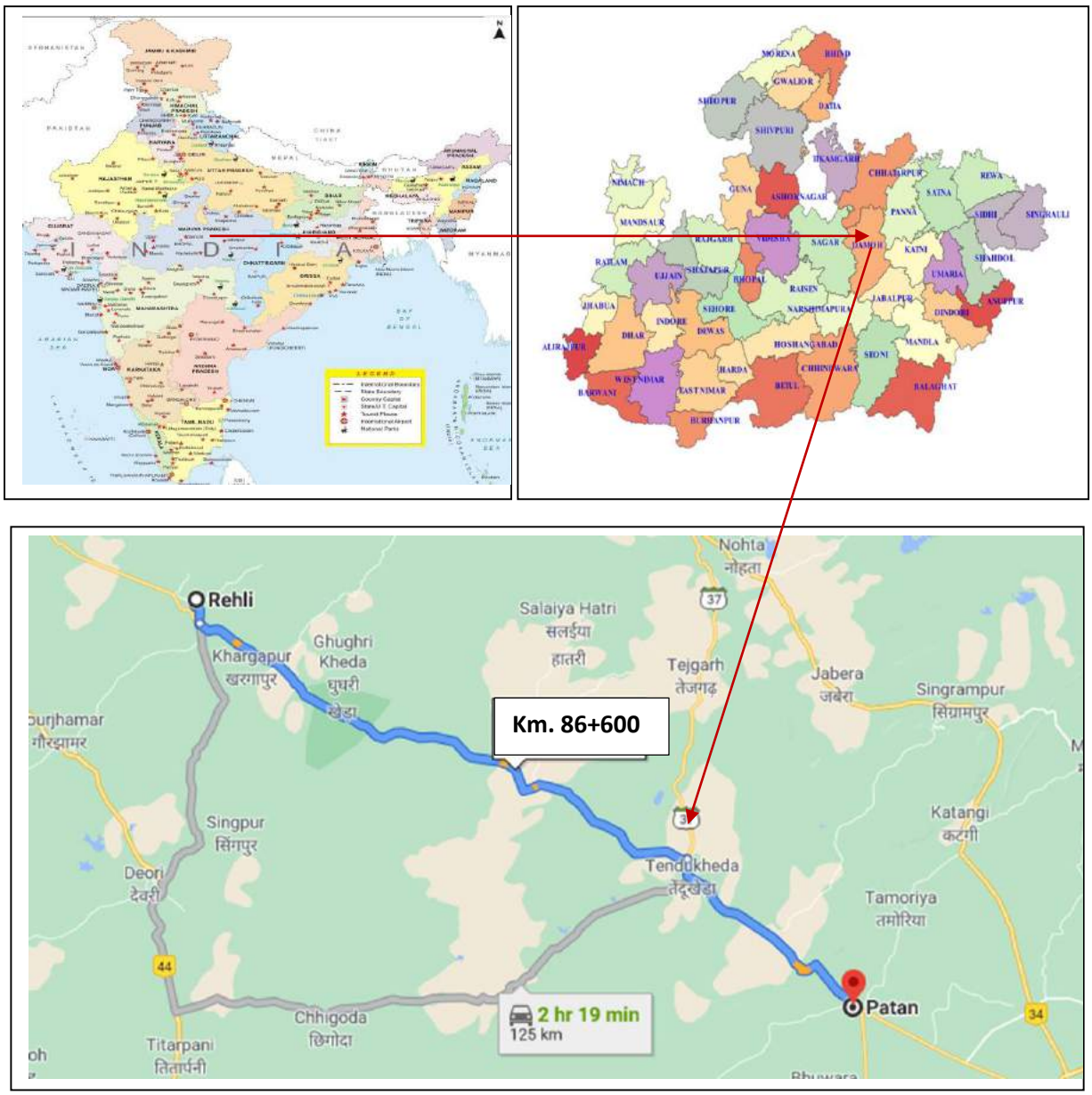

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL PATAN REHLI TOLLWAYS LIMITED vide agreement dated 26.03.2018

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection Etc.

1.2 The Project Data

The details of the Project are listed in the following table.

Table 1.1: The Project Data

S No.	Particulars	Details
1	Name of the project	Construction, operation and maintenance of Two Laning of Patan– Tendukheda – Rehli Road in the state of Madhya Pradesh on BOT (Toll-Annuity) basis on design, build, finance, operate and transfer (DBFOT) on Toll Plus Annuity Basis in the State of Madhya Pradesh.
2	Road Type	State Highway (SH-15)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Patan-Rehli Tollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	08.07.2015
7	Date of Agreement	01.09.2015
8	Design length as per Schedule B of CA	Approximately 87.6 Kms
9	Actual length constructed	86.6 Kms
10	Project lane configuration	2 Lane
11	EPC Cost	225.02 Cr
12	Nature of contract	BOT (Toll + Annuity)
13	Toll collected by	Concessionaire
14	Concession period	15 years from the appointed date
15	Appointed date	10.04.2016
16	Concession End Date	09.04.2031
17	Construction period	730 days from the appointed date.
18	Schedule completion date	09.04.2018
19	Date of issuance of provisional certificate (Commercial operation date)	31.03.2017
20	Date of issuance of completion certificate	12.02.2018
21	Annuity amount (every six months)	17.64 Cr
22	Total number of annuities payable	26 Nos

S No.	Particulars	Details
23	First annuity payment date	31.09.2017
24	Total number of annuity paid	07 Nos

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of the CA including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S No.	Particulars	As per CA	As per COS	As per Site
1	Total project length	86.600 Kms	---	86.600 Kms
2	Four lane divided carriageway	2.200 Kms	---	2.200 Kms
3	Two lane with paved shoulder	4.300 Kms	---	4.300 Kms
4	Two lane with granular shoulder	54.300 Kms	---	54.300 Kms
5	Bypass	4.400 Kms	---	4.400 Kms
6	Single lane with granular shoulder	21.400 Kms	---	21.400 Kms
7	Flexible pavement	86.600 Kms	---	86.600 Kms
8	Toll plaza	2 Nos.	---	2 Nos.
9	Bus bays / Bus shelters	16 Nos.	---	16 Nos.
10	Truck lay bays	---	---	---
11	Major junction	06 Nos.	---	6 Nos.
12	Minor junction	14 Nos.	---	14 Nos.
13	ROB	---	---	---
14	Major Bridges	05 Nos.	---	05 Nos.
15	Minor Bridges	22 Nos.	-3 Nos.	19 Nos.
16	Box/Slab Culverts	19 Nos.	-1 Nos.	20 Nos*.
17	Pipe Culverts	85 Nos.	+13 Nos., -11 Nos.	78 Nos*.
18	CUP	Nil	+4 Nos.	4 Nos.

*2 additional Slab culverts were constructed as per site requirement and 9 Pipe culverts were not constructed as per site condition.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section schedule as shown below during the construction.

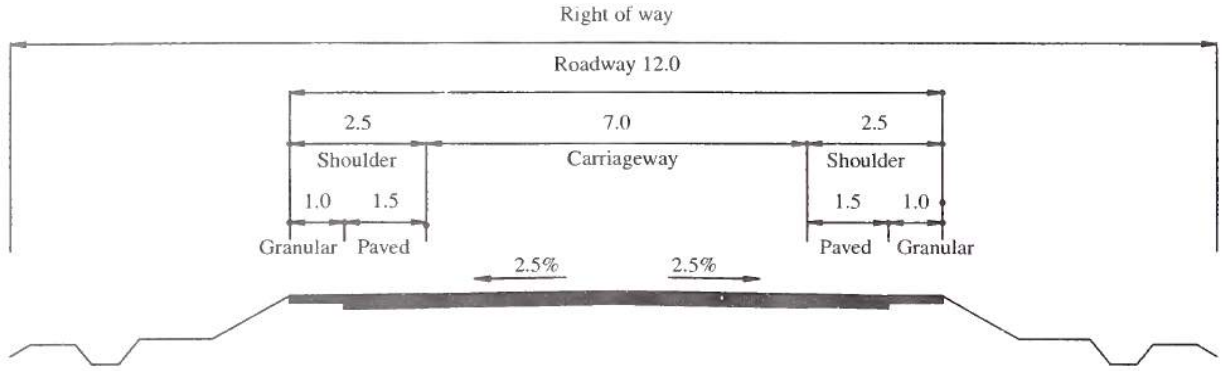

Figure 2.1: TCS. 2.1 of Schedule D of CA
Two lane carriageways with 1.5m paved shoulder and 1m granular shoulder shall be applicable in Built-up area in plain/rolling terrain.

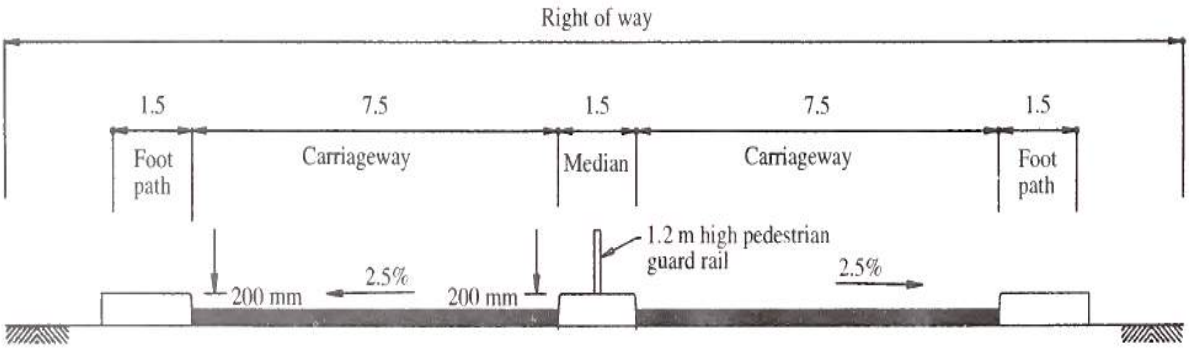

Figure 2.2: TCS. 2.2 of Schedule D of CA
Four lane divided carriageway with footpath in Built-up area within Municipal limit.

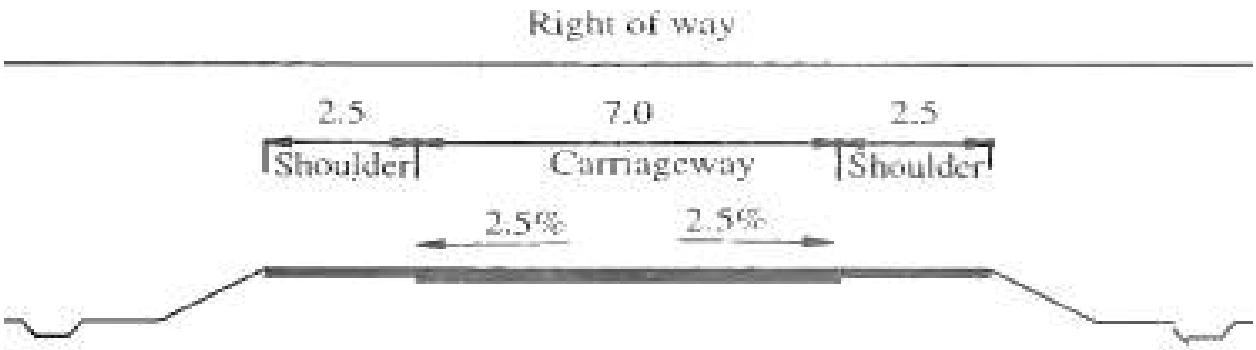

Figure 2.3: TCS. 2.3 Of Schedule D of CA
Two lane undivided highway with granular shoulder in Open Country

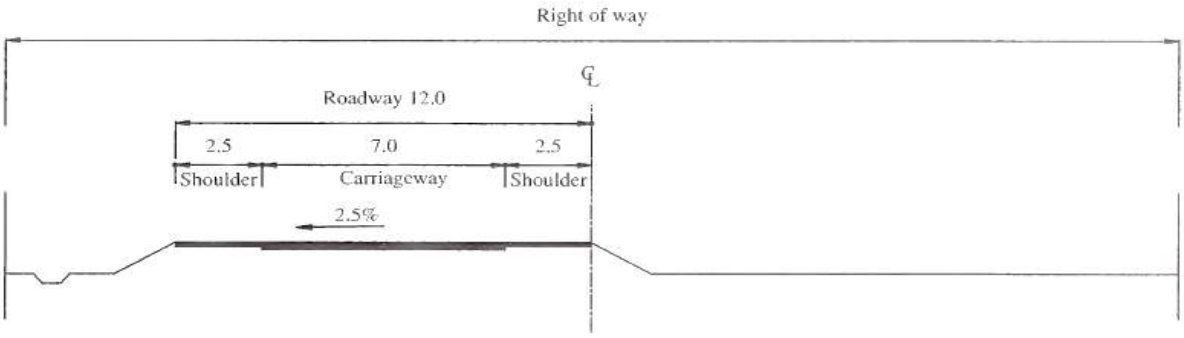

Figure 2.4: TCS. 2.4 of Schedule D of CA
Eccentrically placed shall be applicable for two lane new bypass in plain/rolling terrain

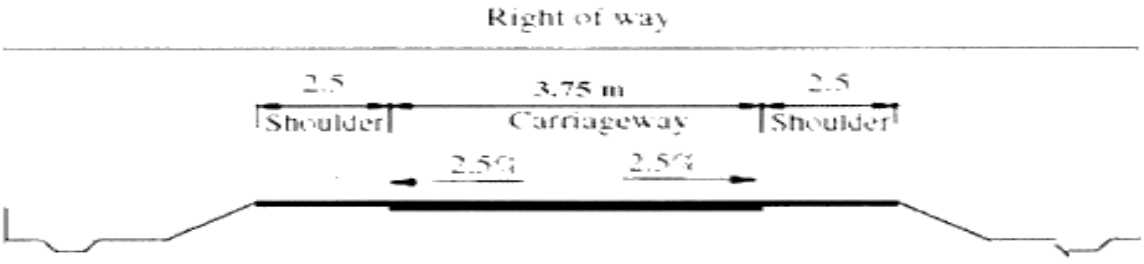

Figure 2.5: TCS. 2.6 of Schedule D of CA
Single lane with granular shoulder shall be applicable in sanctuary area in plain/rolling terrain

TCS schedule is provided below.

Table 2.2: TCS Schedule

S No.	From Chainage	To Chainage	length	Type of TCS
1	31+000	31+800	800	TCS.2.2 of Schedule D of CA
2	31+800	43+600	11800	TCS.2.3 of Schedule D of CA
3	43+600	43+800	200	TCS.2.1 of Schedule D of CA
4	43+800	50+700	6900	TCS.2.3 of Schedule D of CA
5	50+700	51+000	300	TCS.2.1 of Schedule D of CA
6	51+000	51+200	200	TCS.2.3 of Schedule D of CA
7	51+200	51+500	300	TCS.2.1 of Schedule D of CA
8	51+500	52+400	900	TCS.2.3 of Schedule D of CA
9	52+400	53+800	1400	TCS.2.2 of Schedule D of CA
10	53+800	57+500	3700	TCS.2.3 of Schedule D of CA
11	57+500	58+200	700	TCS.2.1 of Schedule D of CA
12	58+200	65+400	7200	TCS.2.3 of Schedule D of CA
13	65+400	65+700	300	TCS.2.1 of Schedule D of CA
14	65+700	75+000	9300	TCS.2.3 of Schedule D of CA
15	75+000	75+600	600	TCS.2.1 of Schedule D of CA

S No.	From Chainage	To Chainage	length	Type of TCS
16	75+600	76+700	1100	TCS.2.3 of Schedule D of CA
17	76+700	77+100	400	TCS.2.1 of Schedule D of CA
18	77+100	77+600	500	TCS.2.3 of Schedule D of CA
19	77+600	99+000	21400	TCS.2.6 of Schedule D of CA
20	99+000	100+600	1600	TCS.2.3 of Schedule D of CA
21	100+600	100+800	200	TCS.2.1 of Schedule D of CA
22	100+800	104+400	3600	TCS.2.3 of Schedule D of CA
23	104+400	105+300	900	TCS.2.1 of Schedule D of CA
24	105+300	109+500	4200	TCS.2.3 of Schedule D of CA
25	109+500	109+900	400	TCS.2.1 of Schedule D of CA
26	109+900	113+200	3300	TCS.2.3 of Schedule D of CA
27	0+000	4+400	4400	TCS.2.4 of Schedule D of CA for Bypass

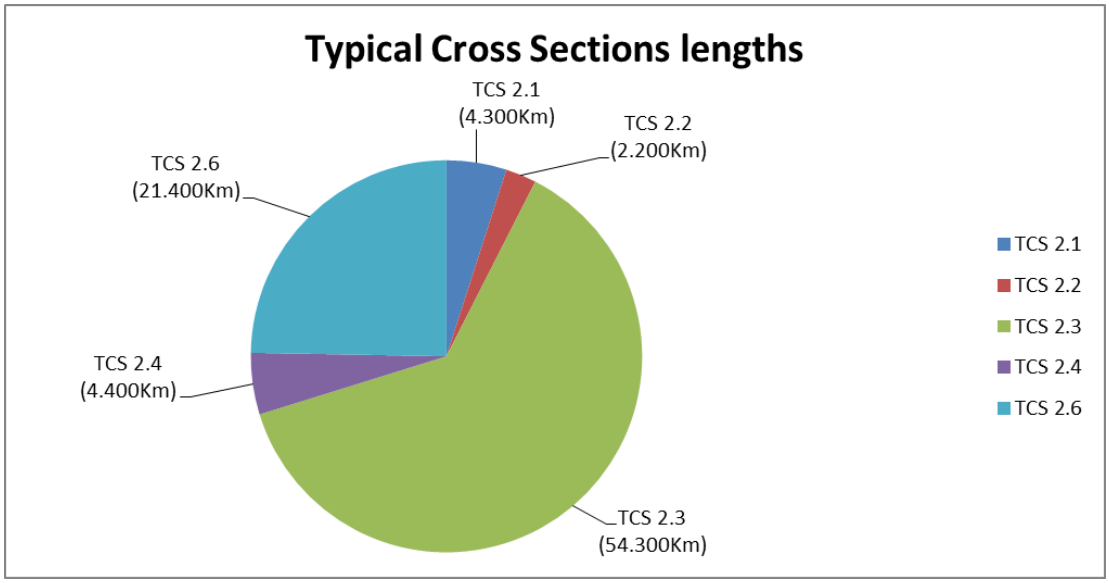

Figure 2.6: Pictorial Representation of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

2.4 Service Roads

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment

Bypass starts from Km 113+000 of Patan – Tenduheda Rehli Road & Joint at Km 38+100 of Sagar Rehli Road of 4.4 Kms length as per Provisions of Schedule B of CA

2.6 Intersections

As per Schedule B of CA requires developing 06 Nos Major Junctions and 14 Nos. Minor Junctions. Details are given below.

Table 2.3: Summary of Junctions

S No..	Chainage (Km)	Type of junction	Lead to
Major Junctions			
1	31+000	Y	Malikhedi
2	37+800	X	LHS: Podikala RHS: Jain temple
3	56+800	Y	Damoh
4	113+000	T	Rehli
5	115+800	X	Pandalpur
6	118+400	T	Sagar
Minor Junctions			
1	44+200	X	LHS: Singramopur RHS: SchaJganj
2	51+800	T	Nargua
3	52+600	T	Jharoli
4	54+800	Y	Tendukhera
5	55+800	Y	Ghanghor
6	73+400	X	LHS: Gunchi RHS: Jhalon
7	75+400	T	Magdupura
8	76+200	T	Sehri
9	78+800	Y	Damoh
10	94+800	X	LHS: Hinotiya Khapa RHS: Mohli
11	99+600	X	LHS: School RHS: Chandpur
12	110+200	X	LHS: Baleh RHS: Chandpur
13	110+400	T	Tikitoriya
14	110+600	T	Balch

2.7 Grade Separated Structures and underpasses

The Concessionaire has provided four numbers of CUP's as per COS.

Table 2.4: List of Grade Separated Structures (CUP's)

S No.	Chainage (Km.)	Span (m)
1	80+114	1x10x4
2	81+265	2x10x4
3	86+050	1x10x4
4	96+107	1x8x4

2.8 Road Under Bridge

There are no Road Under Bridge in the Project, as per provisions of Schedule B of the Concession Agreement

2.9 Carriageway Details

The details of Carriageway are shown in the following table.

Table 2.5: Summary of Carriageway Details

S. No.	Description	Flexible	Rigid	TCS Type
1	Four lane divided carriageway	2.200 Kms	---	TCS.2.2 of Schedule D of CA
2	Two lane with paved shoulder	4.300 Kms	---	TCS.2.1 of Schedule D of CA
3	Two lane with granular shoulder including Bypass	54.300 Kms	---	TCS.2.3 of Schedule D of CA
	Bypass	4.400	---	TCS.2.4 of Schedule D of CA
4	Single lane with granular shoulder	21.400 Kms	---	TCS.2.6 of Schedule D of CA
	Total length of the project	86.600 Kms	---	
5	TYPE OF ALIGNMENT			
6	New alignment	---	---	---
7	Realignment	---	---	---
8	Strengthening	---	---	---
9	Reconstruction	86.600 Kms	---	---
10	Total length of the project	86.600 Kms	---	---

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.6: Summary of Structures:

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained-Repair & Strengthening	5	3	2	
2	Widening- Repair & Strengthening			13	

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
3	Reconstruction		17	42	19
4	New		2	28	
	Total	**5**	**22**	**85**	**19**

2.11 Toll Plazas

As per Schedule C of CA provisions, Two Toll Plazas have been constructed at Km34+100 & Km 110+400. Salient features of Toll Plazas are provided below.

Toll Plaza – Km 34+100

- Each side comprises of two normal lanes and one extra wide lane.
- The lane width in normal lanes is 3.20m; extra wide lane is 4.5m.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- CC Cameras are installed and monitored in administrative building.

Toll Plaza – Km 110+400

- Each side comprises of, one normal lane and one extra wide lane.
- The lane width in normal lanes is 3.20m, Extra wide lane is 4.5m.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- CCTV Cameras are installed and monitored in administrative building.

2.12 Bus shelters

As per the provisions of Schedule C of CA, 16 Nos. Bus Shelters are provided in the entire length of Project. Details as per Schedule C of CA and provided as per site condition are given below.

Table 2.7: Bus Shelters:

S. No.	Chainage (Km)	S. No.	Chainage (Km)
1	31+000	9	75+000
2	36+000	10	76+700
3	43+600	11	94+500
4	50+700	12	100+600
5	51+200	13	104+400
6	54+200	14	109+500
7	57+500	15	114+100
8	65+400	16	115+700

2.13 Other Project Facilities Provided as per Schedule C

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA
- Landscaping: provided at Toll plazas location and being maintained
- Tree plantation: Tree plantation is provided on both sides, for the full length of project corridor and being maintained.
- Medical Aid Post: Provided at toll plaza location and operational
- Highway Lighting: Highway lighting is provided at Toll Plazas locations and is functional.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented below.

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in Table 3.1 and few representative photographs are given below to have a clear picture of the Project.

Table 3.1: Road Inventory

S No.	Features	Remarks
1	Terrain	Plain, Rolling and Hilly Terrain
2	Land Use	Agriculture, Forest with Built up sections
3	Total Length	86.6Kms
4	Villages	13 Nos
5	Four lane divided carriageway	2.200 Kms
6	Two lane with paved shoulder	4.300 Kms
7	Two lane with granular shoulder	54.300 Kms
8	Bypass	4.400 Kms
9	Single lane with granular shoulder	21.400 Kms
10	Earthen shoulder	1.0 m to 2.5m width on either side
11	Junctions	20 Nos
12	Toll Plaza	1) Km34+100 2) Km 110+600
13	Sign boards	Sign boards are provided as per requirement
14	Road Markings	Lane Markings are provided as per requirement
15	Bus Bays /shelters	16 Nos.
16	Truck Lay bye	Nil
17	Street Lighting	Highway lighting provided as per requirement
18	Avenue plantation	Nil

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10 mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10 mm and 20 mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general Pavement Condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The Pavement Condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth
  - Pavement edge drop (mm)
- Road Side Drain (Non Existing/ Partially Functional/ Functional)

Upon verification of the Pavement Condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1.** The summary of Pavement Condition is given below.

Table 3.3: Pavement condition summary

From (Km)	To (Km)	Length (kms)	Condition
31+000	113+200	82.200	Good
0+000	4+400	4.400	Good

Km39+600

Km 52+200

Km 54+610

Km 55+400

Figure 3.1 : Pavement Condition Photos

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 05 Nos. of Major Bridge, 19 Nos. of Minor Bridges, 78 Nos. Of Pipe culverts, 20 Nos. of Slab/ Box culverts and 4 Nos. of Cattle Under Passes are there along this project road.

Table 4.1 List of Structures

S No.	Type of Structure	Numbers
1	Major bridges	05 Nos.
2	Minor Bridge	19 Nos.
3	Pipe culverts	78 Nos.
4	Slab/Box Culverts	20 Nos.
5	CUP	04 Nos.

The superstructure for major bridges is of RCC solid slab type with RCC wall type piers and abutments resting on open foundation. The superstructure for 0minor bridges is of RCC solid slab type with RCC/PCC wall type piers and abutments restring on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the major bridge at Km 35+611 is 103.80m with 6 spans. The superstructure consists of RCC solid slab with RCC wall type piers and abutments resting on open foundations. Superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. Steel railings has been provided on both sides of the deck.

The total length of the major bridge at Km 54+682 is 72.0m with 6 spans. The superstructure consists of RCC solid slab with RCC wall type piers and abutments resting on open foundations. Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. Steel railings has been provided on both sides of the deck.

The total length of the major bridge at Km 77+516 is 126.0m with 6 spans. The superstructure consists of Box girder with RCC wall type piers and abutments resting on open foundations. Superstructure is seated on elastomeric bearings. Expansion joints are of Strip seal type. Steel railings has been provided on both sides of the deck.

The total length of the major bridge at Km 113+554 is 62.50 m with 5 spans. The superstructure consists of RCC solid slab with RCC wall type piers and abutment resting on open foundations.

Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. Steel railings has been provided on both sides of the deck.

The total length of the major bridge at Km 114+323 is 102.40 m with 16 spans. The superstructure consists of RCC solid slab with circular type piers and regular RCC wall type abutment resting on open foundations. Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. Steel railings have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)
1	35+611	6 x 17.3	103.800
2	54+682	6 x 12.0	72.000
3	77+516	6 x 21.0	126.000
4	113+554	5 x 12.5	62.500
5	114+323	16 x 6.40	102.400

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Km 54+682

Figure 4.1 Overall view of the Major Bridge at Km 54+682

4.4 Details of Minor Bridges

There are 19 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.3 Inventory of Minor Bridges

S No.	Chainage Km	Span (m)	Total Length of Bridge (m)	Description
1	31+792	1 x 8.2	9.50	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	32+291	1 x 8.4	9.70	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	35+031	2 x 5.0	11.10	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
4	36+639	2 x 5.0	11.10	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
5	51+062	3 x 11.6	34.80	Minor bridge is of RCC solid slab superstructure with RCC wall type piers and abutments resting on open foundations. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
6	52+241	3 x 13.4	40.20	Minor bridge is of RCC solid slab superstructure with RCC wall type piers and abutments resting on open foundations. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
7	63+305	2 x 10.2	22.50	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	67+640	4 x 10.0	42.80	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	70+843	4 x 5.0	21.70	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	75+848	2 x 10.0	22.10	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	100+047	4 x 12.2	48.80	Minor bridge is of RCC solid slab superstructure with RCC wall type piers and abutments resting on open foundations. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
12	100+973	3 x 10.0	30.00	Minor bridge is of RCC solid slab superstructure with CRM wall type piers and abutments resting on open foundations. Other features are Steel railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
13	101+344	2 x 6.8	13.60	Minor bridge is of RCC solid slab superstructure with PCC wall type piers and abutments resting on open foundations. Other features are Steel railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
14	106+175	2 x 10.3	22.70	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
15	106+398	1 x 9.7	11.20	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

S No.	Chainage Km	Span (m)	Total Length of Bridge (m)	Description
16	107+958	1 x 7.7	8.80	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
17	108+162	2 x 9.0	18.00	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
18	109+663	1 x 7.6	8.70	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
19	112+383	1 x 8.0	9.30	Minor bridge is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

Km 52+241

Figure 4.2: Representative photo for Minor Bridges

4.5 Details of CUP's

There are 4 No's of CUP's in the project stretch. The type of structure is RCC Box type structure. RCC crash barriers are provided on both sides.

Table 4.4 Inventory of CUP's

S No.	Chainage Km	Span (m)	Total Length (m)	Description
1	80+114	1 x 10 x 4.0	10.0	CUP is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	81+265	2 x 10 x 4.0	20.0	CUP is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	86+050	1 x 10 x 4.0	10.0	CUP is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
4	96+107	1 x 8 x 4.0	8.0	CUP is RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

4.6 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

Details of the Slab/ Box Culverts

There are 20 nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Slab/Box Culverts

S No.	Chainage Km	Span (m)	Vent Size (m)
1	35+870	1 x 3.0	2.50
2	40+006	2 x 3.0	2.60
3	50+395	1 x 3.0	3.00
4	51+425	1 x 3.2	3.20
5	61+251	2 x 3.0	2.60
6	70+252	1 x 3.5	3.1
7	70+676	2 x 3.0	2.60
8	72+038	2 x 3.0	2.60
9	72+284	1 x 5	2.00
10	72+817	1 x 4.5	4.0
11	73+690	2 x 3	3.0
12	74+027	1 x 5.5	3.1
13	77+336	2 x 3	3.0
14	80+270	1 x 3.8	2.10
15	83+070	1 x 3.3	2.10
16	104+088	1 x 3.0	2.00
17	104+530	1 x 7.0	3.00
18	106+783	1 x 7.0	2.10
19	107+407	1 x 4.7	2.10
20	111+636	2 x3.0	2.50

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

There are 78 Nos of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.6: List of Pipe Culverts

S No.	Chainage Km	No. of Rows X Dia (m)	Sl. No.	Chainage Km	No. of Rows X Dia (m)
1	32+885	1 x 0.9	40	74+442	2 x 0.9
2	33+500	1 x 1.2	41	76+186	1 x 1.2
3	35+134	2 x 1.2	42	77+189	1 x 1.2
4	35+502	1 x 1.2	43	77+723	1 x 1.0
5	36+113	2 x 0.9	44	77+728	1 x 1.0
6	37+116	1 x 1.2	45	78+560	1 x 1.0
7	37+413	1 x 1.2	46	79+350	1 x 1.2
8	37+677	1 x 1.2	47	79+500	1 x 1.2
9	38+453	1 x 1.2	48	80+345	1 x 1.2
10	38+756	1 x 1.2	49	81+842	1 x 1.2
11	39+034	2 x 0.9	50	83+963	2 x 0.9
12	39+135	1 x 1.2	51	85+006	1 x 1.2
13	40+629	1 x 1.2	52	85+615	1 x 1.2

S No.	Chainage Km	No. of Rows X Dia (m)
14	40+809	1 x 1.2
15	40+941	2 x 0.9
16	41+232	2 x 1.2
17	41+682	1 x 1.2
18	42+820	3 x 1.2
19	44+655	2 x 1.2
20	47+872	1 x 1.2
21	49+485	2 x 0.9
22	52+603	1 x 1.2
23	53+004	1 x 1.2
24	53+561	1 x 1.2
25	54+358	1 x 1.2
26	54+814	1 x 1.2
27	55+175	1 x 1.2
28	56+050	1 x 1.2
29	59+639	1 x 1.2
30	60+140	1 x 1.2
31	61+686	1 x 1.2
32	63+450	1 x 1.2
33	63+995	1 x 1.2
34	64+490	1 x 1.2
35	64+686	1 x 1.2
36	65+381	1 x 1.2
37	66+765	1 x 1.2
38	68+172	1 x 1.2
39	32+885	1 x 1.2

Sl. No.	Chainage Km	No. of Rows X Dia (m)
53	86+085	1 x 1.0
54	88+300	1 x 1.0
55	88+380	1 x 1.0
56	88+600	1 x 1.2
57	90+030	1 x 1.2
58	91+396	1 x 1.2
59	92+035	1 x 1.2
60	92+215	1 x 1.0
61	92+702	1 x 1.0
62	92+892	1 x 1.2
63	93+900	1 x 1.2
64	94+445	1 x 1.2
65	95+142	1 x 1.2
66	95+326	1 x 1.2
67	96+750	1 x 1.2
68	98+265	1 x 1.2
69	99+002	1 x 1.2
70	99+431	1 x 1.2
71	102+265	1 x 1.2
72	103+285	1 x 1.2
73	104+300	1 x 1.2
74	109+316	1 x 1.2
75	110+475	1 x 1.2
76	110+966	1 x 1.0
77	111+359	1 x 1.0
78	112+902	1 x 1.0

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S No.	Description/ Pavement layer	Design Parameters	Adopted values
1	Sub Grade CBR (%)	9%	9%
2	Design Life (Years)	15 years	15 years
3	Design Traffic (MSA)	1.98 MSA for HS-1 Actual 0.26 MSA for HS-2 Actual	5 MSA for HS-1 & HS-2
4	Surface course (BC/SDBC)	25 mm (SDBC)	30 mm (BC)
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	150 mm	200 mm

Pavement design (Crust thickness)

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Distribution of commercial vehicles and growth rate values are 0.75 and 5% respectively. Vehicle Damage Factor (VDF) 0.7, 0.5, 2.5 and 4.11 for LCV, BUS, 2-AT and MAV respectively as per design report. Summary is given below.

Table 5.2: Flexible Pavement Design Traffic Validation (Patan)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2018	637	271	35	32	71	409	0.16	0.16	2	Actual
2019	896	388	44	57	93	581	0.22	0.38	3	Actual
2020	1070	448	46	70	99	664	0.25	0.63	4	Actual
2021	1123	470	49	74	104	697	0.26	0.90	5	Projected
2022	1179	494	51	78	109	732	0.28	1.18	6	Projected
2023	1238	518	54	81	115	768	0.29	1.47	7	Projected
2024	1300	544	56	85	121	807	0.31	1.77	8	Projected
2025	1365	571	59	90	127	847	0.32	2.09	9	Projected
2026	1433	600	62	94	133	889	0.34	2.43	10	Projected
2027	1505	630	65	99	140	934	0.35	2.79	11	Projected
2028	1580	661	68	104	147	980	0.37	3.16	12	Projected
2029	1659	694	72	109	154	1029	0.39	3.55	13	Projected
2030	1742	729	75	115	162	1081	0.41	3.96	14	Projected
2031	1829	766	79	120	170	1135	0.43	4.39	15	Projected

Table 5.3: Flexible Pavement Design Traffic Validation (Rehli)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2018	329	91	10	15	24	139	0.05	0.05	2	Actual
2019	519	156	15	29	38	238	0.09	0.14	3	Actual
2020	606	177	19	33	46	274	0.10	0.24	4	Actual
2021	636	186	19	34	48	288	0.11	0.35	5	Projected
2022	668	195	20	36	51	302	0.11	0.46	6	Projected
2023	702	205	21	38	53	317	0.12	0.57	7	Projected
2024	737	215	23	40	56	333	0.12	0.70	8	Projected
2025	774	226	24	42	59	350	0.13	0.83	9	Projected
2026	812	237	25	44	61	367	0.14	0.96	10	Projected
2027	853	249	26	46	65	385	0.14	1.11	11	Projected
2028	896	261	27	48	68	405	0.15	1.26	12	Projected
2029	940	274	29	50	71	425	0.16	1.41	13	Projected
2030	987	288	30	53	75	446	0.17	1.58	14	Projected
2031	1037	303	32	56	78	468	0.17	1.75	15	Projected

Based on the above projected traffic, estimated MSA at 8 years and 15 years are 1.77, 4.39 of TP1 respectively. Similarly estimated MSA at 8 years and 15 years of TP2 are 0.70, 1.75 respectively.

Traffic considered in pavement design is more than projected traffic based on actual traffic. Hence the pavement design adopted is found in order.

Rigid Pavement

Pavement crust thickness in the pavement design report for rigid pavement is as follows: -

Table 5.4: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	9%
Design life in years	30
Pavement Quality Concrete (PQC) - mm	250
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	450
Spacing of Dowel Bars (mm)	400
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	710

The Pavement crust has been designed according to IRC specification and found in order, the adopted/constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA for a design life of 15 years for Bituminous layers and Granular layer (up to 2031), whereas the actual traffic is 1.98 MSA and 0.26 MSA for HS-1 and HS-2 respectively for 15 years. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

5.4 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next periodic renewal proposed on or before 2024.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction (as per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals. Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC:SP- 88	Manual of Road Safety Audit

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs Village sign Board Informatory Boards Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site	Good

S. No.	Item Description		Status	Condition
			requirement	
3	Metal Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part an important corridor. It is the Concessionaire's duty and responsibility to provide a safety and thorough fare for the road users by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places, reflectors were missing on the signboards and few sign boards were also damaged.
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

W Beam at approaches of MNB at Km 51+070

Railing at Builtup sections at Km 55+400

Speed Limit Board and Direction Chevron Boards

Safety before the Head wall of Box Culvert at 54+610

Figure 6.1: Representative photos during road safety audit

6.3 Conclusions

Safety arrangements are made for road users along the project road are found to be in conformity with Project Road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

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CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There are two toll Plazas at Km 34+100 and Km 110+400.

- Each side comprises of two normal lanes and one extra wide lane.
- The lane width in normal lanes is 3.20m; extra wide lane is 4.5m.
- Single canopy is provided to cover the toll lanes.

7.2 Tolling Equipment's and Control Room Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: List of Tolling Equipment in toll plaza @34+100

S No.	Description	Nos.
Lane and Booth Equipment		
1	DG SET -701 (25KVA)	1
2	NVR	1
3	DVR	1
4	PTZ CAMERA (NEW)	1
5	PTZ CAMERA (OLD)	2
6	ALL BOOTH SYSTEM, TLC, LCD	2
7	6 KVA UPS	6
8	15 KVA UPS	1
9	STABLIZER- 6KVA	1
10	STABLIZER- 15KVA	1
11	UFD OLD	1
12	OFFICE CPU	6
13	OFFICE MONITOR	2
14	PRINTER NEW	3
15	PRINTER OLD	1
16	SCANNER	1
17	BOOTH CAMERA(NEW)	1
18	EMAGE CAMERA	4
19	VIDEO CAMERA (CP PLUS NEW)	6
20	INTERCOM	4
21	FASTAG	7
22	SMART CARD READER	4

Table 7.2: List of Tolling Equipment in toll plaza @110+400

S No.	Description	Nos.
Lane and Booth Equipment		
1	TLC (Toll lane Controller)	6
2	Monitor	6

S No.	Description	Nos.
3	Printer	6
4	Keyboard	6
5	CCTV Booth	6
6	Intercom-S	6
7	IC Camera	6
8	Barrier	6
9	UFD	6
10	Traffic Light	6
11	OHLS	6
12	AVC Laser	4
13	Axle Sensor	6
14	Wifi-Router Tenda	1
15	Data Server-Technovaa	1
16	NVR	1
17	Network Rack	1
18	POE Switch	1
19	RFID HHT	1
20	PTZ-LHS	1
21	PTZ-RHS	1
22	Firewall Router	1
23	Lane Camera	1

7.3 Vehicles

The list of vehicles which were observed at site for operation of highway and toll plazas are presented below.

Table 7.3: List of Vehicles

S No.	Vehicle Type	Make & Model	No of vehicles
1	Patrol vehicle	Tata	2
2	Ambulance	Maruti van	2

Toll Plaza at Patan

Toll Building at Raheli

Figure 7.1: Photographs of Toll Plaza

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past Two years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Cumulative Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details as per schedule N of CA

A) Patan Toll Plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr 2018-Mar 2019	327023	141460	16025	20702	33791	539001
Apr 2019-Mar 2020	391470	163839	16953	25728	36344	634334
AACGR* (%)						**17.69%**

B) Raheli Toll Plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr 2018-Mar 2019	189572	57093	5393	10594	13840	276492
Apr 2019-Mar 2020	221839	64757	6789	11908	16786	322079
AACGR* (%)						**16.49%**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8-2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

A) Patan Toll Plaza:

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	279437	1180	142142	16908	25445	36139	501251
Toll Revenue collection in Rs.	6985925	94368	7817810	1991405	3514380	10075995	30479883

B) Rahelli Toll Plaza:

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	170525	623	43683	6742	11789	16652	250014
Toll Revenue collection in Rs.	4263125	49850	2839395	895905	1923430	5406705	15378410

The figures shown in Table 8-1 are Real time traffic data on project road for the past two years and the growth rate is calculated to be 17.69%, 16.49% in TP-1 & TP-2 respectively. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8-2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

A) Patan Toll Plaza:

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	769	389	46	70	99	604	769	584	139	209	446	1378	Actual
2021	807	409	49	73	104	635	807	613	146	220	468	1447	Projected
2022	848	429	51	77	109	666	848	644	153	231	491	1519	Projected
2023	890	451	54	81	115	700	890	676	161	242	516	1595	Projected
2024	934	473	56	85	120	735	934	710	169	254	542	1675	Projected
2025	981	497	59	89	126	771	981	746	177	267	569	1758	Projected
2026	1030	522	62	93	133	810	1030	783	186	280	597	1846	Projected
2027	1082	548	65	98	139	851	1082	822	196	294	627	1939	Projected
2028	1136	575	68	103	146	893	1136	863	205	309	658	2036	Projected
2029	1193	604	72	108	154	938	1193	906	216	324	691	2137	Projected
2030	1252	634	75	114	161	985	1252	952	226	341	726	2244	Projected
2031	1315	666	79	119	169	1034	1315	999	238	358	762	2357	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

C) Raheli Toll Plaza:

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	469	120	18	32	46	216	469	180	55	97	205	537	Actual
2021	492	126	19	34	48	227	492	188	58	102	216	564	Projected
2022	517	132	20	36	50	238	517	198	61	107	226	592	Projected
2023	543	139	21	37	53	250	543	208	64	112	238	622	Projected
2024	570	145	22	39	55	263	570	218	67	118	250	653	Projected
2025	598	153	24	41	58	276	598	229	71	124	262	686	Projected
2026	628	160	25	43	61	290	628	241	74	130	275	720	Projected
2027	660	168	26	45	64	304	660	253	78	136	289	756	Projected
2028	693	177	27	48	67	319	693	265	82	143	303	794	Projected
2029	727	186	29	50	71	335	727	278	86	150	318	833	Projected
2030	764	195	30	53	74	352	764	292	90	158	334	875	Projected
2031	802	205	32	55	78	370	802	307	95	166	351	919	Projected

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in table 8-4

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1	Toll plaza 2
Location	Km 34+100	Km 110+400
4 lane length in Kms	0	0
2 lane length in Kms	40	46.6
Agreement Date	01-09-2015	01-09-2015
Appointed Date	10-04-2016	10-04-2016
Concession period	15	15
Commercial operation date	12-02-2018	12-02-2018
Concession End Date	09-04-2031	09-04-2031
Traffic study year	2020	2020
Vehicle Type	**AADT**	**AADT**

Particular	Toll plaza 1	Toll plaza 2
Car/Jeep/Van	769	469
LCV/LGV	389	120
2A-Bus	46	18
2A-Truck	70	32
MAV (2A-6A)	99	46
Growth Rate (%)	5%	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 @ Km 34+100	Annual Revenue of TP1 @ Km 110+400	Total	Remarks
2019-20	304.7988	153.7841	458.5829	Actual
2020-21	327.0265	164.9138	491.9403	Projected
2021-22	357.5165	176.6606	534.1771	Projected
2022-23	400.3364	201.8828	602.2192	Projected
2023-24	436.0128	215.1583	651.1711	Projected
2024-25	466.7338	233.0636	699.7974	Projected
2025-26	507.3352	249.0142	756.3494	Projected
2026-27	543.2788	269.3449	812.6238	Projected
2027-28	610.1199	299.2763	909.3962	Projected
2028-29	649.5864	323.8906	973.477	Projected
2029-30	691.3783	344.2978	1035.676	Projected
2030-31	751.0599	371.1441	1122.204	Projected
2031-32	19.70102	9.724974	29.426	9 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

9.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project Road and Project Facilities.

1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2 Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3 Carrying out preventive and periodic maintenance of the Project Road;
4 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6 Functioning of the lighting System
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Lay bays
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefore;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Road.
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

9.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

9.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

9.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2024	Planned to execute
2	2nd Periodic Maintenance	2031	Planned to execute

9.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

9.6.1. Bump Integrator Test (BI):

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of March, 2020. As per Schedule K of CA, if the stretch exceeds 3000mm in a Km shall be rectified. No stretch exceeds the permissible limit.

9.6.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Dec 2019. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.291	0.253		0.83	**1.37**
2021	0.299	0.260		0.85	**1.41**
2022	0.308	0.268		0.88	**1.46**
2023	0.318	0.276		0.91	**1.50**
2024	0.327	0.285	12.17	0.93	**13.71**
2025	0.337	0.293		0.96	**1.59**
2026	0.347	0.302		0.99	**1.64**
2027	0.357	0.311		1.02	**1.69**
2028	0.368	0.320		1.05	**1.74**
2029	0.379	0.330		1.08	**1.79**
2030	0.391	0.340		1.11	**16.01**
2031	0.402	0.350	14.17	1.15	**1.90**
2032	0.010	0.009		0.03	**0.05**
Total	**4.13**	**3.60**	**26.34**	**11.78**	**45.86**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- Construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D;
- Operation and maintenance of the Project Highway in accordance with the provisions of Concession Agreement (CA)
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this Concession Agreement (CA) and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6.**

10.3 Conditions precedent (Article 4)

Conditions of precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement (CA)

Conditions of precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project Highway upon termination of the CA

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

10.6.1. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

10.7 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Copy of the Provisional Completion Certificate is provided at **ANNEXURE-7**.

10.8 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Copy of the Completion certificate is provided at **ANNEXURE-8.**

10.9 Commercial Operation Date (COD) (Clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of Scope proposal initiated and consented by the Authority are provided at Annexure 10.

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimising the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any un authorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Lanning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.14 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 17.64 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 10.1: Status of Annuity Payments

S No.	Particulars	Paid on
1	1st Annuity	13-Oct-17
2	2nd Annuity	8-May-18
3	3rd Annuity	16-Oct-18
4	4th Annuity	2-Apr-19
5	5th Annuity	1-Oct-19
6	6th Annuity	22-Apr-20
7	7th Annuity	30-Sep-20

10.19 Concession Fee (Article 26):

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll Fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement, the Concessionaire shall affect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Copy of the Insurance are provided at **ANNEXURE-9.**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Remarks
			From	To	
Civil Engineering Completed Risk	National Insurance Company Limited	321300441910001994	27.03.2020	27.03.2021	Road and Structure Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic. Equipment, Road Furniture, Fixtures, Electrical Poles, Lighting & Fittings, Signboards & Safety Barrier.
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	3114203677162100000	05.10.2020	04.10.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 12. CONCLUSION

12.1 General:

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time traffic data extracted from Schedule N of CA, the traffic growth observed about 17% in both toll plazas. However, 5% growth rate only considered as taken in financial model while estimating forecast of traffic volumes.

12.5 Project Facilities

Two Toll Plazas are located at Km 34+100 & Km 110+400 and are operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Truck lay byes/Bus bays are in Good condition. Medical Aid posts found in functional condition. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at truck laybys and toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in good condition and number of sign boards are provided as per IRC SP 73-2007. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.

- Major maintenance (MM) /Periodic maintenance was carried out recently and next MM is scheduled in 2024.

12.8 Epilogue

The project is well designed and constructed as per the stipulated specifications besides maintenance work is being carried out effectively and keeping the road traffic worthy, smooth, safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
31+000	32+000	1	2						G	2	P+E	Fair	Fair	LD	F	
32+000	33+000		2						G	1	E	Fair	Good	ULD	PF	
33+000	34+000								G		E	Fair	Good	ULD	PF	
34+000	35+000								G		E	Fair	Good	ULD	PF	
35+000	36+000								G		E	Fair	Good	ULD	PF	
36+000	37+000								G		E	Fair	Good	ULD	PF	
37+000	38+000								G		E	Fair	Good	ULD	PF	
38+000	39+000								G		E	Fair	Good	ULD	PF	
39+000	40+000								G		E	Fair	Good	ULD	PF	
40+000	41+000								G		E	Fair	Good	ULD	PF	
41+000	42+000								G		E	Fair	Good	ULD	PF	
42+000	43+000								G		E	Fair	Good	ULD	PF	
43+000	44+000								G		P+E	Fair	Good	LD	F	
44+000	45+000								G		E	Fair	Good	ULD	PF	
45+000	46+000								G		E	Fair	Good	ULD	PF	
46+000	47+000								G		E	Fair	Good	ULD	PF	

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From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
47+000	48+000								G		E	Fair	Good	ULD	PF	
48+000	49+000								G		E	Fair	Good	ULD	PF	
49+000	50+000								G		E	Fair	Good	ULD	PF	
50+000	51+000								G		P+E	Fair	Good	LD	F	
51+000	52+000								G		P+E	Fair	Good	LD	F	
52+000	53+000								G		P+E	Fair	Good	LD	F	
53+000	54+000								G		P+E	Fair	Good	LD	F	
54+000	55+000								G		E	Fair	Good	ULD	PF	
55+000	56+000	5							G	1	E	Fair	Good	ULD	PF	
56+000	57+000								G		E	Fair	Good	ULD	PF	
57+000	58+000		6						G	3	P+E	Fair	Good	LD	F	
58+000	59+000		5						G	2	P+E	Fair	Good	LD	F	
59+000	60+000		4						G	2	E	Fair	Good	ULD	PF	
60+000	61+000		5						G	2	E	Fair	Good	ULD	PF	
61+000	62+000		6	2			5		F	3	E	Fair	Good	ULD	PF	
62+000	63+000		3						G	1	E	Fair	Good	ULD	PF	
63+000	64+000		5	1					G	1	E	Fair	Good	ULD	PF	

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From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
64+000	65+000								G		E	Fair	Good	ULD	PF	
65+000	66+000		4				2		G	2	P+E	Fair	Good	LD	F	
66+000	67+000		5						G	1	E	Fair	Good	ULD	PF	
67+000	68+000		5						G	1	E	Fair	Good	ULD	PF	
68+000	69+000		5						G	1	E	Fair	Good	ULD	PF	
69+000	70+000		5						G	1	E	Fair	Good	ULD	PF	
70+000	71+000								G		E	Fair	Good	ULD	PF	
71+000	72+000								G		E	Fair	Good	ULD	PF	
72+000	73+000		5						G	2	E	Fair	Good	ULD	PF	
73+000	74+000		6						G	2	E	Fair	Good	ULD	PF	
74+000	75+000		5						G	1	E	Fair	Good	ULD	PF	
75+000	76+000		5						G	2	P+E	Fair	Good	LD	F	
76+000	77+000		5						G	2	P+E	Fair	Good	LD	F	
77+000	78+000		5						G	1	E	Fair	Good	ULD	PF	
78+000	79+000								G		E	Fair	Good	ULD	PF	
79+000	80+000								G		E	Fair	Good	ULD	PF	
80+000	81+000								G		E	Fair	Good	ULD	PF	

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From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
81+000	82+000		5						G	1	E	Fair	Good	ULD	PF	
82+000	83+000		4						G	1	E	Fair	Good	ULD	PF	
83+000	84+000		5						G	1	E	Fair	Good	ULD	PF	
84+000	85+000		3						G	1	E	Fair	Good	ULD	PF	
85+000	86+000								G		E	Fair	Good	ULD	PF	
86+000	87+000								G		E	Fair	Good	ULD	PF	
87+000	88+000								G		E	Fair	Good	ULD	PF	
88+000	89+000								G		E	Fair	Good	ULD	PF	
89+000	90+000								G		E	Fair	Good	ULD	PF	
90+000	91+000								G		E	Fair	Good	ULD	PF	
91+000	92+000								G		E	Fair	Good	ULD	PF	
92+000	93+000		5				2		G	3	E	Fair	Good	ULD	PF	
93+000	94+000		5						G	1	E	Fair	Good	ULD	PF	
94+000	95+000								G		E	Fair	Good	ULD	PF	
95+000	96+000								G		E	Fair	Good	ULD	PF	
96+000	97+000								G		E	Fair	Good	ULD	PF	

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From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
97+000	98+000								G		E	Fair	Good	ULD	PF	
98+000	99+000								G		E	Fair	Good	ULD	PF	
99+000	100+000								G		E	Fair	Good	ULD	PF	
100+000	101+000	2							G	1	P+E	Fair	Good	LD	PF	
101+000	102+000								G		E	Fair	Good	ULD	PF	
102+000	103+000	2	5						G	2	E	Fair	Good	ULD	PF	
103+000	104+000								G		E	Fair	Good	ULD	PF	
104+000	105+000								G		P+E	Fair	Good	LD	F	
105+000	106+000	5							G	1	P+E	Fair	Good	LD	F	
106+000	107+000	2	5						F	1	E	Fair	Good	ULD	PF	
107+000	108+000	5	4				4		F	2	E	Fair	Good	ULD	PF	
108+000	109+000	10	5			M	4		F	4	E	Fair	Good	ULD	PF	
109+000	110+000	15	5	3		M			F	4	P+E	Fair	Good	LD	PF	
110+000	111+000	5	4			M	2		F	1	P+E	Fair	Good	LD	PF	
111+000	112+000								G		E	Fair	Good	ULD	PF	
112+000	113+200								G		E	Fair	Good	ULD	PF	

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Chainage (Km)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/ CD/NO)	Condition (PF/F) ***	
Bypass																
0+000	1+000	5	3						G	2	E	Fair	Good	ULD	PF	
1+000	2+000								G		E	Fair	Good	ULD	PF	
2+000	3+000								G		P+E	Fair	Good	LD	PF	
3+000	4+000								G		E	Fair	Good	ULD	PF	
4+000	4+400								G		E	Fair	Good	ULD	PF	

Annexure 2 : Condition of Bridges

S. No	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
1	31+792	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Vegetation observed
2	32+291	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
3	35+031	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
4	36+639	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
5	51+062	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
6	52+241	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
7	63+305	Minor Bridge	Good	Good	-	Fair	Fair	Fair	Good	Good
8	67+640	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
9	70+843	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
10	75+848	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
11	100+047	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
12	100+973	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
13	101+344	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
14	106+175	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
15	106+398	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
16	107+958	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
17	108+162	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
18	109+663	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
19	112+383	Minor Bridge	Good	Good	-	Fair	Fair	Fair	-	Good
20	35+611	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
21	54+682	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
22	77+516	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good

S. No	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
23	113+554	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
24	114+323	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
25	80+114	CUP	Good	Good	-	Fair	Fair	Fair	-	-
26	81+265	CUP	Good	Good	-	Fair	Fair	Fair	-	-
27	86+050	CUP	Good	Good	-	Fair	Fair	Fair	-	-
28	96+107	CUP	Good	Good	-	Fair	Fair	Fair	-	-

Annexure 3: Condition of Culverts

Condition of Box /Slab Culverts

S No.	Chainage Km	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons	Remarks
1	35+87	Good	Good	Fair	Fair	Fair	-
2	40+006	Good	Good	Fair	Fair	Fair	-
3	50+395	Good	Good	Fair	Fair	Fair	Extra
4	51+425	Good	Good	Fair	Fair	Fair	Extra
5	61+251	Good	Good	Fair	Fair	Fair	-
6	70+252	Good	Good	Fair	Fair	Fair	-
7	70+676	Good	Good	Fair	Fair	Fair	-
8	72+038	Good	Good	Fair	Fair	Fair	-
9	72+284	Good	Good	Fair	Fair	Fair	-
10	72+817	Good	Good	Fair	Fair	Fair	-
11	73+69	Good	Good	Fair	Fair	Fair	-
12	74+027	Good	Good	Fair	Fair	Fair	-
13	77+336	Good	Good	Fair	Fair	Fair	-
14	80+27	Good	Good	Fair	Fair	Fair	-
15	83+07	Good	Good	Fair	Fair	Fair	-
16	104+088	Good	Good	Fair	Fair	Fair	-
17	104+53	Good	Good	Fair	Fair	Fair	-
18	106+783	Good	Good	Fair	Fair	Fair	-
19	107+407	Good	Good	Fair	Fair	Fair	-
20	111+636	Good	Good	Fair	Fair	Fair	-

Condition of Pipe Culverts

S No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	32+885	Good	Fair	Fair	Fair
2	33+500	Good	Fair	Fair	Fair
3	35+134	Good	Fair	Fair	Fair
4	35+502	Good	Fair	Fair	Fair
5	36+113	Good	Fair	Fair	Fair
6	37+116	Good	Fair	Fair	Fair
7	37+413	Good	Fair	Fair	Fair
8	37+677	Good	Fair	Fair	Fair
9	38+453	Good	Fair	Fair	Fair
10	38+756	Good	Fair	Fair	Fair
11	39+034	Good	Fair	Fair	Fair
12	39+135	Good	Fair	Fair	Fair
13	40+629	Good	Fair	Fair	Fair
14	40+809	Good	Fair	Fair	Fair

S No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
15	40+941	Good	Fair	Fair	Fair
16	41+232	Good	Fair	Fair	Fair
17	41+682	Good	Fair	Fair	Fair
18	42+820	Good	Fair	Fair	Fair
19	44+655	Good	Fair	Fair	Fair
20	47+872	Good	Fair	Fair	Fair
21	49+485	Good	Fair	Fair	Fair
22	52+603	Good	Fair	Fair	Fair
23	53+004	Good	Fair	Fair	Fair
24	53+561	Good	Fair	Fair	Fair
25	54+358	Good	Fair	Fair	Fair
26	54+814	Good	Fair	Fair	Fair
27	55+175	Good	Fair	Fair	Fair
28	56+050	Good	Fair	Fair	Fair
29	59+639	Good	Fair	Fair	Fair
30	60+140	Good	Fair	Fair	Fair
31	61+686	Good	Fair	Fair	Fair
32	63+450	Good	Fair	Fair	Fair
33	63+995	Good	Fair	Fair	Fair
34	64+490	Good	Fair	Fair	Fair
35	64+686	Good	Fair	Fair	Fair
36	65+381	Good	Fair	Fair	Fair
37	66+765	Good	Fair	Fair	Fair
38	68+172	Good	Fair	Fair	Fair
39	74+442	Good	Fair	Fair	Fair
40	76+186	Good	Fair	Fair	Fair
41	77+189	Good	Fair	Fair	Fair
42	77+723	Good	Fair	Fair	Fair
43	77+728	Good	Fair	Fair	Fair
44	78+560	Good	Fair	Fair	Fair
45	79+350	Good	Fair	Fair	Fair
46	79+500	Good	Fair	Fair	Fair
47	80+345	Good	Fair	Fair	Not visible
48	81+842	Good	Good	Fair	Good
49	83+963	Good	Fair	Fair	Good
50	85+006	Good	Good	Fair	Not visible
51	85+615	Good	Good	Fair	Not visible
52	86+085	Good	Good	Fair	Not visible
53	88+300	Good	Good	Fair	Fair
54	88+380	Good	Good	Fair	Fair
55	88+600	Good	Good	Fair	Fair

S No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
56	90+030	Good	Good	Fair	Fair
57	91+396	Good	Good	Fair	Fair
58	92+035	Good	Good	Fair	Fair
59	92+215	Good	Good	Fair	Fair
60	92+702	Good	Good	Fair	Fair
61	92+892	Good	Good	Fair	Fair
62	93+900	Good	Good	Fair	Fair
63	94+445	Good	Good	Fair	Fair
64	95+142	Good	Good	Fair	Fair
65	95+326	Good	Good	Fair	Fair
66	96+750	Good	Good	Fair	Fair
67	98+265	Good	Good	Fair	Fair
68	99+002	Good	Good	Fair	Fair
69	99+431	Good	Good	Fair	Fair
70	102+265	Good	Good	Fair	Fair
71	103+285	Good	Good	Fair	Fair
72	104+300	Good	Good	Fair	Fair
73	109+316	Good	Good	Fair	Fair
74	110+475	Good	Good	Fair	Fair
75	110+966	Good	Good	Fair	Fair
76	111+359	Good	Good	Fair	Fair
77	112+902	Good	Good	Fair	Fair
78	113+933	Good	Good	Fair	Fair

Annexure 4:Toll Revenue Calculations

Toll Plaza-I & 2:

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)	Traffic (AADT)
	Km 34.100	Km 110.400
Car/Taxi/Van	769	469
LCV	389	120
Bus	46	18
Truck	70	32
MAV	99	46

2. **Traffic Growth Rates**

Table-2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-32	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99.6%	0.4%	100%
LCV	100%	0%	100%
Bus	100%	0%	100%
Truck	100%	0%	100%
MAV	100%	0%	100%

4. **Toll Rates :**

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km 34.100	Toll Fee at Km 110.400
Car/Taxi/Van	25	25
LCV	55	65
Bus	120	135
Truck	140	165
MAV	280	325

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	6985925	94368	7817810	1991405	3514380	10075995	30479883	304.799	304.799
2020-21	7335221	105279	8208701	2219175	3874001	10960277	32702654	327.027	631.825
2021-22	7701982	110543	9402693	2423339	4207967	11905128	35751653	357.517	989.342
2022-23	9704498	122898	9872828	2642372	4565644	13125404	40033643	400.336	1389.678
2023-24	10189723	136212	11230342	2877249	4948569	14219187	43601282	436.013	1825.691
2024-25	10699209	143023	11791859	3129008	5520747	15389536	46673382	466.734	2292.425
2025-26	11234169	158078	13333871	3398751	5967278	16641371	50733518	507.335	2799.760
2026-27	11795878	165982	14000565	3687644	6444661	18233155	54327884	543.279	3343.039
2027-28	14449950	182995	15750635	3996931	6954863	19676613	61011986	610.120	3953.159
2028-29	15172448	201294	16538167	4327926	7499974	21218834	64958643	649.586	4602.745
2029-30	15931070	211359	17365076	4682030	8082209	22866085	69137828	691.378	5294.124
2030-31	16727623	232014	19448885	5060723	8703917	24932828	75105990	751.060	6045.183
2031-32	17564005	254207	20421329	5465581	9367591	26825876	1970102	19.701	6064.884

Toll Plaza-2 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	4263125	49850	2839395	895905	1923430	5406705	15378410	153.784	153.784
2020-21	4476281	55614	3210701	955679	2042444	5750658	16491376	164.914	318.698
2021-22	4700095	58395	3371236	1040628	2274540	6221166	17666059	176.661	495.358
2022-23	5922120	64921	3792640	1131683	2456503	6820411	20188278	201.883	697.241
2023-24	6218226	71954	3982272	1229241	2650977	7363162	21515832	215.158	912.400
2024-25	6529137	75552	4460145	1333727	2858756	8049045	23306362	233.064	1145.463
2025-26	6855594	83505	4683152	1445588	3159678	8673905	24901421	249.014	1394.477

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2026-27	7198374	87680	5224641	1565301	3400603	9457893	26934492	269.345	1663.822
2027-28	8818008	96667	5485873	1693371	3657722	10175992	29927633	299.276	1963.099
2028-29	9258909	106334	6099000	1830335	4023494	11070989	32389060	323.891	2286.989
2029-30	9721854	111651	6403950	1976761	4320684	11894876	34429776	344.298	2631.287
2030-31	10207947	122562	7097712	2133255	4637534	12915403	37114412	371.144	3002.431
2031-32	10718344	134285	7452597	2300456	4975267	13859221	972497	9.72	3012.16

Toll Plaza-1&2 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	11249050	144218	10657205	2887310	5437810	15482700	45858293	458.583	458.583
2020-21	11811503	160893	11419401	3174854	5916446	16710934	49194030	491.940	950.523
2021-22	12402078	168938	12773929	3463967	6482507	18126294	53417712	534.177	1484.700
2022-23	15626618	187819	13665468	3774054	7022147	19945814	60221921	602.219	2086.920
2023-24	16407949	208166	15212614	4106491	7599546	21582349	65117114	651.171	2738.091
2024-25	17228346	218575	16252004	4462735	8379503	23438581	69979744	699.797	3437.888
2025-26	18089763	241582	18017023	4844339	9126956	25315276	75634940	756.349	4194.238
2026-27	18994252	253662	19225206	5252945	9845264	27691047	81262375	812.624	5006.861
2027-28	23267958	279662	21236509	5690301	10612585	29852605	90939619	909.396	5916.257
2028-29	24431356	307628	22637167	6158261	11523468	32289823	97347703	973.477	6889.735
2029-30	25652924	323009	23769026	6658791	12402892	34760962	103567604	1035.676	7925.411
2030-31	26935570	354576	26546596	7193978	13341451	37848230	112220402	1122.204	9047.615
2031-32	28282349	388492	27873926	7766037	14342858	40685096	2942600	29.426	9077.041

Annexure 5: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms	86.6	12	4	350	14,54,880	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms	4.6	24	4	350	1,54,560	04 nos of Labour
3	Watering in Median Plants	Once in Week	Kms	4.6	52	1	1939	4,63,809	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Kms	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Kms	4.6	12	0	21000	-	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Kms	43.3	2	5	350	1,51,550	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	105	2	2	650	2,73,000	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Kms	86.6	4	1	350	1,21,240	02 nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	16	6	1	350	33,600	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	2.00	6	15	350	63,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos	23	2	2	350	32,200	02 nos of Labour for removal of vegetation/Structure
							Total	**27,47,839**	
	EQUIPMENT SUPPLY							-	
1	Truck Tipper 6-8 Cum Capacity	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year)

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
									including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	2.2	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for Row	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	2.2	12	0	12000	1,320	(12000/year)
6	Manhoise/ Skyscraper	Monthly	Nos		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	1.0	12	0	2500	2,000	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	1		-	
9	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
							Total	**78,320**	
1	Patrolling vehicle	Monthly	Nos	12		1	10000	10000	(1500000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
3	Tow away trucks and Crane	Monthly	Nos	12			40000	0	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
							Total	**80,000**	
							Grand Total	**29,06,159.00**	

Incidental cost for 1 year

S No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	2000.67	516	10,32,344	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	1	1	352	168	59,136	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1299	225	8,76,825	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Kms	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 nos)
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	86.6	4	22	2250	1,98,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Kms		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Kms	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	128	1	4	55000	2,20,000	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	0.00	4000	-	Considered 1% of the total volume
	Total amount for 1 Year							**25,28,305**	

Operational Expenses

S No	PARTICULARS	Amount
1	Man Power	₹ 46,80,000
2	Fuel for Generator & Vehicles	₹ 28,08,000
3	Electricity	₹ 6,60,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 50,347
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 82,83,347**

Major Maintenance BOQ

BoQ Item No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqmsqm.	Sqm	5,62,700.00	14.00	78,77,800	5,62,700.00	14.00	78,77,800
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher	Cum	-	7,480.00		-	7,480.00	

BoQ	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.							
	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	7,033.75	6,800.00	4,78,29,500	7,033.75	6,800.00	4,78,29,500
	Micro surfacing	Sqm	2,81,350.00	160.00	4,50,16,000	2,81,350.00	160.00	4,50,16,000
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**10,07,23,300**			**10,07,23,300**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied	Sqm	20,006.67	516.00	1,03,23,440	20,006.67	516.00	1,03,23,440

BoQ	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms. per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.							
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**1,03,23,440**		-	**1,03,23,440**
	Grand Total				**11,10,46,740**			**11,10,46,740**

Annexure 6: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.

MPRDC

(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPABX), 0755-2550995, Fax : 91-755-2572643
Website : www.mprdc.nic.in

No. MPRDC/BOT/P-T R/2015/ 5225
Bhopal, dated 8 July,2015

M/s Dilip Buildcon Ltd.,
Plot No. 5, Inside Govind Narayan Singh Gate,
Chuna Bhatti,
Kolar Road,
Bhopal
Fax: 4089998

Sub: **Development of Patan-Tendukheda-Rehli (SH-15) Road on BOT (Toll+Annuity) basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of Patan-Tendukheda-Rehli (SH-15) Road on BOT (Toll +Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of **Rs.17,64,00,000.00 (Rupees seventeen crores sixty four lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA for acknowledgement**

M.P. ROAD DEVELOPMENT CORPN. LTD. BHOPAL-11 45-A, ARERA HILLS

(Arun Paliwal)
General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Certificate

MC CONSULTING ENGINEERS (P) LTD.

(ISO 9001 : 2000 Certified)

Civil Structural, Highways, Software Engineers Architecture (Architecture, Planning, Designing & Detailed Engineering
House No.-85, Poddar Colony, Shiva Ji, Ward, Sagar M.P. 07582-237183

Ref. No TL/MC/SAGAR/PTR/177 Date:- 31/03/2017

To,
Project Manager,
DBL Patan-Tendukheda-Rehli Tollways Limited
Above- Union Bank, Shahpura road,
Patan , Dist.:- Jabalpur (M.P.)
Email: anilsharma.nandu@gmail.com

Subject: - Development of Patan-Tendukheda-Rehli Road SH-15 road on BOT (Toll – Annuity) basis.

Regarding: - Provisional Completion Certificate.

Ref.:- Your office letter no - **DBL/BOT/PTR/MPRDC/2017/200 dated 27/02/2017.**

Dear Sir,

The Provisional Completion Certificate Dated 31.03.2017 in respect of **Patan - Tendukheda - Rehli (Including Rehli bypass) SH - 15 Toll – Annuity** road project, is sent here with for your reference and record.

Please acknowledge receipt
Encl. – Provisional Completion Certificate with Punch list.
Thanking You.

(Rakesh Kumar Tiwari)
Team Leader
MC Consulting Engineers
Sagar (M.P.)

Copy to:- (i) Personal Assistance to the Managing Director, MPRDC, Bhopal (M.P.)
(ii) The Chief Engineer, BOT, MPRDC, Bhopal (M.P.)
(iii) The Divisional Manager , MPRDC, Sagar (M.P.)
(iv) The Director M.C. Consulting Engineers Pvt. Ltd., Bhopal (M.P.)
(v) The Director, DBL Patan Rehli Tollways Limited , Bhopal (M.P.)
(vi) File Copy/Road/ Gen & CA

Encl. – Provisional Completion Certificate with Punch list

T 10, IIIrd Floor, City Centre, Press Complex, Plot No. -1, M.P. Nagar, Zone -1, Bhopal-462011
Tel./Fax: 0755-4295421, Mob.: 9977004686, Email : infraprojectbhopal@gmail.com

MC CONSULTING ENGINEERS (P) LTD.

(ISO 9001 : 2000 Certified)

Civil Structural, Highways, Software Engineers Architecture (Architecture, Planning, Designing & Detailed Engineering
House No.-85, Poddar Colony, Shiva Ji, Ward, Sagar M.P. 07582-237181

PROVISIONAL CERTIFICATE

1. I Rakesh Kumar Tiwari acting as independent Engineer. Under and in accordance with the Concession Agreement dated 1st September 2015 (the Agreement) for development of the Patan- Tendukheda – Rehli Road Section (km 31/10 to113/00km) of state Highway No. 15 (The Project Highway) on design builds, finance, operate and transfer (DBFOT) on Toll plus Annuity basis, through M/S DBL PATAN REHLI Toll Plus Annuity basis through hereby certify that the Tests specified in Article 14 and schedule -I of the Agreement have been undertaken to determine compliance of the project Highway with the provisions of the Agreement.
2. Constructions Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto and the concessionaire has agreed and accepted that it shall complete and /or rectify all such works in the time and manner set forth in the Agreement . (Some of the incomplete works have been delayed as a result of reasons attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the concessionaire)* I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users there of, and in terms of the Agreement, the Project Highway is hereby Provisionally declared fit for entry into commercial operation on this the 31stday of March2017.

ACCEPTED, SIGNED, SEALED
AND DELIEVERED
For and on behalf of
CONCESSIONAIRE. by

(Signature)
Mr. Kundan Das

Plot No.5 inside Govind Naryana singh gate.

Chuna Bhatti Kolar Road Bhopal.

SIGNED, SEALED
DELIEVERED
For and on behalf of
INDEPENDENT ENGINEER by:

Team Leader
MC Consulting Engineers (P) Ltd.
Sagar (M.P.)

(Signature)
Mr. Rakesh Kumar Tiwari

HouseNo.-85, poddar colony shivaji

Ward, Sagar (M.P.)

T-10, IIIrd Floor, City Centre, Press Complex, Plot No. -1, M.P. Nagar, Zone -1, Bhopal-462011
Tel./Fax: 0755-4295421, Mob.: 9977004686, Email : infraprojectbhopal@gmail.com

List of Balance work to be incorporate to Punch List

Sl. No.	Balance Work	Remark
1.	Structure Protection Work : Protection work , Pitching, water way clearance	Balance
2.	Highway Work - From Km. 77+600 to 90+000 = 12.4 Km. From Km. 114+250 to 117+200 = 2.95 Km. From Km. 30+600 to 31+800 = 1.20. Km.	Balance
3.	Toll Plaza at 34 +000 to 34 300 and 110+520 to 110+820 is in progress	under progress
4.	Road Marking 20 km completed	Work under progress
5.	Road Signage	Balance
6.	Road Furniture (Kilometer Stone)	Balance
7.	Covered Drain Work	Work under progress

For and on behalf of
PatanTendukhedaRehliTollways Limited

Project Manager

Authorized Signatory

For and on behalf of
Independent Engineer by Rakesh Kumar Tiwari

(Rakesh Kumar Tiwari)
Team Leader
MC Consulting Engineer, Sagar (M.P.)

Annexure 8: Completion Certificate

MC CONSULTING ENGINEERS (P) LTD.

(ISO 9001 : 2000 Certified)

Civil Structural, Highways, Software Engineers Architecture (Architecture, Planning, Designing & Detailed Engineering
House No.-85, Poddar Colony, Shiva Ji, Ward, Sagar M.P. 07582-237183

Ref. No: - TL/MC/SAGAR/PTR/237

Date:12/02/2018

To,
Authorized Signature
DBL Patan Rehli Tollways Limited

Subject: - Development of Patan-Tendukheda-Rehli Road SH-15 road on BOT (Toll + Annuity) basis **reg.** – Issuance of Completion Certificate accordance with clause 14.2 of Concession Agreement.
Ref:- Your office letter no. DBLBOT/ P-T-R/MPRDC/2016/27 dated 20.01.2018

Dear Sir,
Please refer the letter under reference as above, it is requested to issue the Completion Certificate accordance with clause 14.2 of Concession Agreement.
All works forming part of Patan-Tendukheda-Rehli Road have been completed, and the project Highway is found fit for entry in to commercial operation.
Hence the Completion Certificate is issued in favour of DBL Patan Rehli Tollways Limited.

Thanking you,

(Rakesh Kumar Tiwari)
Team Leader
MC Consulting Engineers
Sagar (M.P.)

Copy to:- (i) Chief Engineer(BOT), MPRDC, Bhopal, Bhopal (M.P.).
(ii) The Divisional Manager, MPRDC, Division Sagar, Sagar (M.P.).
(iii) M/s MC Consulting Engineer Pvt. Ltd. Bhopal (M.P.)
(iv) File Copy – Road / Material

T-10, IIIrd Floor, City Centre, Press Complex, Plot No. -1, M.P. Nagar, Zone -1, Bhopal-462011
Tel./Fax: 0755-4295421, Mob.: 9977004686, Email : infraprojectbhopal@gmail.com

MC CONSULTING ENGINEERS (P) LTD.

(ISO 9001 : 2000 Certified)

Civil Structural, Highways, Software Engineers Architecture (Architecture, Planning, Designing & Detailed Engineering

House No.-85, Poddar Colony, Shiva Ji, Ward, Sagar M.P. 07582-237183

COMPLETION CERTIFICATE

1. Mr. Rakesh Kumar Tiwari, acting as Independent Engineer. Under and in accordance with the Concession Agreement dated 01/09/2015 development of the Patan-Tendukheda-Rehli Road section (Km 30.800 to 117.400 Km) of state Highway No. 15 ("the Project highway") on design build finance, operate and transfer (DBFOT) on Toll Plus Annuity basis, through, DBL Patan-Rehli Toll ways Limited , hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the project Highway with the provisions of the Agreement, and I am satisfied that the project highway can be safely and reliably placed in commercial service of the users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-laning have been completed, and the project Highway is hereby declared fit for entry in to commercial operation on this the 12 day of February 2018.

SIGNED, SEALED AND DELIVERD
For and on behalf of
INDEPENDENT ENGINEER by:

(Rakesh Kumar Tiwari)
Team Leader
MC Consulting Engineers
Sagar (M.P.)

Team Leader
MC Consulting Engineers (P) Ltd.
Sagar (M.P.)

Annexure 9: Insurance

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001994
जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /*Office Code: 321300*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /*Business Source: 910355*
विक्रय चैनल वितरण/**Sales Channel** Code: *91035500000001*
नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number: 1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL PATAN REHLI TOLLWAYS LTD
पता/ Address: PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD , BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881846
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAFCD4196A

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 22,99,473.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 2,06,953.00		
SGST/UTGST	₹ 2,06,953.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	8800200327087172 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 27,13,379.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Twenty Seven Lakh Thirteen Thousand Three Hundred Seventy Nine Only.)
Location: Patan Tendukheda-Rehli (SH-15) Road. Gujarat Patan, Patan, 384265.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	2,15,50,00,000.00	1,00,000.00
2	Roads	Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	14,50,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

Printed on 27/03/2020 by ID: 75159

Page no: 1

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001994

जारीकर्ता कार्यालय/***Issuing Office***

कार्यालय कोड /*Office Code: 321300*

कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code 23 , Madhya Pradesh
***GSTIN** 23AAACN9967E1ZB*
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्त्रोत /*Business Source: 910355*

विक्रय चैनल विवरण/***Sales Channel*** *Code: 91035500000001*

नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*

सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Development of Patan-Tendukheda-Rehli (SH-15) Road on BOT (Toll + Annuity) basis.

Name of the co insured under the policy is Dilip Buildcon Ltd. & MPRDCL.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS , Riot, Strike, and Malicious Damage Clause, Terrorism Damage Exclusion Warranty, Agreed Bank Clause.

जिसकी गवाही में दिन/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को विधिवत अधिकृत किया जा रहा है उसके हाथ निर्धारित किए जाएं। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठांकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट https://nationalinsurance.nic.co.in पर उपलब्ध है, को एक अनुबंध के रुप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दिया जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्राथमिकता निरस्त हो जाएगी। ***/IN WITNESS WHEREOF**, the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this* **27/March/2020**. *This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website* **https://nationalinsurance.nic.co.in** *shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that* ***IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'***

इंश्योरेन्सइंडियालिमिटिड

स्टाम्प ड्यूटी
Stamp
Duty:
(₹ 0.50)

कृते नेशनल इन्श्योरेन्स कंपनी लिमिटिड/ ***For and on behalf of National Insurance Company Limited***

अधिकृत हस्ताक्षरकर्ता/ ***Authorized Signatory***

Printed on 27/03/2020 by ID: 75159

Page no: 2

TAX INVOICE

Invoice Serial No: 30871E9P00001994

Invoice Date: 27/03/2020

Details of Supplier:
National Insurance Company Limited.,
BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022
State : 23 , Madhya Pradesh
GSTIN No : 23AAACN9967E1ZB

Details Of Receiver : DBL PATAN REHLI TOLLWAYS LTD
Address : PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD , BHOPAL-462016
City : BHOPAL,
District: BHOPAL,
State: MADHYA PRADESH,
PIN: 462016.

Place Of Supply State : Machya Pradesh
State Code : 23
GSTIN No : 23AAFCD4196A1Z1

सैक कोड/ SAC Code	सेवा का वविरण/ Description of Service	कुल/Total(₹)	छूट/ Discount	टैक्स योग्य/ न्यूनय/Taxable Value(₹)	सीजीएसटी की राशि CGST		एसजीएसटी/यूटीजीएसटी/ SGST/UTGST		आईजीएसटी/IGST		केरला बाढ उपकर/Kerala Flood Cess
					दर/Rate	राशि Amount(₹)	दर/Rate	राशि Amount(₹)	दर/Rate	राशि Amount(₹)	राशि/Amount(₹)
997137	Other property insurance services	22,99,473	0%	22,99,473	9%	2,06,953	9%	2,06,953	0%	0	0
TOTAL		22,99,473		22,99,473		2,06,953		2,06,953		0	0

कुल इनवॉयस न्यूनय (अंकों में)Total Invoice Value (In figures) :
₹ 27,13,379

कुल इनवॉयस न्यूनय (शब्दों में)Total Invoice Value (In words) : □□□□/Rupees Twenty Seven Lakh Thirteen Thousand Three Hundred Seventy Nine केवल/Only.

रविर्स चार्ज के अधीन टैक्स की राशि Amount of Tax Subject to Reverse Charge : No

E.&.O.E

कृते नेशनल इन्शयोरेन्स कंपनी लिमिटेड/ *For and on behalf of National Insurance Company Limited*

अधिकृत हस्ताक्षरकर्ता/ *Authorized Signatory*

Printed on 27/03/2020 by ID: 75159

Page no: 3

वसूली रसीद/Collection Receipt

जारीकर्ता कार्यालय कोड/Issuing Office Code : 321300
जारीकर्ता कार्यालय का नाम व पता/Name and Address of Issuing Office :
BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022
राज्य कोड/State Code : 23 ,राज्य का नाम/State Name : Madhya Pradesh
जीएसटीआईएन/GSTIN : 23AAACN9967E1ZB
संपर्क संख्या/Contact Number : 755 2682822

रसीद सं./Receipt No : 321300811910007682 रसीद की तिथि व समय/Receipt Date & Time : 27/03/2020. 17:54 hours	स्क्रॉल सं. (यदि कोई हो)/Scroll No(If any) : 8821200327000294 स्क्रॉल तिथि (यदि कोई हो)/Scroll Date(If any) : 27/03/2020

श्री DBL PATAN REHLI TOLLWAYS LTD से सीडी- नकद जमा के रूप में रूपये
Rs. 27,13,379.00 निम्नलिखित लेनदेन के अनुसार धन्यवाद सहित प्राप्त हुआ। उपकरण स्क्रॉल किया गया है।
Received with thanks from DBL PATAN REHLI TOLLWAYS LTD a sum of Rs. 27,13,379.00 (Rupees Twenty Seven Lakh Thirteen Thousand Three Hundred Seventy Nine Only) by way of CD-Cash Deposit towards the following transactions. The instrument is scrolled.

भुगतान विवरण/Paymode Details :

भुगतान मोड का नाम/Paymode Name :	जमा खाता धारक का नाम/Deposit Account Holder Name :
CD-Cash Deposit संदर्भ सं./Ref No :	MS DILIP BUILDCON LIMITED संदर्भ तिथि/Ref Date :
881103220221 बैंक का नाम (यदि कोई हो)/Bank Name(If any) :	बैंक शाखा (यदि कोई हो)/Bank Branch(If any) :

आपके नकद जमा खाते में समायोजन के बाद उपलब्ध शेष रूपये

The available Balance of your Cash Deposit A/C. after adjustment is - CD a/c. 881103220221 : Balance-Rs.52540998.74

Adjusted from Receipt No. 321300811910007666. Balance Available - Rs. 47038906

क्र. सं./ S. No	विभाग/ Dept	पॉलिसी/पृष्ठांकन Policy/Endorsement		व्यव. श्रोत कोड/ Biz Source Code	व्यव.का वर्ग/ विवरण / Class of Business/Narration	राशि रू./ Amount Rs.
	लेन-देन कोड/ Tr Cd	वर्ष/ Year	संख्या/ Number	विक्रय चैनेल/ Sales Channel	लेखा विवरण/ Account Description	
1	44	2020	321300441910001994	910355	Civil Engineering Completed Risk	
	11			91035500000001	Direct Premium	22,99,473.00
					CGST	2,06,953.00
					SGST	2,06,953.00
					Total	27,13,379.00

कृते नेशनल इन्श्योरेन्स कं. लि./For National Insurance Co. Ltd,

रोकड़िया/Cashier :

प्राधिकृत हस्ताक्षरकर्ता/Authorised Signatory

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

October 10, 2020

DBL PATAN REHLI TOLLWAYS LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203677162100000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203677162100000 Page 1 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
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Certificate of Insurance cum Policy Schedule

Policy No. 3114203677162100000 **Employees Compensation Insurance**

Insured Name	DBL PATAN REHLI TOLLWAYS LIMITED (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL MADHYA PRADESH,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	10/10/2020

Period of Insurance	From Date & Time	05/10/2020 00:01 AM	To Date & Time	04/10/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203677162100000 Page 2 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

HDFC ERGO General Insurance Company Limited

Details of Employees Covered

Description of work done by Employees	Declared Number of Employees	Declared Wages during the Period of Insurance	Place/Places of Employment
All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled,Unskilled, Engineers,Supervisors, Managers, Daily Labour Etc. - Road Paving, Tarring and Road Making	10	2400000.00	Development of Patan-Tendukheda-Rehli (SH-15) Road on BOT (Toll + Annuity) basis

Premium Details (₹)

Basic Premium	**1387.00**
Integrated Tax 18%	**250.00**
Total Premium	**1637.00**

GST Registration No: 24AABCL5045N1ZE.The contract will be cancelled ab intio in case; the consideration under the policy is not realized.

List of Endorsements

Endt No	Description	Effective Date
WC-02-0008	Tariff Endorsement	05 October 2020
EC-13-0006	Insurance Contract	05 October 2020
EC-13-0005	Policy Schedule	05 October 2020
WC-02-0010	Medical Expenses Exclusion clause	05 October 2020
EC-13-0007	Communicable Disease Exclusion	05 October 2020
EC_12_0003	Contractors Employees	05 October 2020
01	Business - Construction of Road, Building and Other civil work related to insured trade	05 October 2020
	Warranted that there are no known losses and /or circumstances leading to losses (except for the claims and / or circumstances already reported to HDFC ERGO General Insurance Co. Ltd. This policy document is issued basis the information provided though request for quotation and/ or unsigned proposal form and / or other details provided by the insured / insurance intermediary and/ or though discussions and our final quote sheet issued to you enabling the insurer to decide the terms and conditions of insurance contract.	05 October 2020

3114203677162100000 Page 3 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

	Your are requested to inform us within 15 days of receipt of the policy document in the event of any error or omission in the information provided.	

Subject to terms and Conditions of Employees Compensation Insurance Policy attached herewith.

Mentioned are four special conditions for EC policy with context to the policy wordings.

1. Subrogation condition no.14 does not apply to this policy.
2. Average condition no. 9 does not apply to this policy. However, this is subject to adjustment of premium on the basis of actual number of employees and their wages at the time of claims.
3. This policy is issued to cover employer's legal liability for accidents to employees under - The Fatal Accidents Act, 1855.
4. The Wages declared is estimated wages for the Coming Year. Any Increase or Decrease in wages will be declared at the End of Policy & Subject to that Premium will be charged or refunded

Note: The stamp duty of Rs. 0.69 (Rupees Sixty-Nine Paise Only) is paid by Demand Draft as consolidated stamp duty, vide Receipt/Challan no CSD/293/2020/385/2020 dated 24/01/2020 as prescribed in Government Notification Revenue and Forest Department No Mudrank 2004/4125/CR 690/M-1, dated 31/12/2004

Invoice No	203677162100000	**GSTN No**	23AACCD6124B2ZD
Place of Supply	MADHYA PRADESH	**HSN Code**	997139
Policy Issuance Date	10-10-2020	**Branch**	AHMEDABAD - SHOPPER PLAZA - IV

For HDFC ERGO General Insurance Company Ltd

Broker Name:GLOBAL INSURANCE BROKERS PVT LTD
Broker Code:200113159601

Duly Constituted Attorney

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

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EMPLOYEES COMPENSATION INSURANCE

POLICY WORDINGS

WHEREAS the **Insured** by a Proposal which shall be the basis of this Contract and deemed to be incorporated herein, has applied to HDFC ERGO General Insurance Company Limited (hereinafter called "the Company") for the insurance hereinafter contained for the **Business** described in the **Schedule** and has paid or agreed to pay the premium stated in the **Schedule** as consideration for such insurance.

NOW THIS **POLICY** WITNESSETH, subject to the terms exceptions and conditions contained herein or endorsed hereon, that if at any time during the **Period of Insurance** any **Employee or Employees** of the **Insured** shall sustain **Injury** by accident arising out of and in the course of his employment in the **Business**, for which the **Insured** is liable to pay compensation under any Law(s) specified in the **Schedule**, then the Company shall indemnify the **Insured** up to the **Limit of Indemnity** against all sums for which the **Insured** shall be so liable, including costs and expenses for defending any such claim incurred with the Company's consent.

PROVIDED ALWAYS that in the event of any change in the Law(s) or the substitution of other legislation therefore, this **Policy** shall remain in force but the liability of the Company shall be limited to such sum as the Company would have been liable to pay if the Law(s) had remained unaltered.

DEFINITIONS

This Policy, the **Schedule** and any Clauses thereon shall be considered one document and any word or expression to which a specific meaning has been attached in Definitions bears that specific meaning wherever it appears in this Policy in bold typeface.

Business means the Business of the **Insured** as specified in the **Schedule** in respect of which this Policy is issued.

Injury means physical bodily injury including death resulting from such injury arising out of an accident but does not include any mental sickness, disease, **Occupational Disease**, unless caused by such physical bodily injury.

Insured means the person or organization specified in the Policy **Schedule** but does not include their Contractors or Sub Contractors.

Occupational Disease means any occupational disease or illness including but not limited to the diseases listed under Schedule III of the Employees' Compensation Act, 1923 contracted by an **Employee** due to employment in the **Business**.

Wages means the remuneration payable to an **Employee** by the **Insured** for the employment in the **Business** and includes any privilege or benefit which is capable of being estimated in money other than a travelling allowance or the value of any travelling concession or a contribution paid by the employer of an employee towards any pension or provident fund or a sum paid to an employee to cover any special expenses entailed on him by the nature of his employment;

Employee or Employees means such person or persons in direct employment under the **Insured** in the **Business**, but shall not include any person employed under a Contractor or Sub-Contractor of the **Insured** unless specifically shown as covered in the **Schedule and by an endorsement**.

Schedule means the Schedule attached to and forming part of this **Policy**.

Period of Insurance means the period for which this insurance is availed by the **Insured** as specified in the **Schedule**, unless cancelled earlier.

EC-13-0004

3114203677162100000 Page 5 of 14

HDFC ERGO General Insurance Company Limited

Limit of Indemnity means the maximum amount of indemnity as specified in the **Schedule** that will be provided under this Policy by the Company in respect of

a) any particular claim by an **Employee** and

b) all claims arising out of all accidents for any number of **Employees** during the **Period of Insurance**.

EXCLUSIONS

This Policy shall not cover liability of the **Insured**:

(a) For **Injury** caused to **Employee** by accident directly or indirectly caused by or arising from or in consequence of or attributable to war, invasion, act of foreign enemy, hostilities (whether war be declared or not) civil war, mutiny, insurrection, rebellion, revolution or military or usurped power, nuclear weapons material, ionising radiations or contamination by radioactivity from any nuclear fuel or from any nuclear waste from the combustion of nuclear fuel.

(b) Accident occurring at any other place than the Place or Places of Employment specified in the **Schedule**, unless the **Employee** was at such other place whilst on duty for the purpose of the **Business** and on the directions of the **Insured** or any of its official authorized to exercise control and supervision over the **Employee**.

(c) For **Occupational Diseases** contracted by an **Employee**.

(d) For interest and/or penalty imposed on the **Insured** under any law or otherwise.

(e) Under any Law for medical expenses in connection with treatment of any **Injury** sustained by an **Employee**

(f) For persons employed in the **Business** under a Contractor or Sub-Contractor of the **Insured** unless specifically covered in the **Schedule**

(g) For **Injury** sustained by person whilst in the employ of the **Insured** otherwise than in the **Business** and/or who has is not declared for insurance under this Policy.

(h) Assumed by agreement which would not have attached in the absence of such agreement.

(i) For any sum which the **Insured** would have been entitled to recover from any party but for an agreement between the **Insured** and such party.

(j) For any accident occurring whilst the **Employee** is under the influence of intoxicating liquor or drugs.

(k) For any incapacity or death of an **Employee** resulting from his/her deliberate self-injury or the deliberate aggravation of an accidental **Injury**.

CONDITIONS

1. **The Contract:** This **Policy** and the **Schedule** shall be read together as one contract and any word defined herein and shown in bold shall bear such specific meaning wherever it may appear in the **Policy** or the **Schedule**.
2. **Due Observance:** The due observance and fulfilment of the terms, conditions and endorsements of this **Policy** so far as they relate to anything to be done or not to be done by the **Insured** shall be condition precedent to any liability of the Company to make any payment under this **Policy**.
3. **Mis-representation/Non-Disclosure:** This Policy shall be void in the event of any mis-representation or non-disclosure in the Proposal and the **Insured** is deemed to warrant the truth and accuracy of the statements and answers in the Proposal which form the basis of this Policy.
4. **Written Communication:** Every notice or communication to be given or made under this **Policy** shall be delivered in writing to the Company.
5. **Safeguards:** The **Insured** shall take reasonable precautions to prevent accidents and disease and shall comply with all statutory obligations, manufacturer's recommendations and other safety regulations in conduct of the **Business**.

EC-13-0004

3114203677162100000 Page 6 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

6. **Claim Intimation:** In the event of any occurrence which may give rise to a claim under this **Policy** the **Insured** shall as soon as possible, and in any case within a period of thirty days of such occurrence, give notice thereof to the Company in writing with full particulars. Every letter claim writ summons and process shall be notified to the Company immediately on receipt. Notice shall also be given to the Company immediately the **Insured** shall have knowledge of any impending prosecution inquest or fatal enquiry in connection with any such occurrence as aforesaid.

7. **Company's Rights After Loss:** No admission offer promise or payment shall be made by or on behalf of the **Insured** without the consent of the Company which shall be entitled, without being obliged to do so, if it so desires to take over and conduct in his name the defence or settlement of any claim or to prosecute in his name for its own benefit any claim for indemnity or damages or otherwise and shall have full discretion in the conduct of any proceedings and in the settlement of any claim and the **Insured** shall give all such information and assistance as the Company may require.

8. **Declaration of Employees and Wages:** It is clearly agreed and Understood that the **Insured** shall be bound at all times to declare all **Employees** and **Wages** payable in respect of such **Employees** on the basis of which the Premium for this Policy is calculated.

   In case of increase in **Employees** or **Wages** subsequent to insurance, **Insured** shall keep the Company intimated and obtain Endorsement by payment of necessary additional premium.

   The **Insured** shall as and when require by the Company permit inspection of its records to verify the **Wages** and **Employees** and shall also provide duly authenticated copies thereof if so required the Company.

9. **Average:** Notwithstanding anything contained hereinabove,

   (i) a) If the number of **Employees** (whether on duty or otherwise) employed by the **Insured** on the date of accident is higher than the number covered under this Policy, the Company shall indemnify **Insured's** liability arising out of such accident, only in such proportion that the number of **Employees** covered bears to the **Employees** found employed on the date of accident.

   b) If the amount of **Wages** declared for this insurance for all **Employees** is less than the actual **Wages** paid until date of accident, the Company shall be liable to indemnify on any claim only in proportion that the Wages declared bears to the **Wages** paid. For the purpose of this clause, the **Wages** declared shall be calculated proportionately for the period from commencement of Policy until date of accident for comparison with the actual **wages** paid during such period to determine applicability of this clause.

   c) If the liability of the **Insured** for any claim by an **Employee** is determined on the basis of **Wages** higher than covered under this Policy, the Company shall be liable to indemnify only in proportion that the **Wages** covered under the Policy for the **Employee/Employees** bears to the **Wages** on the basis of which **Insured** is held liable. For the purpose of this clause, the **Wages** covered in respect of any **Employee** shall be deemed to be the average wage per **Employee** in the category under which the **Employee** falls as specified in the **Schedule**, unless actual **Wages** paid at the time of accident is substantiated by submission of documentary evidence to the Company.

   (ii) If more than one of the above clauses is found applicable in respect of a claim, only such clause under which the liability of the Company is least shall be applied.

10. **Maintenance of record of Employees/Wages:** The **Insured** undertakes to maintain an accurate record of the **Employees** and **Wages** in respect of the **Business** throughout the **Period of Insurance**, in compliance with all statutory requirements or otherwise, and allow the **Company** to inspect such records during or upon expiry of this **Policy**.

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3114203677162100000 Page 7 of 14

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

11. **Contribution:** If at the time of the happening of an accident covered by this **Policy** there shall be any other insurance covering the same risk in respect of the **Employee** whether or not effected by the **Insured**, then the Company shall not be liable to contribute more than its rateable proportion of the amount that would otherwise be payable under this Policy.

12. **Cancellation:** The **Insured** may cancel this **Policy** by sending at least 15 days written notice to the **Company** and in such event the premium shall be adjusted in accordance with Condition 8 above.

    Company also reserves the right to cancel this **Policy** immediately upon becoming aware of any mis-representation, fraud, non-disclosure of material facts or non-cooperation by or on behalf of the **Insured**; the **Company** is not obliged to refund the premium already paid under the **Policy**.

    Notice of cancellation will be mailed to the **Insured** last known address. If notice of cancellation is mailed, proof of mailing will be sufficient proof of notice.

    Company shall have no obligation to give notice that the **Policy** is due for renewal or renew this **Policy** upon expiration or cancellation.

13. **Forfeiture:** If the **Insured** shall make any claim or connive in the making of any claim, knowing the claim to be false or fraudulent, the **Policy** shall become void and all claims will stand forfeited.

14. **Subrogation:** In the event of any payment under this **Policy**, the **Company** shall be subrogated to the extent of such payment to all the **Insured's** rights of recovery and the **Insured** shall execute all papers required and shall do everything necessary to secure and preserve such rights, including the execution of such documents necessary to enable the **Company** effectively to bring suit in the name of each **Insured**.

15. **Alteration and Assignment:** No change in, modification of, or assignment of interest under this **Policy** shall be effective except when made by a written endorsement to this **Policy** which is signed by an authorised employee of the **Company**.

16. **Premium Payment:** It is hereby agreed that, as a condition precedent to any liability under this **Policy**, any premium due must be paid and actually received by the **Company** in full. However, where the remittance made by the **Insured** is not realised by the **Company** the **Policy** shall be treated as void-ab-inito

17. **Arbitration:**

a) If any dispute or difference shall arise as to the quantum to be paid under this **Policy** (liability being otherwise admitted) in respect of any claim, such difference shall independently of all other question be referred to the decision of a sole arbitrator to be appointed in writing by the parties to or if they cannot agree upon a single arbitrator to a panel of three arbitrators to be appointed in accordance with the provisions of the Arbitration and Conciliation Act, 1996. The arbitration shall be governed by Indian law. The venue of arbitration shall be within India.

b) It is clearly agreed and understood that no reference to arbitration can be made if the **Company** has either not admitted or has disputed liability in respect of any claim under or in respect of this **Policy**.

c) In the event that these arbitration provisions shall be held to be invalid then all such disputes or differences shall be referred to the exclusive jurisdiction of the Indian Courts.

d) It is further expressly agreed and declared that if the **Company** shall disclaim liability in respect of any claim and is not within 12 calendar months from the date of such disclaimer be made the subject matter of a suit or proceeding before a Court of law or any other forum, it shall for all purposes be deemed to have been abandoned and shall not thereafter be recoverable hereunder.

18. **Law and Jurisdiction:** It is hereby declared and agreed that this contract of insurance and all claims there under shall be governed by Indian Law and any legal proceeding in respect thereof shall be raised a competent court of India. All claims shall be paid in Indian Rupees only.

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3114203677162100000 Page 8 of 14

HDFC ERGO General Insurance Company Limited

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Tariff Endorsement

Endorsement

Policy Period	Effective Date	From	00:01	hours	October 05, 2020
	Expiry Date	To (Midnight)			October 04, 2021
Effective Date	October 05, 2020				
Policy Number	3114203677162100000				
Insured	DBL PATAN REHLI TOLLWAYS LIMITED				
Name of Company	HDFC ERGO General Insurance Company Limited				
Date Issued	October 10, 2020				

Tariff Endorsement	It is hereby understood and agreed that any work in connection with the use of explosives or in connection with the construction of sewers exceeding in any part a depth of 3 Metres from the surface or in connection with tunnelling is expressly excluded from the indemnity granted under this Policy. Subject to otherwise to the terms, provisions and conditions of the within Policy.

Authorised Representative

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

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Coverage for Contractors Workers/ Employees

Endorsement

Policy Period	Effective Date From 00:01 hours	: October 05, 2020
	Expiry Date To (Midnight)	: October 04, 2021
Effective Date	October 05, 2020	
Policy Number	3114203677162100000	
Insured	DBL PATAN REHLI TOLLWAYS LIMITED	
Name of Company	HDFC ERGO General Insurance Company Limited	
Date Issued	October 10, 2020	

Coverage for Contractors Workers/ Employees	In consideration of the payment of an additional premium it is hereby understood and agreed that the indemnity herein granted is extended to cover the legal liability of the **Insured** to **Employees** in the employment of Contractors performing work for the **Insured** while engaged in the **Business** in respect of which the within Policy is granted, but only so far as regard claims under the Employees Compensation Act, 1923, and subsequent amendments of said Act prior to the date of the issue of this Policy.

1. Contractor's Name: Details to be provided at the time of the Claim
   Registered Address: Details to be provided at the time of the Claim

Sr. No.	Description of work done by **Employees**	Declared Number of **Employees**	Declared **Wages**/Contract Value during the **Period of Insurance**	Place/Places of Employment
1	All categories of employees of DBL & Sub-contractor engaged in DBL - Highly Skilled, Skilled, Semi-Skilled, Unskilled, Engineers,Supervisors, Managers, Daily Labour Etc. - Road Paving, Tarring and Road Making	0	Contractual employees is included in the total number of employees. However split of contractual employees to be provided at the time of claim.	Development of Patan-Tendukheda-Rehli (SH-15) Road on BOT (Toll + Annuity) basis

Authorised Representative

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
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Medical Expenses Exclusion

Endorsement

Policy Period	Effective Date From 00:01 hours October 05, 2020 Expiry Date To (Midnight) October 04, 2021
Effective Date	October 05, 2020
Policy Number	3114203677162100000
Insured	DBL PATAN REHLI TOLLWAYS LIMITED
Name of Company	HDFC ERGO General Insurance Company Limited
Date Issued	October 10, 2020

Medical Expenses Exclusion	This policy does not cover Medical Expenses

All other terms and conditions remain unchanged.

Kargotra

Authorised Representative

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3114203677162100000

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

GRIEVANCE REDRESSAL PROCEDURE

If you have a grievance that you wish us to redress, you may contact us with the details of your grievance through:

- Call Center (Toll free helpline)
  1800 2 700 700 (accessible from any Mobile and Landline within India)
  1800 226 226 (accessible from any MTNL and BSNL Lines)

- Emails - grievance@hdfcergo.com
- Designated Grievance Officer in each branch.
- Company Website - www.hdfcergo.com
- Fax : 022 - 66383699
- Courier : Any of our Branch office or corporate office

You may also approach the Complaint & Grievance (C&G) Cell at any of our branches with the details of your grievance during our working hours from Monday to Friday.

If you are not satisfied with our redressal of your grievance through one of the above methods, you may contact our Head of Customer Service at

The Complaint & Grievance Cell,
HDFC ERGO General Insurance Company Limited
D-301,3rd Floor, Eastern Business District (Magnet Mall),LBS Marg,
Bhandup (West), Mumbai - 400078,
e-mail: grievance@hdfcergo.com

In case you are not satisfied with the response / resolution given / offered by the C&G cell, then you can write to the Principal Grievance Officer of the Company at the following address

The Cheif Grievance Officer
HDFC ERGO General Insurance Company Limited
D-301,3rd Floor, Eastern Business District (Magnet Mall),LBS Marg,
Bhandup (West), Mumbai - 400078 ,
e-mail: cgo@hdfcergo.com

You may also approach the nearest Insurance Ombudsman for resolution of your grievance. The contact details of Ombudsman offices are mentioned below if your grievance pertains to:

- Insurance claim that has been rejected or dispute of a claim on legal construction of the policy
- Delay in settlement of claim
- Dispute with regard to premium
- Non-receipt of your insurance document

You may also refer our website https://www.hdfcergo.com/customer-care/grievances.html for detailed grievance redressed procedure.

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
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Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

Ombudsman Offices	
Jurisdiction	**Office Details**
Gujarat, Dadra & Nagar Haveli, Daman and Diu	AHMEDABAD Office of the Insurance Ombudsman, 2nd floor, Ambica House, Near C.U. Shah College, 5, Navyug Colony, Ashram Road, Ahmedabad - 380 014. Tel.: 079 -27546150 / 27546139 Fax: 079 - 27546142 Email: bimalokpal.ahmedabad@gbic.co.in
Orissa	BHUBANESHWAR - Shri. B. N. Mishra Office of the Insurance Ombudsman, 62, Forest park, Bhubneshwar - 751 009. Tel.: 0674 - 2596461 /2596455 Fax: 0674 - 2596429 Email: bimalokpal.bhubaneswar@gbic.co.in
Tamil Nadu, Pondicherry Town and Karaikal (which are part of Pondicherry)	CHENNAI - Shri Virander Kumar Office of the Insurance Ombudsman, Fatima Akhtar Court, 4th Floor, 453, Anna Salai, Teynampet, CHENNAI - 600 018. Tel.: 044 - 24333668 / 24335284 Fax: 044 - 24333664 Email: bimalokpal.chennai@gbic.co.in
Assam, Meghalaya, Manipur, Mizoram, Arunachal Pradesh, Nagaland and Tripura	GUWAHATI Office of the Insurance Ombudsman, Jeevan Nivesh, 5th Floor, Nr. Panbazar over bridge, S.S. Road, Guwahati - 781001(ASSAM). Tel.: 0361 - 2132204 / 2132205 Fax: 0361 - 2732937 Email: bimalokpal.guwahati@gbic.co.in
Madhya Pradesh Chattisgarh	BHOPAL - Shri. R K Srivastava Office of the Insurance Ombudsman, Janak Vihar Complex, 2nd Floor, 6, Malviya Nagar, Opp. Airtel Office, Near New Market, Bhopal - 462 003. Tel.: 0755 - 2769201 / 2769202 Fax: 0755 - 2769203 Email: bimalokpal.bhopal@gbic.co.in
Punjab, Haryana, Himachal Pradesh, Jammu & Kashmir,Chandigarh	CHANDIGARH - Shri. Manik B. Sonawane Office of the Insurance Ombudsman,S.C.O. No. 101, 102 & 103, 2nd Floor, Batra Building, Sector 17 - D, Chandigarh - 160 017. Tel.: 0172 - 2706196 / 2706468 Fax: 0172 - 2708274 Email: bimalokpal.chandigarh@gbic.co.in
Delhi	DELHI - Smt. Sandhya Baliga Office of the Insurance Ombudsman, 2/2 A, Universal Insurance Building, Asaf Ali Road, New Delhi - 110 002. Tel.: 011 - 23239633 / 23237539 Fax: 011 - 23230858 Email: bimalokpal.delhi@gbic.co.in
Andhra Pradesh,Telangana,Yanam and part of Territory of Pondicherry	HYDERABAD - Shri. G. Rajeswara Rao Office of the Insurance Ombudsman, 6-2-46, 1st floor, "Moin Court", Lane Opp. Saleem Function Palace, A. C. Guards, Lakdi-Ka-Pool, Hyderabad - 500 004. Tel.: 040 - 65504123 / 23312122 Fax: 040 - 23376599 Email:bimalokpal.hyderabad@gbic.co.in
Kerala, Lakshadweep, Mahe-a part of Pondicherry	ERNAKULAM - Shri. P. K. Vijayakumar Office of the Insurance Ombudsman, 2nd Floor, Pulinat Bldg., Opp. Cochin Shipyard, M. G. Road, Ernakulam - 682 015. Tel.: 0484 - 2358759 / 2359338 Fax: 0484 - 2359336 Email: bimalokpal.ernakulam@gbic.co.in
Rajasthan	JAIPUR - Shri. Ashok K. Jain Office of the Insurance Ombudsman, Jeevan Nidhi - II Bldg., Gr. Floor, Bhawani Singh Marg, Jaipur - 302 005. Tel.: 0141 - 2740363 Email: Bimalokpal.jaipur@gbic.co.in
Districts of Uttar Pradesh : Lalitpur, Jhansi, Mahoba, Hamirpur, Banda, Chitrakoot, Allahabad, Mirzapur, Sonbhabdra, Fatehpur, Pratapgarh, Jaunpur,Varanasi, Gazipur, Jalaun, Kanpur, Lucknow, Unnao, Sitapur, Lakhimpur, Bahraich, Barabanki, Raebareli, Sravasti, Gonda, Faizabad, Amethi, Kaushambi, Balrampur, Basti, Ambedkarnagar, Sultanpur, Maharajganj, Santkabimagar, Azamgarh, Kushinagar, Gorkhpur, Deoria, Mau, Ghazipur, Chandauli, Ballia, Sidharathnagar	LUCKNOW - Shri. N. P. Bhagat Office of the Insurance Ombudsman, 6th Floor, Jeevan Bhawan, Phase-II, Nawal Kishore Road, Hazratganj, Lucknow - 226 001. Tel.: 0522 - 2231330 / 2231331 Fax: 0522 - 2231310 Email: bimalokpal.lucknow@gbic.co.in
Karnataka	BENGALURU - Shri. M. Parshad Office of the Insurance Ombudsman, Jeevan Soudha Building,PID No. 57-27-N-19 Ground Floor, 19/19, 24th Main Road, JP Nagar, Ist Phase, Bengaluru - 560 078. Tel.: 080 - 26652048 / 26652049 Email: bimalokpal.bengaluru@gbic.co.in
West Bengal, Bihar, Sikkim, Jharkhand, Andaman & Nicobar Islands	KOLKATA - Shri. K. B. Saha Office of the Insurance Ombudsman, Hindustan Bldg. Annexe, 4th Floor, 4, C.R. Avenue, KOLKATA - 700 072. Tel.: 033 - 22124339 / 22124340 Fax : 033 - 22124341 Email: bimalokpal.kolkata@gbic.co.in
Goa, Mumbai Metropolitan Region excluding Navi Mumbai & Thane	MUMBAI - Shri. A. K. Dasgupta Office of the Insurance Ombudsman, 3rd Floor, Jeevan Seva Annexe, S. V. Road, Santacruz (W), Mumbai - 400 054.Tel.: 022 - 26106552 / 26106960 Fax: 022 - 26106052 Email: bimalokpal.mumbai@gbic.co.in
Maharashtra, Area of Navi Mumbai and Thane excluding Mumbai Metropolitan Region	Pune - Shri. A. K. Sahoo Office of the Insurance Ombudsman, Jeevan Darshan Bldg., 2nd Floor, C.T.S. Nos. 195 to 198, N.C. Kelkar Road, Narayan Peth, Pune - 411 030. Tel.: 020 - 32341320 Email: bimalokpal.pune@gbic.co.in
State of Uttaranchal and the following Districts of Uttar Pradesh: Agra, Aligarh, Bagpat, Bareilly, Bijnor, Budaun, Bulandsheher, Etah, Kanooj, Mainpuri, Mathura, Meerut, Moradabad, Muzaffarnagar, Oraiya, Pilibhit, Etawah, Farrukhabad, Firozbad, Gautambodhanagar, Ghaziabad, Hardoi, Shahjahanpur, Hapur, Shamli, Rampur, Kashganj, Sambhal, Amroha, Hathras, Kanshiramnagar, Saharanpur.	NOIDA Office of the Insurance Ombudsman, Email: bimalokpal.noida@gbic.co.in

STATUTORY NOTICE: "INSURANCE IS THE SUBJECT MATTER OF SOLICITATION"

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117 | UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

EXCLUSION - COMMUNICABLE DISEASE

1. Notwithstanding any provision, clause or term of this Insurance Contract to the contrary, this Insurance Contract excludes any loss, cost, damage, liability, claim, fines, penalty or expense or any other amount of whatsoever nature, whether directly or indirectly and/or in whole or in part, related to, caused by, contributed to by, resulting from, as a result of, as a consequence of, attributable to, arising out of, arising under, in connection with, or in any way involving (this includes all other terms commonly used and/or understood to reflect or describe nexus and/or connection from one thing to another whether direct or indirect):

   1.1. a Communicable Disease and/or the fear or threat (whether actual or perceived) of a Communicable Disease and/or the actual or alleged transmission of a Communicable Disease regardless of any other cause or event contributing and/ or occurring concurrently or in any sequence thereto, and

   1.2. a pandemic or epidemic, as declared by the World Health Organisation or any governmental authority.

2. As used herein, Communicable Disease means: any infectious, contagious or communicable substance or agent and/or any infectious, contagious or communicable disease which can be caused and/or transmitted by means of substance or agent where:

   2.1. the disease includes, but is not limited an illness, sickness, condition or an interruption or disorder of body functions, systems or organs, and

   2.2. the substance or agent includes, but is not limited to, a virus, bacterium, parasite, other organism or other micro-organism (whether asymptomatic or not); including any variation or mutation thereof, whether deemed living or not, and

   2.3. the method of transmission, whether direct or indirect, includes but not limited to, airborne transmission, bodily fluid transmission, transmission through contact with human fluids, waste or the like, transmission from or to any surface or object, solid, liquid or gas or between organisms including between humans, animals, or from any animal to any human or from any human to any animal, and

   2.4. the disease, substance or agent is such:

   2.4.1. that causes or threatens damage or can cause or threaten damage to human health or human welfare, or

   2.4.2. that causes or threatens damage to or can cause or threaten damage to, deterioration to, contamination of, loss of value of, loss of marketability of or loss of use or usefulness of, tangible or intangible property.

For avoidance of doubt, Communicable Disease includes but is not limited to Coronavirus Disease 2019 (Covid -19) and any variation or mutation thereof.

Authorised Representative

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HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020
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UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

TAX INVOICE

HDFC ERGO
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Details of Insurerd		Details of Insurer	
Insured Name	: DBL PATAN REHLI TOLLWAYS LIMITED	Insurer Name	: HDFC ERGO General Insurance Company Limited
Correspondance Address	: PLOT NO. 5, GOVIND NARAYAN SINGH GATECHUNA BHATTI, BHOPAL MADHYA PRADESHBHOPAL, MADHYA PRADESH -462016	Branch Address	: 206, SEC FL. SHOPPER PLAZA IV,OPP. BSNL TEL EXCH RD, NAVARANGPURA,AHMEDABAD, 380006.
		GSTIN	: 24AABCL5045N1ZE
Billing Address	: PLOT NO. 5,, GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, BHOPAL, BHOPAL, MADHYA PRADESH, PIN-462016.		
Place of Supply	: Madhya Pradesh	Policy No.	: 3114203677162100
State Code	: 23	Certificate No.	: 31142036771621000000
PAN	: AACCD6124B	Invoice No.	: 203677162100000
GSTIN	: 23AACCD6124B2ZD	Policy issue date / Invoice date	: 10/10/2020

Premium Details (₹)

S.No.	Description of Services	HSN Code	Premium Amount	CGST		SGST		IGST		Total Tax	Premium Value with Tax
				Tax %	Amount	Tax %	Amount	Tax %	Amount		
1	Employees Compensation Insurance Policy	997139	1387	9%	0	9%	0	18%	250	250	1637
										Total Invoice Value	1637
Total Invoice Value (In Words)		RUPEES ONE THOUSAND SIX HUNDRED THIRTY-SEVEN AND ZERO PAISE ONLY									

Whether Tax is payable on Reverse charge basis : No

For HDFC ERGO General Insurance Company Ltd

Authorised

HDFC ERGO General Insurance Company Limited
Registered & Corporate Office: 1st Floor, HDFC House, 165/166 Backbay Reclamation, H.T.Parekh Marg, Mumbai - 400 020

| IRDAI Reg No.146 | CIN : U66030MH2007PLC177117
Customer Service Address: D 301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Annexure 10: Change of Scope

CIN : U45203MP2004SGC016758

M.P. Road Development Corporation Ltd.

(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462011
☎ : 0755-2527290 / 2765205 Fax : 0755-2572643, Web : mprdc.nic.in

Letter No. ...../Patan-Tendukheda-Rehli/COS/06/2017, Bhopal Date .09.2017

To,

Team Leader,
M/s MC Consulting Engineers Pvt. Ltd.,
H. No. 85, Poddar Colony,
Shivaji Ward, Sagar [M.P.]

Sub. :- Development of Patan-Tendukheda-Rehli Road (SH-15) on BOT (Toll+Annuity) Basis. ***Regarding Minutes of Meeting of Advisory Committee.***

Ref. : M/s MC Consulting Engineers (P) Ltd., letter no. TL/MC/SAGAR/PTR/Gen & CA/186, Date 24.04.2017.

A meeting of Advisory Committee has been held on 22.08.2017 to decide the Change of Scope of Patan-Tendukheda-Rehli (SH-15) road project. Change of Scope items is hereby in-principle approved by the Advisory Committee. Minutes of meeting is enclosed herewith.

Please refer T.O. letter no. 6168, dated 22.07.2015 (Copy enclosed), as per Instruction of MD, MPRDC after in-principle approval of Change of Scope, Financial Implication of approved Change of Scope should be checked and certified by a Committee formed at the level of General Manager concerned. The Committee will be headed by General Manager (Field), IE, concern DM & AGM along with one member of MPRDC, FQ of the level of DGM.

You are requested to submit the Financial Implication of in-principle approved Change of Scope items to this office through GM Level Committee.

Encl. :- Minutes of Meeting (14 pages).

Sd/-
(Ashutosh Mishra)
Chief Engineer (BOT)
MPRDC, Bhopal

Endt. No. 9667/Patan-Tendukheda-Rehli/COS/06/2017, Bhopal Date 5 .09.2017

Copy to :-

1. General Manager, MPRDC, Narmadapuram [M.P.] for information & necessary action please.
2. Divisional Manager, MPRDC, Sagar [M.P.] for information & necessary action please.
3. Concessionaire, M/s DBL Patan-Rehli Tollway Ltd., Bhopal, for information & necessary action please.

Encl. :- Minutes of Meeting (14 pages).

Chief Engineer (BOT)
MPRDC, Bhopal

Connecting People Through quality infrastructure

MINUTES OF MEETING

A meeting of Advisory Committee was held on 22.08.2017 in MPRDC, Bhopal to discuss the Change of Scope proposal of Patan-Tendukheda-Rehli Road Project (Toll+Annuity). Following Officials were present in the meeting.

1. Shri A.S. Chendke, Technical Advisor, MPRDC, Bhopal.
2. Shri Anil Chansorla, E-in-C, MPRDC, Bhopal.
3. Shri Sunil Mukati, General Manager (BOT), MPRDC, Bhopal.
4. Shri R.K. Tiwari, Team Leader, IE M/s MC Consulting Engineers Pvt. Ltd., Sagar.
5. Shri Nitin Shrivastava, Authorized Signatory of Concessionaire, M/s DBL Patan Rehli Tollways Ltd., Bhopal.

S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
1	Reduction in formation width from 8.75 mtr. to 7.6 mtr. With reduction from Km 77+600 to Km 99+000 (Nauradehi WLS) = 21.40 Km	-	Single lanning (8.75 mtr.) with 2.5 mtr. granular shoulder formation width 8.75 mtr. (Fig.-2.6 as per Schedule - D)	Reduction in formation width from from 8.75 mtr. to 7.6 mtr. and carriageway width from 3.75 mtr. To 3.6 mtr with formation of width of 7.6 mtr.from Km 77+600 to Km 99+000 (Nauradehi WLS) = 21.40 Km	Agree with the justification of the Concessionaire that, the WLS Authorities permitted development in 7.6 mtr formation width only in Nauradehi WLS from Km 77+600 to Km 99+000 in a length of 21.40 Km. The work done with 7.6 mtr formation width and 3.60 mtr carriageway width shall be treated as positive COS & work with 8.75 mtr formation width and 3.75 mtr carriageway width shall be treated as negative COS.	Agree with the recommendation of the IE that, the work done with 7.6 mtr formation width and 3.60 mtr carriageway width shall be treated as positive COS & work with 8.75 mtr formation width and 3.75 mtr carriageway width shall be treated as negative COS.
2	Construction of retaining walls at following locations on approaches of cattle under passes due to high embankment. :- 1. Ch. 80+114 2. Ch. 81+262	-	-	To protect the high embankment due to restricted ROW of 7.6m in Sanctuary Area in the approaches of cattle underpasses, Concessionaire has constructed retaining	Concessionaire has constructed retaining walls in following locations due to restricted ROW of 7.6m in Sanctuary Area:- 1. Ch. 80+134 2. Ch. 81+262 3. Ch. 86+045 Total 796.553m retaining wall	Agree with the recommendation of the IE that, retaining wall in a length of approximate 713.45m is consider under positive Change of Scope and provision of toe wall and pitching on slope in all the above

S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
	3. Ch. 86+045			walls on following locations :- 1. Ch. 80+114 2. Ch. 83+262 3. Ch. 86+045	constructed on approaches of 08 nos. cattle under passes on locations as mentioned above. As per scope of the project, Concession has to construct 83.10m length in Minor Bridges proposed in the scope. Hence, remaining 713.45m additional length of retaining wall may be treated as positive Change of Scope. It is recommended to consider additional length of retaining walls i.e. approximate 713.45m under positive Change of Scope and provision of toe wall and pitching on slope in all the above three location treated as negative Change of Scope. Also reduction in shoulders width will be treated as negative Change of Scope.	three location treated as negative Change of Scope. Also reduction in shoulders width is consider as negative Change of Scope.
3	Re-laining of existing 7 mtr wide PQC in a length of 7000 mtr with both side 4 mtr widening with flexible pavement from Ch. Chainage 52+600 to 53+300 = 0.7 Km length in Tendukheda town.	-	Re-construction to four lanes with flexible pavement from Km. 52+600 to 53+300 = 0.7 Km in Tendukheda town.	Retaining with 40mm BC overlay of existing 7 mtr wide PQC in a length of 700 mtr with both side 4 mtr widening with flexible pavement from chainage 52+600 to 53+300 = 0.7 Km length in Tendukheda town.	Agree with the justification of the Concessionaire that, the condition of existing rigid pavement (7.0m wide) was satisfactory and to be retained with bituminous overlay by 40mm BC with both side 4.0 mtr widening with flexible pavement. Therefore the reconstruction to four laning with flexible pavement from Km. 52+600 to 53+300 = 0.7 Km in Tendukheda town shall be treated as negative COS and the overlay with 40 mm BC over 7.0 mtr. wide retained PQC both side 4 mtr widening with flexible	Agree with the recommendation of the IE that, the reconstruction to four laning with flexible pavement from Km. 52+600 to 53+300 = 0.7 Km in Tendukheda town shall be treated as negative COS and the overlay with 40 mm BC over 7.0 mtr. wide retained PQC, both side 4 mtr widening with flexible pavement shall be treated as postive COS.

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
					pavement shall be treated as positive COS.	
4	*Deleting of 14 nos. Pipe Culverts as below :-*					
1.	Ch. 44/1		New Construction with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS
2.	Ch. 47/2	HPCD 1X1000 formation width 10 mtr.	Widening with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, the existing CD not found on spot. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
3.	Ch. 50/2	-	New Construction with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
4.	Ch. 51/6a	HPCD 1X900mm	Reconstruction with 2X1200 mm pipe to 12 mtr formation width	Deletion	Agree with the justification of the Concessionaire that, the existing CD not found on spot. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
5.	Ch. 55/10	HPCD 1X1000mm	Reconstruction with 1X1200 mm pipe in 4 Lane portion	Deletion	Agree with the justification of the Concessionaire that, the existing CD has been blocked and buried by the residents and is non-functional and is redundant. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
6.	Ch. 68/7		New Construction with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.

S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
7.	Ch. 78/9	HPCD 1X900mm	Reconstruction with 1X1200 mm pipe to 12 mtr formation width	Deletion	Agree with the justification of the Concessionaire that, the existing CD not found on spot. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
8.	Ch. 83/3	-	New Construction with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
9.	Ch. 88/8	HPCD 1X900mm	Reconstruction with 1X1200 mm pipe to 12 mtr formation width	Deletion	Agree with the justification of the Concessionaire that, the existing CD not found on spot. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
10.	Ch. 92/6	HPCD 1X1000mm	Reconstruction with 1X1200 mm pipe to 12 mtr formation width	Retaining of existing HPCD 1X1000 with 8 mtr formation width in Nauradehi WLS.	Agree with the justification of the Concessionaire that, the condition of the existing HPCD with 1X1000 mm with 8 mtr formation width is satisfactory and can be retained for single lane road in Nauradehi WLS. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
11.	Ch. 113/8	-	New Construction with 1X1200 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
12.	Ch.113/4	-	New Construction with 1X1000 HPCD to 12 mtr. formation width.	Deletion	Agree with the justification of the Concessionaire that, as per topography the CD is not required. This shall be treated as negative COS.	Agree with the recommendation of the IE that, this shall be treated as negative COS.

5. *New construction of Pipe culverts at following locations:-*

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
1.	Ch. 52+605	No provision	No Provision	Reconstruction with 1X1200 mm pipe to 18 mtr formation width as a 1X900 mm dia HPCD actually found at site.	Agree with the justification of the Concessionaire that, a 1X900 mm dia HPCD actually found at site in dilapidated condition, but is required as per topography. Therefore, reconstruction with 1X1200 mm in 18 mtr formation width is required. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
2.	Ch. 55+540	No provision	No Provision	New construction with 1X1200 mm pipe to 24 mtr skew formation width	Agree with the justification of the Concessionaire that, a 1X1200 mm dia HPCD is essential as per requirement of junction/ topography in 24 mtr skew formation width. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
3.	Ch. 56+020	No provision	No Provision	New construction with 1X1200 mm pipe to 12 mtr formation width	Agree with the justification of the Concessionaire that, a 1X1200 mm dia HPCD is essential as per requirement of topography in 12 mtr formation width. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
4.	Ch. 58+990	No provision	No Provision	Reconstruction with 1X1200 mm pipe to 12 mtr formation width as a 1X1.00 m Slab CD actually found at site.	Agree with the justification of the Concessionaire that, as a 1X1.00 m Slab CD actually found at site in dilapidated condition, but is required as per topography. Therefore, reconstruction with 1X1200 mm in 12 mtr formation width is required. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
5.	Ch. 59+640	No provision	No Provision	Reconstruction with 1X1200 mm pipe to	Agree with the justification of the Concessionaire that, a 1X600 mm dia HPCD actually found at site in	Agree with the recommendation of the IE that, this shall be treated

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
				12 mtr formation width as a 1X600 mm dia HPCD actually found at site.	dilapidated condition, but is required as per topography. Therefore, reconstruction with 1X1200 mm in 12 mtr formation width is required. This shall be treated as positive COS.	as positive COS.
6.	Ch. 63+420	No provision	No Provision 1	Reconstruction with 1X1200 mm pipe to 12 mtr formation width as a 1X600 mm dia HPCD actually found at site.	Agree with the justification of the Concessionaire that, a 1X600 mm dia HPCD actually found at site in dilapidated condition, but is required as per topography. Therefore, reconstruction with 1X1200 mm in 12 mtr formation width is required. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
7.	Ch. 64+000	No provision	No Provision	New construction with 1X1000 mm pipe to 12 mtr formation width	Agree with the justification of the Concessionaire that, a 1X1000 mm dia HPCD is essential as per requirement of topography in 12 mtr formation width. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
8.	Ch. 75+490	No provision	No Provision	Reconstruction with 1X1200 mm pipe to 12 mtr formation width as a 1X600 mm dia HPCD actually found at site.	Agree with the justification of the Concessionaire that, a 1X600 mm dia HPCD actually found at site in dilapidated condition, but is required as per topography. Therefore, reconstruction with 1X1200 mm in 12 mtr formation width is required. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
9.	Ch. 88+290	No provision	No Provision	New construction with 2X1000 mm pipe to 7.6 mtr formation width in Nauradehi WLS	Agree with the justification of the Concessionaire that, a 1X1000 mm dia HPCD is essential as per requirement of topography in 7.6 mtr formation width in Nauradehi	Agree with the recommendation of the IE that, this shall be treated as positive COS.

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S. No	Particulars of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
					WLS. This shall be treated as positive COS.	
10.	Ch. 88+780	No provision	No Provision	New construction with 1X1000 mm pipe to 7.6 mtr formation width in Nauradehi WLS	Agree with the justification of the Concessionaire that, a 1X1000 mm dia HPCD is essential as per requirement of topography in 7.6 mtr formation width in Nauradehi WLS. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
11.	Ch. 97+000	No provision	No Provision	New construction with 1X1000 mm pipe to 7.6 mtr formation width in Nauradehi WLS	Agree with the justification of the Concessionaire that, a 1X1000 mm dia HPCD is essential as per requirement of topography in 7.6 mtr formation width in Nauradehi WLS. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
12.	Ch. 98+260	No provision	No Provision	New construction with 1X200 mm pipe to 7.6 mtr formation width in Nauradehi WLS	Agree with the justification of the Concessionaire that, a 1X1200 mm dia HPCD is essential as per requirement of topography in 7.6 mtr formation width in Nauradehi WLS. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.
13.	Ch. 103+330	No provision	No Provision	New construction with 1X1000 mm pipe to 12 mtr formation width.	Agree with the justification of the Concessionaire that, a 1X1000 mm dia HPCD is essential as per requirement of topography in 12 mtr formation width. This shall be treated as positive COS.	Agree with the recommendation of the IE that, this shall be treated as positive COS.

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S. No	Particular of Item.	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
6	*Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) at in Nauradehi Sanctuary area.*					
	1. 78+560	-	New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
	2. 35+000	-	New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
	3. 86+020	-	New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
	4. 88+658	-	New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.

S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
5.	90+020		New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
6.	91+700		New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
7	92+200		New construction of Pipe Culvert (1X1000) with 12m formation width.	Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD (1X1000) in Nauradehi Sanctuary area.	Agree with the reason that Construction of HPC (1x1000mm) with 7.60m formation width in Nauradehi Sanctuary due to restricted ROW. Hence, reduction in formation width from 12.0m to 7.6m is recommended as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
7	*Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD in Nauradehi Sanctuary area.* (2X1000mm HPC)					
1.	79+560		New construction of Pipe Culvert (2X1000) with 12m formation width.	New construction of Pipe Culvert (2X1000) with reduced formation width of 7.6 mtrs.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi W.S. Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.

S. No	Particular of Item.	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
2.	83+950		New construction of Pipe Culvert (2X1000) with 19m formation width.	New construction of Pipe Culvert (2X1000) with reduced formation width of 7.6 mtrs.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
3.	92+068		New construction of Pipe Culvert (2X1000) with 19m formation width.	New construction of Pipe Culvert (2X1000) with reduced formation width of 7.6 mtrs.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
8	*Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD in Nauradehi Sanctuary area.*					
1.	77+723	Existing Pipe Culvert of 2X1000 at Km 78/6.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
2.	79+410	Existing Pipe Culvert of 1X900 at Km 78/6.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
3.	80+163	Existing Pipe Culvert of 2X900 at Km 81/2.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from	Agree with the recommendation of the IE that, this shall be treated as negative COS.

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
				instead of 12m due to restriction.	12.0m to 7.6m shall be treated as negative variation under change of scope.	
1.	86+102	Existing Pipe Culvert of 1X900 at Km 86/8.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
5.	93+892	Existing Pipe Culvert of 1X900 at Km 93/8.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
6.	95+882	Existing Pipe Culvert of 1X900 at Km 95/2.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS
7.	94+140	Existing Pipe Culvert of 1X900 at Km 95/10.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to restriction.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
8.	96+142	Existing Pipe Culvert of 1X900 at Km 96/4.	Reconstruction of Pipe Culvert (1X1200) with 12m formation width.	Reconstruction of Pipe Culvert (1X1200) with 7.6m formation width instead of 12m due to	Agree with the justification that the formation width is restricted to 7.6 mtr. in nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as	Agree with the recommendation of the IE that, this shall be treated as negative COS.

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason/Recommendation of the IE	Decision of the Committee
				restriction	negative variation under change of scope.	
9	*Reduction in formation width from 12 mtr. to 7.6 mtr in HPCD in Nauradehi Sanctuary area.*					
	1. 1. 31+365		New construction of Pipe Culvert (2X1200) with 12m formation width.	New construction of Pipe Culvert (2X1200) with formation width of 7.6 mtrs	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
	2. 2. 95+328	Existing TCW at Km 96/III	Reconstruction of Pipe Culvert (2X1200) with 12m formation width.	Reconstruction of Pipe Culvert (2X1200) with formation width of 7.6 mtrs.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
10	Construction of Cattle Underpass (CUP) of (1x10mx4m) with 7.6 mtr. formation width at Ch. 80+014 in Nauradehi Sanctuary area in place of Minor Bridge (1x8.0.0m).	-	New construction of Minor Bridge (1X8.0 mtr.) height 3.0 mtrs at Ch. 80+000 with 12.0m formation width.	Construction of CUP (1x10mx4m) with 7.6m formation width at Ch. 80+014 within Nauradehi WLS.	Agree with the justification that the formation width is restricted to 7.6 mtr. and increase in height from 3.0 mtr. to 4.0 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 3.0 mtr to 4.0 mtr shall be treated as positive COS.	Agree with the recommendation of the IE that, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 3.0 mtr to 4.0 mtr shall be treated as positive COS.
11	Construction of Cattle Underpass (CUP) of (2x10mx6m) with 7.6 mtr.	-	New construction of Minor Bridge (2X10.0 mtr.)	Construction of CUP (1x10mx4m) with 7.6m formation	Agree with the justification that the formation width is restricted to 7.6 mtr. and increase in height from	Agree with the recommendation of the IE that, reduction in

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S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule -B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
	formation width at Ch. 81+265 in Nauradehi Sanctuary area in place of Minor Bridge (2x10.0m)		height 2.0 mtr at Ch. 81+180 with formation width of 12 mtrs.	width at Ch. 81+180 within Nauradehi WLS.	2.0 mtr. to 4.0 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 2.0 mtr to 4.0 mtr shall be treated as positive COS.	formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 2.0 mtr to 4.0 mtr shall be treated as positive COS.
12	Construction of Cattle Underpass (CUP) of (1x10mx4m) with 7.6 mtr. formation width at Ch. 86+050 in Nauradehi Sanctuary area in place of Slab culvert (1x4.0m).	HPC (2x1000) at km 86/10	Reconstruction of Slab Culvert (1X4.0 mtr.) height 2 mtr at Ch. 85+950 with formation width of 12 mtrs.	Construction of CUP (1x10mx4m) with 7.6m formation width at Ch. 85+950 within Nauradehi WLS.	Agree with the justification that the formation width is restricted to 7.6 mtr. and increase in height from 2.0 mtr. to 4.0 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 2.0 mtr to 4.0 mtr shall be treated as positive COS.	Agree with the recommendation of the IE that, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 2.0 mtr to 4.0 mtr shall be treated as positive COS.
13	Construction of Cattle Underpass (CUP) of (1X8mX4m) with 7.6 mtr. formation width at Ch. 96+107 in Nauradehi Sanctuary area in place of Minor Bridge (1x8.0m).	TCW at Km 97/8	Re-construction of Minor Bridge (1X8.0 mtr.) height 3.6 mtr with formation width of 12 mtrs.	Construction of Cattle Underpass (CUP) of (1X8 mX4.0m) with 7.6 mtr. formation width in Nauradehi Sanctuary area.	Agree with the justification that the formation width is restricted to 7.6 mtr. and increase in height from 3.6 mtr. to 4.0 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 3.6 mtr to 4.0 mtr shall be treated as positive COS.	Agree with the recommendation of the IE that, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under COS with increase in height from 3.6 mtr to 4.0 mtr shall be treated as positive COS.

S. No	Particular of Item	Provisions as per Schedule - A	Provisions as per Schedule - B	As proposed by the Concessionaire	Reason /Recommendation of the IE	Decision of the Committee
14	Reduction in formation width from 12m to 7.6m in box culvert (1X4.0m) at Ch. 80+370 in Nauradehi Sanctuary area.	Slab Culvert (1X1) at Km 81/3	Re-construction of slab Culvert (1X4.0) at Ch. 80+300 with formation width of 12 mtrs.	Reduction in formation width from 12 mtr. to 7.6 mtr in Box Culvert (1X4) at Ch. 80+370 in Nauradehi Sanctuary area.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
15	Reduction in formation width from 12m to 7.6m in box culvert (1X3.5m) at Ch. 83+070 in Nauradehi Sanctuary area.	Slab Culvert (1X1) at Km 83/10	Re-construction of slab Culvert (1X3.50) at Ch. 82+900 with formation width of 12 mtrs	Reduction in formation width from 12 mtr. to 7.6 mtr in Box Culvert (1X3.5) at Ch. 83+070 in Nauradehi Sanctuary area.	Agree with the justification that the formation width is restricted to 7.6 mtr. in Nauradehi WLS Hence, reduction in formation width from 12.0m to 7.6m shall be treated as negative variation under change of scope.	Agree with the recommendation of the IE that, this shall be treated as negative COS.
16	Widening of MNB at ch. 108+400	MNB 2X8m RCC Slab (8.4 mtr. Wide) at Km 108/10	Retained 108+020, Width-8.40m	Widening of MNB 2X8 mtr. RCC slab at ch. 108+400 from 8.4 mtr to 12 mtr. width	Agree with the justification that the formation width of the road is 12 mtr, therefore, it was essential to increase the width of the existing 2X8 mtr RCC slab bridge to 12 mtr to match with the formation width of road. Therefore, widening of MNB 2X8 mtr RCC slab from 8.4m to 12m-shall be treated as positive change of scope.	Agree with the recommendation of the IE that, this shall be treated as positive COS.

Authorised Signatory
M/S DBL Patan Rehli
Toll Ways Ltd.

Team Leader
Independent Engineer

General Manager (BOT)
MPRDC, Bhopal

Chief Engineer (BOT),
MPRDC, Bhopal

Technical Advisor
MPRDC, Bhopal

Engineer-in-Chief
MPRDC, Bhopal

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Print

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Subject:	Patan Tendukheda Rehli Project: MPRDC letter no. 9696 Minutes of meeting of Advisory Committee
From:	DILIP BUILDCON LTD (db@dilipbuildcon.co.in)
To:	arunk@dbl.co.in;
Cc:	manishmehta@dbl.co.in; maintenance@dbl.co.in; nitesh@dilipbuildcon.co.in;
Date:	Saturday, 9 September 2017 2:44 PM

Dear Sir,

Please find attached herewith MPRDC letter no. 9696 Minutes of meeting of Advisory Committee. This is for your information and necessary action please.

With Regards,

Dilip Buildcon Limited,
CIN: L45201MP2006PLC018689,
Regd. Office: Plot No. 5,
Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal - 462 016 (M.P.),
Ph.:0755-4029999,
Fax: 0755-4029998,
Corporate Email: db@dilipbuildcon.co.in
Website: www.dilipbuildcon.co.in

Attachments

- 9696 Minutes of meeting of Advisory Commitee.pdf (739.24 KB)

https://mg.mail.yahoo.com/neo/launch?.rand=43p30rdd0916t 09-Sep-17

Annexure 11: Project Photos

SHREM FINANCIAL PRIVATE LIMITED

Development of Tikamgarh (Dhajrai) – Jatara – Palera - Nowgaon Major District Road in the State of Maharastra on BOT (Toll+Annuity) Basis.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Tikamgarh (Dhajrai) – Jatara – Palera - Nowgaon Major District Road in the State of Maharastra on BOT (Toll+Annuity) Basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Tikamgarh-Nowgaon	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
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This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL TIKAMGARH-NOWGAON TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL TIKAMGARH-NOWGAON TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing road from Y-Junction "Tikamgarh - Malchara" section of SH-10 and Tikamgarh - Nowgaon (NH-76) in the State of Madhya Pradesh, in accordance with the provisions of the Concession Agreement executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on 12th November, 2013 on Design, Build, Finance, Operate and Transfer (DBFOT) on Toll plus Annuity Basis.

Project Road starts at Y-Junction at Km.10+800 at Tikamgarh - Malehra road (SH-10) and ends in Km. 107+000 of Jhansi - Nowgaon (NH-76) road. Design length of road is 76.400 Kms.

SHREM ROADWAYS PRIVATE LIMITED acquired DBL TIKAMGARH NOWGAON TOLLWAYS LIMITED vide agreement dated 26.03.2018

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for Detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

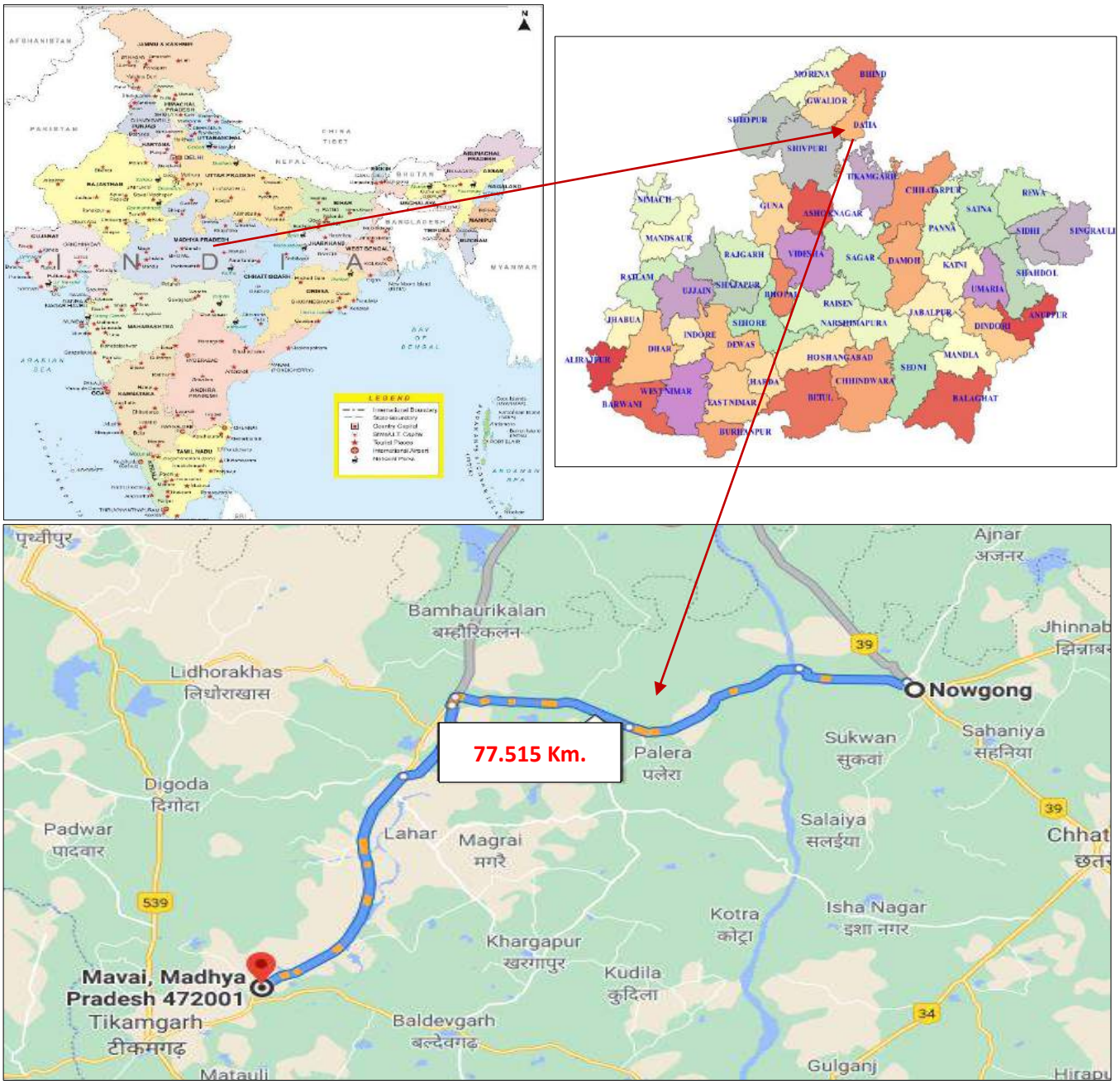

Figure 1.1: Project Location Map

1.2 Project Data:

The details of the Project are listed in the following Table 1.1.

Table 1.1: Project Data.

S. No.	Particulars	Details
1	Name of the project	Development of Tikamgarh (Dhajrai) – Jatara – Palera - Nowgaon MDR from Y-Junction at Tikamgarh to Jhansi Nowgaon on Build, Operate and Transfer (BOT) on Toll + Annuity Basis.
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Tikamgarh-Nowgaon Tollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Design Length as per Schedule B of CA	76.400 Kms.
7	Date of LOA	27.09.2013
8	Date of Agreement	12.11.2013
9	EPC Cost	116.53 Cr
10	Nature of contract	DBFOT (Toll + Annuity)
11	Toll collected by	MPRDCL
12	Concession Period	15 years from the Appointed date
13	Appointed date	08.08.2014
14	Concession end date	07.08.2029
15	Construction Period	730 days from the Appointed date
16	Schedule Completion Date	06.08.2016
17	Date of issuance of Provisional Certificate (Commercial Operation Date)	26.05.2015
18	Date of issuance of Completion Certificate	13.08.2015
19	Annuity Amount (every six months)	Rs 8.91 Cr
20	Total Number of Annuities payable	26 Nos.
21	First Annuity Payment Date	26.11.2015
22	Total Number of Annuity Paid	11 Nos.

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the Consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are given in the following **Table 2.1.**

Table 2.1: Salient Features

S. No.	Particulars	As per Schedule B of CA	COS	As per Site
1	Total Length	76.400 Kms.	1.115 Kms.	77.515 Kms.
2	Length of 2-Lane with Granular shoulder	63.000 Kms.	1.115 Kms.	64.115 Kms.
3	Length of 2-Lane with paved shoulder	10.000 Kms.	---	10.000 Kms.
4	Length of 4-Lane road	3.400 Kms.	---	3.400 Kms.
5	Length of Jatara Bypass	8.400 Kms.	---	8.400 Kms.
6	Toll Plaza	2 Nos.	---	2 Nos.
7	Bus Shelters	8 Nos.	---	8 No
8	Truck Lay Bays	Nil	---	Nil
9	Major Junction	6 Nos.	---	6 Nos.
10	Minor Junctions	14 Nos.	---	14 Nos.
11	Major Bridges	2 Nos.	+1	3 Nos.
12	Minor Bridges	9 Nos.	(+4,-1) Nos.	12 Nos.
13	Box/Slab Culverts	34 Nos.	(+17,-6) Nos.	36* Nos.
14	Pipe Culverts	55 Nos.		60* Nos.

*As per site condition, 9 Slab culverts are not constructed and 5 additional Hume Pipe Culverts are constructed as per requirement.

2.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the Typical Cross Section shown below as per Schedule during the Construction.

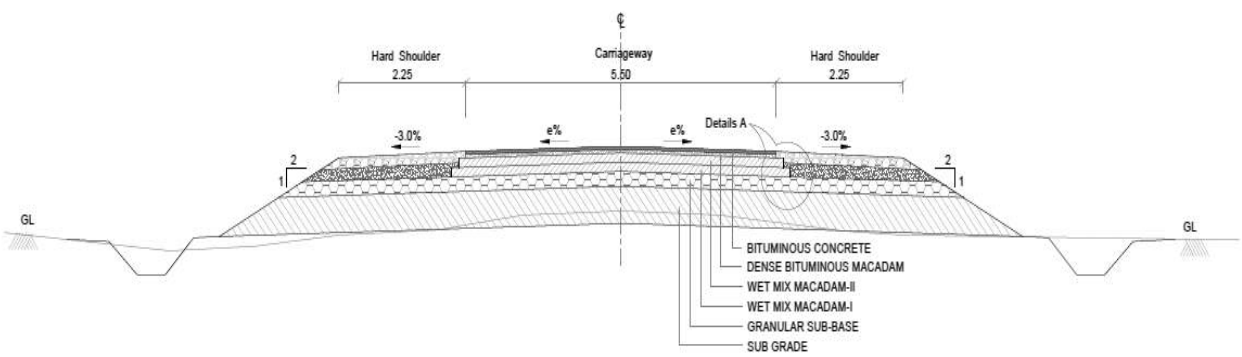

Figure 2.1: (TCS 2.1) Two Lane with Granular Shoulder.
(Cross Section in Open Areas & Rural Areas)

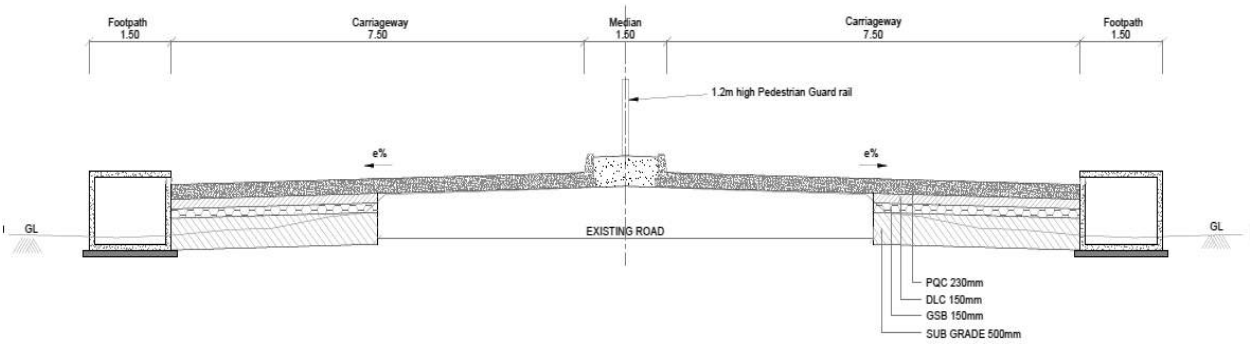

Figure 2.2: (TCS 2.2) Widening to 4 Lane divided Carriageway with footpath Built up area

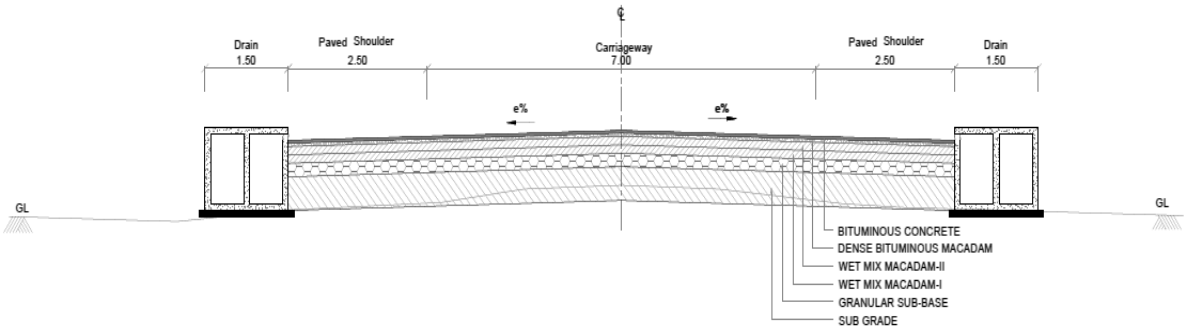

Figure 2.3: (TCS 2.3) Two Lane Carriageway (7.0 m) with Paved shoulder (In Built up Areas)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)	Type of TCS
1	0+000	0+400	0.400	TCS.2.3
2	0+400	2+420	2.020	TCS.2.1
3	2+420	5+020	2.600	TCS.2.3
4	5+020	9+700	4.680	TCS.2.1
5	9+700	10+720	1.020	TCS.2.3
6	10+720	17+700	6.980	TCS.2.1
7	17+700	18+700	1.000	TCS.2.3
8	18+700	38+420	19.720	TCS.2.1
9	38+420	40+420	2.000	TCS.2.3
10	40+420	52+500	12.080	TCS.2.1
11	52+500	55+900	3.400	TCS.2.2
12	55+900	63+240	7.340	TCS.2.1
13	63+240	64+240	1.000	TCS.2.3
14	64+240	68+240	4.000	TCS.2.1
15	68+240	69+240	1.000	TCS.2.3
16	69+240	76+560	7.320	TCS.2.1
17	76+560	77+515	0.955	TCS.2.3

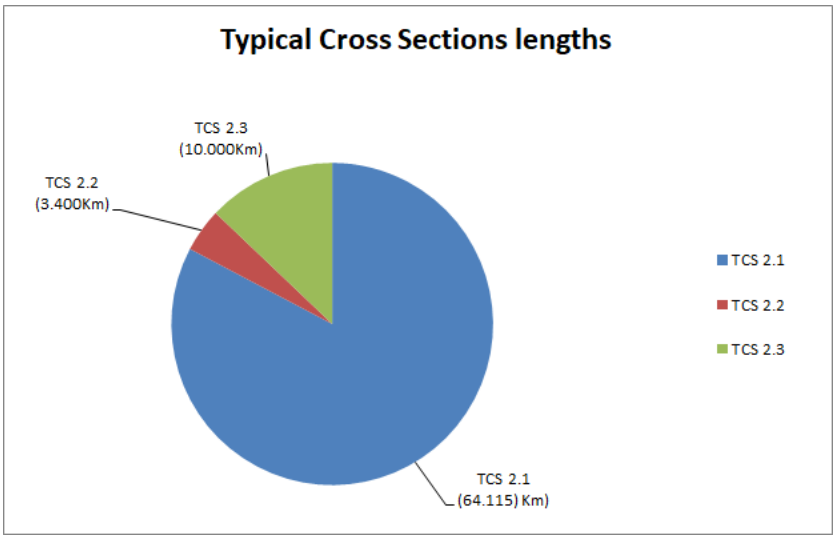

Figure 2.4: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the carriage way and to avoid accumulation of drainage. Side drains are constructed along the main carriage way on both flanks as specified in Schedule B of the Concession Agreement in strict adherence to the Standard Specifications set forth in Schedule D of the Concession Agreement

- Accordingly, Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains in open and rural areas.

Service Roads:

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment:

Bypass constructed from Km. 38+400 to Km. 46+800 of length 8.400 Kms. as per Provisions of Concession agreement Schedule B of Concession Agreement.

Intersections:

As per Schedule B of the Concession Agreement 6 Major Junctions and 14 Minor Junctions are developed. Details are given below.

Table 2.3: Summary of Junctions

S. No.	Chainage (Km.)	Side	Type of Junction	Junction category
1	1+200	RHS	T	Major
2	5+100	LHS	Y	Minor
3	11+200	LHS	Y	Minor
4	11+200	LHS	T	Minor

S. No.	Chainage (Km.)	Side	Type of Junction	Junction category
5	12+200	LHS	T	Minor
6	13+200	LHS	Y	Minor
7	14+400	LHS	T	Minor
8	18+600	LHS	T	Minor
9	20+100	LHS	T	Major
10	20+600	RHS	T	Minor
11	22+200	LHS	T	Minor
12	22+200	RHS	T	Minor
13	28+600	LHS	T	Minor
14	29+400	RHS	Y	Minor
15	32+200	RHS	T	Minor
16	35+600	RHS	T	Major
17	37+100	LHS	T	Major
18	38+400	LHS	T	Minor
19	43+100	LHS	Y	Major
20	47+400	LHS	T	Major

2.7 Grade Separated Structures and underpasses:

Vehicular underpasses are not proposed on the Project road.

2.8 Road Over Bridge(ROB):

ROBs are not proposed in the project road.

2.9 Summary of the Carriageway Details:

Table 2.4: Summary of Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	2 Lane with Granular shoulder	64.14	---	TCS 2.1 of Schedule D of CA
2	2 Lane with Paved shoulder	9.975	---	TCS 2.3 of Schedule D of CA
3	4 Lane	---	3.4	TCS 2.2 of Schedule D of CA
4	Total Length of the Project	74.115	3.4	
5	Total Length of the Project	77.515		
6	TYPE OF ALIGNMENT			
7	New Alignment	---	---	
8	Realignment	---	---	
9	Strengthening	---	---	
10	Reconstruction	74.115	---	
11	Widening	---	3.4	
12	Total Length of the Project	74.115	3.4	
13	Total Length of the Project	77.515		

Summary of Structures and Culverts:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No.	Description	Major Bridges (Nos.)	Minor Bridges (Nos.)	Pipe Culverts (Nos.)	Box/Slab Culverts (Nos.)
1	Retained	2	3	06	8
2	Reconstruction	0	6	49	26
3	Repair and strengthening	0	0	0	0
4	New	0	0	0	0
	Total	**2**	**9**	**55**	**34**

2.10 Toll Plazas:

As per Schedule C provisions of the Concession Agreement Two Toll Plazas have been constructed at site one at Km. 12+000 and second one at Km. 75+900(Existing Chainage). Salient features of Toll Plazas are provided below.

- Each side of toll plaza comprises of 1 Normal Lane and 1 extra wide lane.
- The lane width in normal lanes is 3.200m and extra lane is 4.500m width.
- The width of islands provided is 1.800m.
- Single canopy is provided to cover the toll lanes.
- Each Toll plaza building is G+1 floor building which houses Control room, UPS, Accounts and Pantry

Km. 12+000

Km. 75+900

Figure 2.5: Representative Photographs of Toll Plazas

2.11 Bus shelters:

As per the provisions of Schedule C of the CA, 8 Nos. Bus shelters are provided. Details such as Chainage Location and Name of Village are listed in the following **Table 2.6**.

Table 2.6: List of Bus shelters

S. No.	Chainage (Km.)	Location
1	1+200	Nowgaon
2	11+100	Dhajrai Village
3	15+400	Mabai Village
4	20+600	Majna village
5	25+100	Palera Village
6	39+100	Jatara village
7	46+100	Dinau Village
8	66+100	Garroli village

2.12 Other Project Facilities Provided as per Schedule C of CA:

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic Safety Devices: Metal Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of the Concession Agreement.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and being maintained.
- Medical Aid Post: Provided at Toll Plaza locations and in operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

Km. 0+000

Km. 20+600

Km. 46+100

Km. 12+000

Figure 2.6: Representative Photographs of Project facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in **Table 3.1 .**

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain Rolling and mild hilly
2	Land Use	Built Up 18 %, Agriculture 82%
3	Four lane length	3.400 Kms. (Palera Municipal area)
4	Two Lane length	74.115 Kms.
5	Earthen shoulder	1.0 m to 1.5m Width on site
6	Bypasses	8.400 Kms.
7	Junctions	06 Nos Major Junctions, 14Nos Minor Junctions
8	Toll Plaza	Km. 12+000 and Km. 75+900
9	Sign boards	Sign boards are provided as per highway requirements
10	Road Markings	Lane markings are provided as per highway requirements
11	Bus Bays /shelters	08 nos.
12	Street Lighting	Highway lightings are provided as per highway requirements
13	Avenue plantation	Provided along the Project road

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs;

Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive - over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The Summary of field measurements of the Pavement Condition survey is tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1.**

Table 3.3: Pavement condition summary

From Chainage (Km.)	To Chainage (Km.)	Length (Kms.)	Condition
0+000	77+515	77.515	Good

Km. 0+000

Km. 12+500

Km. 23+800

Km. 48+200

Km. 62+400

End Point

Figure 3.1: Representative Photographs of Pavement Condition

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

There are 03 Nos Major Bridges, 12 Nos Minor Bridges, 60 Nos Pipe culverts and 36 Nos Slab/ Box culverts are there along this project road.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	03 Nos.
2	Minor Bridge	12 Nos.
3	Pipe culverts	60 Nos.
4	Slab/Box Culverts	36 Nos.

For Major bridges, the superstructure is of RCC solid type resting on CRM wall type piers and abutments with open foundation. For minor bridges, the superstructure is of RCC solid slab and the substructures are of CRM/PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3**.

4.3 Details of Major Bridges:

The total length of the major bridge at Km 19+513 is 64.0m with 8 spans. The superstructure consists of RCC solid slab. Both pier and abutment are of conventional CRM wall type structures resting on open foundations. Tar paper bearings are provided. Buried type Expansion joints and Mild steel railings on both sides of the deck.

The total length of the major bridge at Km 48+433 is 143.0m with 11 spans. The superstructure consists of RCC solid slab. Both pier and abutment are of conventional CRM wall type structures resting on open foundations. Tar paper bearings are provided. Buried type Expansion joints and steel railings on both sides of the deck.

The total length of the major bridge at Km 67+764 is 435.0m with 29 spans. The superstructure consists of Arch slab. Both pier and abutment are of conventional CRM wall type structures resting on open foundations. Steel railings on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km.)	Span (m.)	Total Length of Bridge (m)
1	19+513	8 x 8.0	70.400
2	48+433	11 x 13.0	143.000
3	67+764	29 x 15.0	435.000

The condition of the superstructure and substructure is good. Certain maintenance operations on quadrant pitching, reflector plates, drainage spouts, and strip seal expansion joints are to be carried out.

Km. 19+513 **Km. 19+513**

Figure 4.1: Representative photographs of Major Bridges

4.4 Details of Minor Bridges

There are 12 minor bridges in the project stretch. The type of superstructure for some minor bridges is RCC solid slab and the substructure is conventional CRM wall type supported on open foundations. Some are RCC box type bridges. Expansion joints are buried type and bearings are of tar paper and elastomeric bearings. for Solid Slab Super Structure RCC crash barriers are provided on all structures.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage @ Km.	Span (m)	Total Length of Bridge (m)	Description
1	5+255	3 x 5.0	16.400	The Minor Bridge has RCC Box structure, RCC crash barrier, bituminous wearing coat.
2	21+583	2 x.4.0	8.800	The Minor Bridge has RCC Box structure, RCC crash barrier, bituminous wearing coat.
3	23+951	2 x 4.5	10.300	The Minor Bridge has RCC Box structure, RCC crash barrier, bituminous wearing coat.
4	26+176	1 x 9.6m.	9.600	The Minor Bridge has RCC Box structure, RCC crash barrier, bituminous wearing coat.
5	30+366	3 x 6.0m.	1800	The Minor Bridge has RCC solid slab superstructure supported on CRM wall type piers and abutment. Other features are RCC parapet wall, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
6	40+251	2 x 4.0m.	9.100	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	41+219	1 x 6.0m.	6.800	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
8	47+755	3 x 7.0m.	21.000	The Minor Bridge has RCC solid slab superstructure supported on CRM wall type piers and abutment. Other features are steel railings, bituminous wearing coat, and Tar paper Bearings and buried type expansion

S. No.	Chainage @ Km.	Span (m)	Total Length of Bridge (m)	Description
				joints.
9	51+666	3 x 6.0m.	19.700	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	52+697	2 x 4.0m.	9.400	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
11	63+142	2 x 4.0m.	9.400	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
12	74+378	2 x 4.0m.	9.400	The Minor bridge has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.

Km. 23+951

Km. 40+251

Figure 4.2: Representative photographs of Minor Bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. Some of the pipe culverts need vent clearance. In general, the condition of all the structures is found satisfactory. The details of the same are given in the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. Details of the Slab/Box Culverts

There are 36 No's of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m.)	Vent Size (m.)
1	2+145	1 x 6.00	3.500
2	8+030	1 x 1.00	2.000
3	14+209	1 x 4.00	4.000
4	14+637	1 x 4.00	4.000
5	15+720	1 x 2.80	2.700
6	15+895	1 x 2.10	2.100
7	17+017	1 x 4.00	4.000
8	19+437	1 x 4.00	4.000

S. No.	Chainage (Km.)	Span (m.)	Vent Size (m.)
9	20+430	1 x 3.00	2.000
10	21+182	1 x 4.00	4.000
11	27+697	1 x 6.00	4.500
12	32+026	1 x 1.00	1.000
13	32+174	1 x 1.60	2.000
14	32+774	1 x 2.00	2.100
15	35+687	1 x 3.80	2.100
16	36+096	1 x 2.00	2.000
17	36+527	1 x 3.00	2.000
18	43+444	1 x 2.50	2.100
19	45+182	1 x 4.70	2.100
20	49+972	1 x 4.00	4.500
21	54+188	1 x 1.50	1.500
22	55+588	1 x 6.00	3.100
23	56+999	1 x 3.00	3.000
24	57+950	1 x 3.00	2.800
25	58+688	1 x 2.00	2.900
26	60+140	1 x 3.00	3.000
27	61+489	1 x 4.00	4.000
28	63+656	1 x 4.00	2.500
29	64+279	1 x 6.00	4.000
30	64+778	1 x 4.00	4.000
31	65+586	1 x 3.80	2.100
32	66+359	1 x 6.00	4.000
33	68+132	1 x 4.00	3.500
34	72+777	1 x 4.00	3.500
35	75+766	1 x 4.00	3.500
36	77+448	1 x 4.00	3.500

The general condition of above slab culverts is good. Few of the culverts need Vent clearance, as some debris/garbage was found in the vent ways. Maintenance is to be carried out to most of the culverts in the form of vent clearance and Stone Pitching for Quadrants. All these activities are to be attended, before onset of monsoon every year under O&M.

Km. 14+209

Km. 14+637

Km. 21+182

Km. 27+697

Figure 4.3: Representative photographs of Slab Culverts

4.5.2. Details of the Pipe Culverts

There are 60 No's of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	No. of Row/Dia.(m)	S. No.	Chainage (Km.)	No. of Row/Dia.(m)
1	0+784	1 x 0.9	31	31+038	2 x 0.9
2	1+297	1 x 1.2	32	32+496	1 x 1.2
3	3+211	2 x 1.2	33	33+533	1 x 1.2
4	3+279	1 x 1.2	34	36+385	1 x 1.0
5	3+444	2 x 0.9	35	36+939	1 x 1.0
6	4+173	1 x 1.2	36	39+175	1 x 1.0
7	4+542	1 x 1.2	37	39+736	1 x 1.2
8	5+610	1 x 1.2	38	39+917	1 x 1.2
9	5+810	1 x 1.2	39	42+339	1 x 1.2
10	6+069	1 x 1.2	40	42+696	1 x 1.2
11	6+937	1 x 0.9	41	43+576	2 x 0.9
12	7+367	1 x 1.2	42	45+484	1 x 1.2
13	9+440	1 x 1.2	43	46+457	1 x 1.2
14	12+107	1 x 1.2	44	47+423	1 x 1.0
15	12+711	2 x 0.9	45	48+686	1 x 1.0
16	13+093	2 x 1.2	46	53+494	1 x 1.0
17	13+757	1 x 1.2	47	53+760	1 x 1.2

S. No.	Chainage (Km.)	No. of Row/Dia.(m)	S. No.	Chainage (Km.)	No. of Row/Dia.(m)
18	14+811	1 x 1.2	48	54+458	1 x 1.2
19	16+366	2 x 1.2	49	55+914	1 x 1.2
20	17+395	1 x 1.2	50	56+068	1 x 1.2
21	19+898	2 x 0.9	51	56+350	1 x 1.0
22	22+261	1 x 1.2	52	58+381	1 x 1.0
23	22+505	1 x 1.2	53	61+768	1 x 1.2
24	23+056	1 x 1.2	54	62+061	1 x 1.2
25	24+042	1 x 1.2	55	62+802	1 x 1.2
26	24+345	1 x 1.2	56	67+356	1 x 1.2
27	25+414	1 x 1.2	57	69+221	1 x 1.2
28	29+305	1 x 1.2	58	69+516	1 x 1.2
29	29+471	1 x 1.2	59	71+754	1 x 1.2
30	30+778	1 x 1.2	60	76+886	1 x 1.2

The general condition of above pipe culverts is good. Few culverts are chocked and need clearance as some debris/garbage was found in the ventways. All these activities are to be attended, before onset of monsoon every year under O&M.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General:

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design:

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to see that no permanent deflections result in the Sub Grade, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the Top surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

5.3 Review of Pavement Design

The project road has been divided into two homogeneous sections HS-I: Km. 0+000 to Km. 37+000 and HS-II: Km. 37+000 to 76+400. As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	HS-I Parameters	HS-II Parameters
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	15 years	15 years
3	Design Traffic* (MSA)	2.44 MSA actual 10MSA Adopted	9.61 MSA actual 10MSA Adopted
4	Surface course (BC)	40 mm	40 mm
5	Binder course (DBM)	-	50 mm
6	Crack relief layer (AIL)	100 mm	100 mm
7	Base course (CTB)	190 mm	200 mm
8	Sub Base course (GSB)	250 mm	200 mm

*Actual traffic arrived at pavement design stage for HS-1 and HS-II is 2.44 MSA and 9.61 MSA respectively which is less than the specified MSA in Schedule D of CA (10MSA). Hence 10 MSA is adopted in pavement design to evaluate the crust thickness.

5.4 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Pavement design validation as per actual traffic from COD. As per IRC-37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively summary is given below.

Table 5.2: Real time traffic from COD and Project traffic and CMSA (For HS -I)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	292	46	23	33	22	124	0.12	0.12	1	Actual
2017	336	68	19	53	27	167	0.16	0.28	2	Actual
2018	417	22	30	5	58	115	0.11	0.39	3	Actual
2019	707	60	41	10	60	171	0.16	0.55	4	Actual
2020	619	85	43	17	41	186	0.18	0.73	5	Actual
2021	650	89	45	18	43	195	0.19	0.92	6	Projected
2022	683	94	47	19	45	205	0.20	1.11	7	Projected
2023	717	98	50	20	47	215	0.21	1.32	8	Projected
2024	753	103	52	21	50	226	0.22	1.54	9	Projected
2025	790	108	55	22	52	237	0.23	1.76	10	Projected
2026	830	114	58	23	55	249	0.24	2.00	11	Projected
2027	871	119	60	24	57	261	0.25	2.25	12	Projected
2028	915	125	63	25	60	274	0.26	2.51	13	Projected
2029	960	132	67	27	63	288	0.28	2.79	14	Projected
2030	1008	138	70	28	66	303	0.29	3.08	15	Projected

Table 5.3: Real time traffic from COD and Project traffic and CMSA (For HS-II)

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	182	78	7	7	19	111	0.11	0.11	1	Actual
2017	293	128	8	10	57	203	0.19	0.30	2	Actual
2018	384	132	9	11	103	256	0.25	0.55	3	Actual
2019	429	134	12	10	78	234	0.22	0.77	4	Actual
2020	468	141	14	10	42	206	0.20	0.97	5	Actual
2021	491	148	14	10	44	216	0.21	1.17	6	Projected
2022	516	155	15	11	46	227	0.22	1.39	7	Projected
2023	541	163	16	11	48	238	0.23	1.62	8	Projected
2024	569	171	17	12	51	250	0.24	1.86	9	Projected
2025	597	180	17	12	53	262	0.25	2.11	10	Projected
2026	627	189	18	13	56	276	0.26	2.37	11	Projected
2027	658	198	19	14	59	289	0.28	2.65	12	Projected
2028	691	208	20	14	62	304	0.29	2.94	13	Projected
2029	726	218	21	15	65	319	0.31	3.25	14	Projected
2030	762	229	22	16	68	335	0.32	3.57	15	Projected

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 1.32, 3.08 of TP1 respectively. Similarly estimated MSA at 8 years and 15 years of TP2 are 1.62 ,3.57 respectively. Traffic considered in pavement design(10MSA) is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

Pavement crust thickness considered in the pavement design report for rigid pavement is as follows: -

Table 5.4: Rigid Pavement Design for Toll Plaza

Description	HS-I Parameters	HS-II Parameters
CBR of sub grade	10 %	10%
Design life in years	30	30
Pavement Quality Concrete (PQC) - mm	230	260
Dry Lean Concrete (DLC) - mm	100	100
Drainage Layer (GSB) - (mm)	150	150
Diameter of Dowel Bar (mm)	32	32
Length of Dowel Bar (mm)	450	450
Spacing of Dowel Bars (mm)	240	230
Diameter of Tie Bar (mm)	10 (Deformed)	10 (Deformed)
Length of Tie Bar (mm)	640	555
Spacing of Tie Bars (mm)	540	475

5.5 Overlay during operation and maintenance:

The pavement has been designed to cater traffic 10 MSA for entire project road (up to 2030), whereas the actual traffic is 5 MSA and 10 MSA for HS-I and HS-II respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

Based on the present available data It is envisaged that existing pavement require overlay (periodic renewal) in the year of 2022 and 2029, strengthening for the concession period. Nevertheless, the pavement shall be maintained to the desired level of performance by carrying out periodical renewals as mentioned in subsequent sections.

5.6 Maintenance/ Overlay schedule:

Periodic Maintance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement - Proposed in the year 2022 and 2030.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done once in 10 years from construction.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: REFERRED IRC PUBLICATIONS

IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit.

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following **Table** 6.2.

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good
		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Studs & Lane Marking	Available as per site requirement	Fair
3	W Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide a safety and thorough fare for the road users by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places' reflectors were missing on the sign boards and few sig boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly
- Speed mitigation measures shall be provided at junction to reduce the speed, and adequate visibility shall be maintained at junctions in part of routine maintenance.
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

W Beam MCB at approaches of MJB at Km. 28+200

Road safety at Box Culvert at Km. 24+637

Curve Ahead sign board at Km. 48+000

Pedestrian Markings at Km. 48+200

Figure 6.1: Representative photographs during road safety audit

6.3 Conclusion

Safety arrangements done for road users along the project road are found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There are two toll Plazas on the project road at Km. 12+000 (Toll Plaza 1) & Km. 75+900 (Toll Plaza 2). Toll Plaza 1 at Km. 12+000 comprises of 4 lanes. One lane in each direction is for 4-wheelers and the second lane is used as bike lane. Toll Plaza 2 at Km. 75+900 also comprises of lane configuration similar to Toll Plaza 1. The lane width in both the plazas is 3.20m. The width of islands provided is 1.8m. The single canopy is provided to cover the toll lanes.

Both the Toll plazas are provided with G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment's

List of equipment provided at toll plaza and control room is given below.

Table 7.1: Toll Plaza Assets

S. No.	Name	Qty.
1	Smart Card reader (TMS & HTMS)	2
2	Incidental Capture Camera (TMS & HTMS)	7
3	Barrier Controller PCB	1
4	Receiver PCB (AVC's RXPCB)	6
5	Manual Booth Controller	2
6	USB Extension Cable	16
7	RFID ETC Transceiver with accessories	4
8	Electronics Enclosure (TMS & HTMS)	4
9	Lane laser based AVC Profiler (TMS)	2
10	Lane AVC Controller	4
11	Operator monitor 18.8" (TMS & HTMS)	2
12	Manual Booth controller (TMS & HTMS)	4
13	PTZ CAMERA (TMS & HTMS)	1
14	IMAGE CAPTURE CAMERA	2
15	MLS MAGNETIC LOOP SENSOR	8
16	INTERCOM SLAVE UNIT (TMS & HTMS)	4
17	USER FARE DISPLAY (TMS & HTMS)	4
18	CUSTOMIZED KEYBOARD (TMS & HTMS)	4
19	HYBRID LANE SOFTWARE	4
20	CABLING/NETWORKING FOR LANE (TMS & HTMS)	4
21	HANDHELD RFID READER (TMS & HTMS)	2
22	PLAZA SERVER FOR ETC - TMS & HTMS	1
23	INTERCOM MASTER UNIT 10 CHANNEL	1
24	PLAZA SOFTWARE (TMS & HTMS)	1
25	LANE EXIT BARRIER WITH LOOPS & DETECTOR	2

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2: List of Vehicles

S. No.	Vehicle Type	Nos.
1	Patrol Vehicle	1 No
2	Ambulance	1 No.

Toll Plaza and Building at Km. 12+000

Toll Plaza at Km. 75+900

Figure 7.1: Representative Photographs of Toll Plaza

CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in **Table 8.1** below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

Table 8.1: Year wise Traffic (Vehicles) Details

(A) Mawai toll plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr 2015-Mar 2016	90452	14331	7193	10111	6769	128856
Apr 2016-Mar 2017	122807	24981	6880	19202	9734	183604
Apr 2017-Mar 2018	152135	8051	11128	1659	21161	194134
Apr 2018-Mar 2019	257990	21896	15049	3624	21791	320350
Apr 2019-Mar 2020	226594	31063	15728	6268	14918	294571
AACGR* (%)						**26.30%**

(B) Bela toll plaza

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
Apr 2015-Mar 2016	56399	24322	2049	2101	5843	90714
Apr 2016-Mar 2017	107040	46721	2796	3664	20917	181138
Apr 2017-Mar 2018	140166	48287	3175	4174	37716	233518
Apr 2018-Mar 2019	156628	48822	4435	3692	28604	242181
Apr 2019-Mar 2020	171191	51489	5005	3525	15247	246457
AACGR* (%)						**33.52%**

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as **Table 8.2**.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

(A) Mawai toll plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	100471	1997	27055	14683	4763	12727	161696
Toll Revenue collection in Rs.	4521195	159755	2924455	3310400	1290945	6864275	19071025

(B) Bela toll plaza

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	108940	2213	44976	3975	3169	14152	177425
Toll Revenue collection in Rs.	4902300	177035	4850760	897820	858595	7640225	19326735

The Table 8.1 represent Real time traffic data inclusive of exempted /non tollable traffic on project road for the past five years and the growth rate is calculated to be 26.30% and 33.52% in TP-1 and TP-2 respectively.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (Table 8.2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5% even though the growth as per Table 8.1 is >5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

(A) Mawai toll plaza

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	281	74	40	13	35	162	281	111	121	39	157	428	Actual
2021	295	78	42	14	37	170	295	117	127	41	165	449	Projected
2022	310	82	44	14	38	179	310	123	133	43	173	472	Projected
2023	325	86	47	15	40	188	325	129	140	45	182	495	Projected
2024	341	90	49	16	42	197	341	135	147	48	191	520	Projected
2025	358	95	51	17	45	207	358	142	154	50	200	546	Projected
2026	376	99	54	17	47	217	376	149	162	52	210	573	Projected
2027	395	104	57	18	49	228	395	156	170	55	221	602	Projected
2028	415	110	59	19	52	240	415	164	178	58	232	632	Projected
2029	436	115	62	20	54	252	436	172	187	61	243	664	Projected
2030	457	121	66	21	57	264	457	181	197	64	256	697	Projected

(B) Bela toll plaza

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	305	123	11	9	39	182	305	185	33	26	174	418	Actual
2021	320	129	11	9	41	191	320	194	34	27	183	439	Projected
2022	336	136	12	10	43	200	336	204	36	29	192	461	Projected
2023	353	143	13	10	45	210	353	214	38	30	202	484	Projected
2024	370	150	13	11	47	221	370	225	40	32	212	508	Projected
2025	389	157	14	11	49	232	389	236	42	33	223	534	Projected
2026	408	165	15	12	52	243	408	248	44	35	234	560	Projected
2027	429	173	15	12	55	255	429	260	46	37	246	588	Projected
2028	450	182	16	13	57	268	450	273	48	38	258	618	Projected
2029	472	191	17	13	60	282	472	287	51	40	271	648	Projected
2030	496	201	18	14	63	296	496	301	53	42	284	681	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in **Table 8.4**.

Table 8.4: Toll Revenue inputs

Particular	Toll plaza 1	Toll plaza 2
Location	Km. 12+000	Km. 75+900
4 lane length in Kms.	0	0
2 lane length in Kms.	76.400	76.400
Agreement Date	12-11-2013	12-11-2013
Appointed Date	08-08-2014	08-08-2014
Concession period	15	15
Commercial operation date	13-Aug-15	13-Aug-15
Concession End Date	07-Aug-29	07-Aug-29
Traffic study year	2020	2020
Vehicle Type	**AADT**	**AADT**
Car/Jeep/Van	281	305
2-axle Bus	74	123
LCV/LGV	40	11
2A-Truck	13	9
MAV (2A-6A)	35	39
Growth Rate (%)	5%	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP1 Km. 12+000	Annual Revenue of TP2 Km. 75+900	Total	Remarks
2019-20	190.710	193.267	383.978	Actual
2020-21	205.272	209.819	415.091	Projected
2021-22	228.466	233.470	461.936	Projected
2022-23	246.757	251.737	498.494	Projected
2023-24	265.413	271.682	537.095	Projected
2024-25	292.539	297.630	590.169	Projected
2025-26	315.965	320.411	636.376	Projected
2026-27	347.039	352.235	699.274	Projected
2027-28	371.509	379.304	750.814	Projected
2028-29	399.132	407.414	806.546	Projected
2029-30	154.366	157.747	312.113	129 Days

Note: There are two toll plazas existing on the project road. One booth of the toll plaza in each direction is used for Toll Ticket issue & Checking as well.

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

Visual Inspection: Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

Detailed Inspection: Detailed Inspections often (require some measuring instruments) are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

Thorough Inspection: Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to beginning of each accounting year during the operation period.

9.3 Operations:

Traffic Flow Operation & Traffic Management Plan:

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3. carrying out preventive and periodic maintenance of the Project road;
4. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
5. undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
6. Functioning of the lighting system;

7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Parking Lay bays
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefore;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza:

One lane in each direction is operating at toll plaza and the extra wide lane is opened only for wide vehicles. The tolling is manned by two people per direction per shift with a day having two shifts. Toll Manager takes care of the daily operation and carries out the task of patrolling on bike. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account.

9.5 Maintenance of Project Road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.
Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of Periodic Maintenance

Description	Schedule	Status
1st Periodic Maintenance	2022	Planned to Execute
2nd Periodic Maintenance	2030	Planned to Execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Nov 2020. As per Schedule K of CA, If the roughness value stretch exceeds in a 3000mm in a KM the surface is the stretch shall be rectified. No stretch exceeded the permissible limit in the Project Road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Nov 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.428	0.204		0.84	1.47
2021	0.441	0.211		0.86	1.52
2022	0.454	0.217	12.15	0.89	13.71
2023	0.468	0.223		0.92	1.61
2024	0.482	0.230		0.95	1.66
2025	0.496	0.237		0.97	1.71
2026	0.511	0.244		1.00	1.76
2027	0.526	0.251		1.03	1.81
2028	0.542	0.259		1.06	1.86
2029	0.558	0.267		0.39	15.30
2030	0.203	0.0097	14.57	0.40	15.27
Total	**5.11**	**2.17**	**26.72**	**9.31**	**57.68**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project road on the Site set forth in Schedule-A of CA and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- operation and maintenance of the Project road in accordance with the provisions of this Agreement;
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the **provisions of this Agreement and matters incidental.**

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Contract Agreement

10.5 Obligations relating to the Competing Roads (Clause 6.3):

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction, an Aggregate sum, not less than 20% of the Total Project Cost.

10.7 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on successful completion, the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the Concession Agreement. Copy of the Provisional Completion Certificate issued is enclosed at **Annexure 7**

10.8 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Completion Certificate, Completion Certificate shall be issued to the Concessionaire.
- Copy of the Completion Certificate issued is enclosed at **Annexure 8**.

10.9 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

10.10 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDC and the same are given in **ANNEXURE 10.**

10.11 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials

- Complying with safety Requirements in accordance with the provisions of the Contract Agreement.

10.12 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (the "**Maintenance Requirements**").

10.13 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.15 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

10.16 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the Concession Agreement ("Monthly Fee Statement").

10.18 Annuity (Clause 25.1.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y of CA, the sum of Rs 8.91 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y of CA, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date. The Status of Annuity Payments is Listed below.

Table 10.1: Status of Annuity Payments

S. No.	Particulars	Paid on
1	1st Annuity	8-Dec-15
2	2nd Annuity	1-Jun-16
3	3rd Annuity	2-Dec-16
4	4th Annuity	31-May-17
5	5th Annuity	11-Dec-17
6	6th Annuity	4-Jun-18
7	7th Annuity	4-Dec-18
8	8th Annuity	31-May-19
9	9th Annuity	4-Dec-19
10	10th Annuity	2-Jun-20
11	11th Annuity	27-Nov-20

All the annuities are being paid regularly by the Authority.

10.19 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

10.20 Toll fee Clause (27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.

10.21 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 11.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910001992	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	3114203387673800000	19.05.2020	18.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project
Electronic Equipment Insurance Policy Schedule	Oriental Insurance Company Ltd	171200/44/2021/47	08.09.2020	07.09.2021	EEI Equipment installed in the Project Highway

Copy of the effective insurances are enclosed at **Annexure 9.**

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

- Pavement condition is good.
- Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations.
- Shoulder condition is fair.

12.3 Condition of Structures

- General condition of Bridges is good.
- No major structural defects were noticed
  Condition of Culverts is good.
- Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time, traffic data was extracted.
The traffic growth observed is 26.30% and 33.52% in TP-1 and TP-2 respectively, where as 5% growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities

- Two Toll Plaza are constructed one at Km.12+000 & the other at Km.75+900. Both operational condition.
- Toll Plazas are operated by ETC Toll collection system and connected by network system monitored in administrative building.
- Bus shelters are in good condition.
- Medical Aid post is functional
- Avenue plantation and landscaping is provided at Toll Plaza and being maintained.
- Highway lighting is provided at toll plaza and functional.

12.6 Road safety

- Pavement marking is in good condition and number of sign boards are provided as per Highway requirement. The condition of sign boards is good.
- Other road appurtenances like metal beam crash barriers and Kerb are intact

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance 7 years after COD is to be carried out to be in 2022 as a good industry practice.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000	1	2						F		E/P	F	F	LD	PF	
1+000	2+000								G		E	F	F	ULD	PF	
2+000	3+000								G		E	F	F	ULD	PF	
3+000	4+000								G		E/P	F	F	LD	PF	
4+000	5+000								G		E/P	F	F	LD	PF	
5+000	6+000								G		E/P	F	F	LD	PF	
6+000	7+000	2	2						F		E	F	F	ULD	PF	
7+000	8+000								G		E	F	F	ULD	PF	
8+000	9+000								G		E	F	F	ULD	PF	
9+000	10+000								G		E	F	F	ULD	PF	
10+000	11+000								G		E	F	F	ULD	PF	
11+000	12+000								G		E/P	F	F	LD	PF	
12+000	13+000								G		E	F	F	ULD	PF	
13+000	14+000								G		E	F	F	ULD	PF	
14+000	15+000								G		E	F	F	ULD	PF	
15+000	16+000								G		E	F	F	ULD	PF	
16+000	17+000								G		E	F	F	ULD	PF	
17+000	18+000								G		E	F	F	ULD	PF	
18+000	19+000								G		E/P	F	F	LD	PF	
19+000	20+000								G		E	F	F	ULD	PF	
20+000	21+000								G		E	F	F	ULD	PF	
21+000	22+000								G		E	F	F	ULD	PF	
22+000	23+000								G		E	F	F	ULD	PF	
23+000	24+000								G		E	F	F	ULD	PF	
24+000	25+000								G		E	F	F	ULD	PF	
25+000	26+000								G		E	F	F	ULD	PF	
26+000	27+000								G		E	F	F	ULD	PF	
27+000	28+000								G		E/P	F	F	LD	PF	
28+000	29+000								G		E	F	F	ULD	PF	
29+000	30+000	2	4						F		E	F	F	ULD	PF	
30+000	31+000								G		E/P	F	F	LD	PF	
31+000	32+000								G		E/P	F	F	LD	PF	
32+000	33+000								G		E	F	F	ULD	PF	
33+000	34+000								G		E	F	F	ULD	PF	
34+000	35+000								G		E	F	F	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
35+000	36+000								G		E	F	F	ULD	PF	
36+000	37+000								G		E	F	F	ULD	PF	
37+000	38+000								G		E	F	F	ULD	PF	
38+000	39+000								G		E	F	F	ULD	PF	
39+000	40+000								G		E	F	F	ULD	PF	
40+000	41+000								G		E	F	F	ULD	PF	
41+000	42+000								G		E	F	F	ULD	PF	
42+000	43+000								G		E	F	F	ULD	PF	
43+000	44+000								G		E	F	F	ULD	PF	
44+000	45+000								G		E	F	F	ULD	PF	
45+000	46+000								G		E	F	F	ULD	PF	
46+000	47+000								G		E	F	F	ULD	PF	
47+000	48+000								G		E	F	F	ULD	PF	
48+000	49+000								G		E	F	F	ULD	PF	
49+000	50+000	3	5						F		E	F	F	ULD	PF	
50+000	51+000								G		E	F	F	ULD	PF	
51+000	52+000								G		E	F	F	ULD	PF	
52+000	53+000								G		E	F	F	ULD	PF	
53+000	54+000								G		E	F	F	ULD	PF	
54+000	55+000								G		E	F	F	ULD	PF	
55+000	56+000								G		E	F	F	ULD	PF	
56+000	57+000								G		E	F	F	ULD	PF	
57+000	58+000								G		E	F	F	ULD	PF	
58+000	59+000								G		E	F	F	ULD	PF	
59+000	60+000								G		E	F	F	ULD	PF	
60+000	61+000								G		E	F	F	ULD	PF	
61+000	62+000								G		E	F	F	ULD	PF	
62+000	63+000								G		E	F	F	ULD	PF	
63+000	64+000								G		E/P	F	F	LD	PF	
64+000	65+000								G		E	F	F	ULD	PF	
65+000	66+000								G		E	F	F	ULD	PF	
66+000	67+000								G		E	F	F	ULD	PF	
67+000	68+000								G		E/P	F	F	LD	PF	
68+000	69+000								G		E	F	F	ULD	PF	
69+000	70+000	2	5						F		E	F	F	ULD	PF	
70+000	71+000								G		E	F	F	ULD	PF	
71+000	72+000								G		E	F	F	ULD	PF	
72+000	73+000	3	5						F		E	F	F	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
73+000	74+000								G		E	F	F	ULD	PF	
74+000	75+000	1	4						F		E	F	F	ULD	PF	
75+000	76+000								G		E	F	F	ULD	PF	
76+000	77+000	3	5						F		E/P	F	F	LD	PF	
77+000	77+515								G		E	F	F	ULD	PF	

Annexure 2: Condition of Bridges

S. No.	Chainage (Km.)	Type of Structure	Sub structure	Super structure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching	Toe wall
1	Km. 5+255	Minor Bridge	Fair	Good	-	Good	Fair	Good	Good	Fair	Good
2	Km. 19+513	Major Bridge	Fair	Good	Good	Good	Fair	Good	Good	Fair	Good
3	Km. 21+383	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good
4	Km. 23+951	Minor Bridge	Fair	Good	-	Fair	Fair	Good	Good	Fair	Good
5	Km. 26+176	Minor Bridge	Fair	Good	-	Good	Fair	Good	Good	Fair	Good
6	Km. 30+366	Minor Bridge	Fair	Good	Fair	Good	Fair	Good	Good	Fair	Good
7	Km. 40+251	Minor Bridge	Fair	Good	-	Good	Fair	Good	Good	Fair	Good
8	Km. 41+219	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good
9	Km. 47+755	Minor Bridge	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Good
10	Km. 48+433	Major Bridge	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Good
11	Km. 51+666	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good
12	Km. 52+697	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good
13	Km. 63+142	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good
14	Km. 67+764	Major Bridge	Fair	Fair	Fair	Good	Fair	Good	Good	Fair	Good
15	Km. 74+378	Minor Bridge	Fair	Fair	-	Good	Fair	Good	Good	Fair	Good

Annexure 3: Condition of Culverts

Box/ Slab Culverts

S. No.	Chainage (Km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons	Remarks
1	2+145	Good	Good	Fair	Fair	Fair	
2	8+030	Good	Good	Fair	Fair	Fair	
3	14+209	Good	Good	Fair	Fair	Fair	
4	14+637	Good	Good	Fair	Fair	Fair	
5	15+720	Good	Good	Fair	Fair	Fair	
6	15+895	Good	Good	Fair	Fair	Fair	
7	17+017	Good	Good	Fair	Fair	Fair	
8	19+437	Good	Good	Fair	Fair	Fair	
9	20+430	Good	Good	Fair	Fair	Fair	
10	21+182	Good	Good	Fair	Fair	Fair	
11	27+697	Good	Good	Fair	Fair	Fair	
12	32+026	Good	Good	Fair	Fair	Fair	
13	32+174	Good	Good	Fair	Fair	Fair	
14	32+774	Good	Good	Fair	Fair	Fair	
15	35+687	Good	Good	Fair	Fair	Fair	
16	36+096	Good	Good	Fair	Fair	Fair	
17	36+527	Good	Good	Fair	Fair	Fair	
18	43+444	Good	Good	Fair	Fair	Fair	
19	45+182	Good	Good	Fair	Fair	Fair	
20	49+972	Good	Good	Fair	Fair	Fair	
21	54+188	Good	Good	Fair	Fair	Fair	
22	55+588	Good	Good	Fair	Fair	Fair	
23	56+999	Good	Good	Fair	Fair	Fair	
24	57+950	Good	Good	Fair	Fair	Fair	
25	58+688	Good	Good	Fair	Fair	Fair	
26	60+140	Good	Good	Fair	Fair	Fair	
27	61+489	Good	Good	Fair	Fair	Fair	
28	63+656	Good	Good	Fair	Fair	Fair	
29	64+279	Good	Good	Fair	Fair	Fair	
30	64+778	Good	Good	Fair	Fair	Fair	
31	65+586	Good	Good	Fair	Fair	Fair	
32	66+359	Good	Good	Fair	Fair	Fair	
33	68+132	Good	Good	Fair	Fair	Fair	

S. No.	Chainage (Km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons	Remarks
34	72+777	Good	Good	Fair	Fair	Fair	
35	75+766	Good	Good	Fair	Fair	Fair	
36	77+448	Good	Good	Fair	Fair	Fair	

Hume Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+784	Good	Good	Fair	-
2	1+297	Good	Good	Fair	-
3	3+211	Good	Fair	Fair	-
4	3+279	Good	Good	Fair	-
5	3+444	Good	Fair	Fair	-
6	4+173	Good	Good	Fair	-
7	4+542	Good	Fair	Fair	-
8	5+610	Good	Fair	Fair	-
9	5+810	Good	Good	Fair	-
10	6+069	Good	Good	Fair	-
11	6+937	Good	Fair	Fair	-
12	7+367	Good	Fair	Fair	-
13	9+440	Good	Fair	Fair	Fair
14	12+107	Good	Good	Fair	Fair
15	12+711	Good	Good	Fair	Fair
16	13+093	Good	Good	Fair	Fair
17	13+757	Good	Fair	Fair	Fair
18	14+811	Good	Good	Fair	Fair
19	16+366	Good	Good	Fair	Fair
20	17+395	Good	Fair	Fair	Fair
21	19+898	Good	Fair	Fair	Fair
22	22+261	Good	Good	Fair	Fair
23	22+505	Good	Fair	Fair	Fair
24	23+056	Good	Fair	Fair	Fair
25	24+042	Good	Good	Fair	Fair
26	24+345	Good	Good	Fair	Fair
27	25+414	Good	Good	Fair	Fair
28	29+305	Good	Fair	Fair	Fair
29	29+471	Good	Good	Fair	Fair
30	30+778	Good	Fair	Fair	-
31	31+038	Good	Good	Fair	-
32	32+496	Good	Good	Fair	-
33	33+533	Good	Good	Fair	-
34	36+385	Good	Fair	Fair	-
35	36+939	Good	Good	Fair	-

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
36	39+175	Good	Good	Fair	-
37	39+736	Good	Fair	Fair	-
38	39+917	Good	Good	Fair	-
39	42+339	Good	Good	Fair	-
40	42+696	Good	Good	Fair	-
41	43+576	Good	Fair	Fair	Fair
42	45+484	Good	Good	Fair	Fair
43	46+457	Good	Fair	Fair	Fair
44	47+423	Good	Fair	Fair	Fair
45	48+686	Good	Good	Fair	Fair
46	53+494	Good	Good	Fair	Fair
47	53+76	Good	Fair	Fair	Fair
48	54+458	Good	Good	Fair	Fair
49	55+914	Good	Fair	Fair	Fair
50	56+068	Good	Good	Fair	Fair
51	56+35	Good	Fair	Fair	Fair
52	58+381	Good	Good	Fair	Fair
53	61+768	Good	Good	Fair	Fair
54	62+061	Good	Good	Fair	Fair
55	62+802	Good	Fair	Fair	Fair
56	67+356	Good	Good	Fair	Fair
57	69+221	Good	Fair	Fair	Fair
58	69+516	Good	Fair	Fair	Fair
59	71+754	Good	Good	Fair	Fair
60	76+886	Good	Fair	Fair	Fair

Annexure 4: Toll Revenue Calculations

1. **Tollable Traffic considered for Toll Revenue in No.s (AADT):**

Table.1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT) Km. 12+000	Traffic (AADT) Km. 75+900
Car/Taxi/Van	281	305
LCV	74	123
Bus	40	11
Truck	13	9
MAV	35	39

2. **Traffic Growth Rates**

Table.2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30	5.00	5.00	5.00	5.00	5.00
2021-22	5.00	5.00	5.00	5.00	5.00
2022-23	5.00	5.00	5.00	5.00	5.00
2023-24	5.00	5.00	5.00	5.00	5.00

3. **Trip Distribution Ratio as per the Toll Data.**

Table.3: Details of Trip Distribution (Base Year 2019-20)
Mawai & Bela:

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	98%	2%	100%
LCV	100%		100%
Bus	100%		100%
Truck	100%		100%
MAV	100%		100%

4. **Toll Rates :**

Table.4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km. 12+000 & Km. 75+900
Car/Taxi/Van	45
LCV	110
Bus	225
Truck	270
MAV	540

Note: There are two numbers of toll plazas existing on the project road. One booth of the toll plaza in each direction is used for Toll Ticket issue & Checking as well.

Toll Plaza-1 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	4521195	159755	2924455	3310400	1290945	6864275	19071025	190.710	190.710
2020-21	4747255	178227	3124853	3623030	1400322	7453521	20527207	205.272	395.982
2021-22	5538464	187138	3430236	3966062	1549106	8175580	22846586	228.466	624.448
2022-23	5815387	208053	3758345	4334339	1681699	8877842	24675666	246.757	871.205
2023-24	6106156	230593	4110690	4640292	1823679	9629890	26541301	265.413	1136.618
2024-25	7052611	242122	4488874	5059703	1975652	10434949	29253911	292.539	1429.157
2025-26	7405241	267609	4894599	5509455	2138263	11381375	31596542	315.965	1745.122
2026-27	8482367	280989	5329674	5991532	2312197	12307173	34703933	347.039	2092.162
2027-28	8906486	309791	5596158	6508043	2533363	13297098	37150939	371.509	2463.671
2028-29	9351810	340770	6085822	6947336	2733921	14453571	39913230	399.132	2862.803
2029-30	10637684	357808	6610462	7533874	2948202	15589209	15436613	154.366	3017.170

Toll Plaza-2 Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	4902300	177035	4850760	897820	858595	7640225	19326735	193.267	193.267
2020-21	5147415	197505	5430852	980831	931686	8293599	20981888	209.819	403.086
2021-22	6005318	207380	5950325	1073697	1013209	9097041	23346969	233.470	636.556
2022-23	6305583	230558	6508168	1150390	1100554	9878453	25173706	251.737	888.293
2023-24	6620863	255535	7106919	1256226	1213361	10715265	27168168	271.682	1159.975
2024-25	7647096	268311	7462265	1369769	1314474	11701069	29762985	297.630	1457.605
2025-26	8029451	296555	8136739	1491526	1422666	12664157	32041094	320.411	1778.015
2026-27	9197371	311383	8860005	1622035	1538390	13694301	35223484	352.235	2130.250
2027-28	9657240	343299	9635255	1732501	1662130	14899995	37930420	379.304	2509.554
2028-29	10140102	377629	10465881	1880792	1794398	16082617	40741418	407.414	2916.969
2029-30	11534366	396511	11355481	2039580	1961547	17346251	44633735	157.747	3074.715

Summary:

Toll Plaza-1 & 2 Total Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	9423495	336790	7775215	4208220	2149540	14504500	38397760	383.978	383.978
2020-21	9894670	375731	8555705	4603862	2332008	15747119	41509094	415.091	799.069
2021-22	11543781	394518	9380561	5039759	2562315	17272621	46193555	461.936	1261.004
2022-23	12120970	438611	10266513	5484729	2782253	18756295	49849372	498.494	1759.498
2023-24	12727019	486127	11217609	5896518	3037040	20345155	53709468	537.095	2296.592
2024-25	14699707	510434	11951139	6429473	3290126	22136018	59016896	590.169	2886.761
2025-26	15434692	564164	13031338	7000981	3560929	24045532	63637636	636.376	3523.138
2026-27	17679738	592372	14189679	7613567	3850587	26001474	69927417	699.274	4222.412
2027-28	18563725	653090	15231413	8240545	4195493	28197093	75081359	750.814	4973.226
2028-29	19491912	718399	16551702	8828128	4528319	30536188	80654648	806.546	5779.772
2029-30	22172049	754319	17965942	9573454	4909749	32935460	60070348	312.113	6091.885

Annexure 5: Operation & Maintenance Cost

Routine Maintenance cost for 1 year

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km.	76.4	12	4	350	12,83,520	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms	15.5	24	4	350	5,20,800	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km.	15.5	52	1	1939	15,62,834	01 nos of Labour
4	ROW Cleaning	Half yearly	Km.	38.2	2	5	350	1,33,700	5 Nos of labour per KM (50% of the Project length)
5	Cleaning of Culverts	Half yearly	Nos	96	2	2	650	2,49,600	3 nos of Labour along with JCB or Excavator
6	Road Furniture Cleaning	Quarterly	Km.	76.4	4	1	350	1,06,960	02 nos of Labour
7	Maintenance of Bus shelters	Monthly	Nos	8	6	1	350	16,800	2 nos/ Bus shelter/month
8	General Cleaning in Building & Facilities	Daily	Nos	1.00	6	15	350	31,500	02 nos of Labour for 30 days
9	Bridges	Half yearly	Nos	12	2	2	350	16,800	02 nos of Labour for removal of vegetation/Structure
								39,22,514	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Grass cutter	Monthly	Nos	3.2	12	0	12000	1,920	(12000/year)

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
3	Bikes	Monthly	Nos	2	12	0	2500	4,000	Per Supervisor/Per Month
4	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								65,920	

1	Patrolling vehicle	Monthly	Nos	12			150000	150000	(1500000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Ambulance	Monthly	Nos	12		2	10000	20000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
3	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	5000	60000	2500 Per month for per set (Per set - Per toll plaza)
4	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	5000	60000	2500 Per month for per set (Per set - Per toll plaza)
								2,90,000	
								42,78,434.00	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	1857	516	9,58,212	10 % of Total Project length on B/S for 1 year
2	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1146	225	7,73,550	5% of total Shoulder length throughout the project
3	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos.)
4	MBCB	Monthly	RMT.			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
5	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	76.4	4	19	2250	1,71,000	5 % of total stones per year (unable to understand the backup)
							Total amount for 1 Year	**20,44,762**	

Operational Expenses

S. No.	Particulars	Amount
1	Man Power	₹ 49,92,000
2	Fuel for Generator & Vehicles	₹ 29,52,000
3	Electricity	₹ 3,30,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 37,760
6	Refurbishment of Toll Plaza Equiment	₹ 75,000
	Total Amount	₹. 83,96,760

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
Major Maintenance - Highway	01-04-2022	11,69,48,590	1.20	3.0%	12,11,58,739	12.12
Major Maintenance - Highway	01-04-2029	11,69,48,590	8.20	3.0%	14,57,17,943	14.57
				Total	**₹ 26,68,76,682**	**26.69**

Major Maintenance BOQ

S. No.	Description	Unit	Quantity	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm.	-	14.00		-	14.00	
2	Providing and layingSemi dense bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum.	-	7,480.00		-	7,480.00	
	Providing and layingSemi dense bituminous concrete using a batch type Hot Mix Plan	Cum.	8,186.25	6,800.00	5,56,66,500	8,186.25	6,800.00	5,56,66,500

3	Micro surfacing	Sqm.	2,79,450.00	185.00	5,16,98,250	2,79,450.00	185.00	5,16,98,250
4	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
5	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm.	-	130.00		-	130.00	
	Total				**10,73,64,750**			**10,73,64,750**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	RMT.	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm.	18,573.33	516.00	95,83,840	18,573.33	516.00	95,83,840
3	Road Studs	Nos.	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**95,83,840**		-	**95,83,840**
	Grand Total				**11,69,48,590**			**11,69,48,590**

Annexure 6: Letter of Acceptance

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2766196, 205, 213, 216 (EPBX) Fax : 91-755-2572843
Website : www.mprdc.nic.in.

No. MPRDC/BOT/T-J-P-N/2013/ 8273
Bhopal, dated 27 September,2013

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal
Fax: 4247574

Sub: **Development of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon Road on BOT (Toll+Annuity) basis**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon Road on BOT (Toll+Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. **8,91,00,000.00 (Rupees eight crores ninety one lacs only)** as Annuity Amount payable in terms of Clause 25 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA for acknowledgement**

(Arun Paliwal)
General Manager

Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate

HEC

Civil Consultancy Services

HIGHWAY ENGINEERING CONSULTANT

Project Office : 4, Sunrise Residency, Rajghat Road, Sagar (M.P.) Mob : 9753923583, 07582-298029
Email : heceagar@gmail.com

Ref. No. : HEC/Sagar/TJPN Rd./Rd. F-2/1247

Date : 26/05/2015

To,
The Project Manager
M/S DBL Tikamgarh-Nowgaon Tollways Ltd.
Jatara Distt.- Tikamgarh (M.P.)
Email ID :- tyagiramavtar45@gmail.com

Subject: - Development of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon Major District Road on BOT (Toll+Annuity) basis **regarding Provisional Completion Certificate.**

Reference: - (i) Your letter no. DBL/TJPN/HEC/MPRDC/14-15/207 dated 26/04/2015.
(ii) Your letter no. DBL/TJPN/HEC/MPRDC/14-15/230 dated 11/05/2015.

Dear Sir,

The Provisional Completion Certificate Dated 26/05/2015 in respect of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon road project, is sent herewith for your reference and record.

Please acknowledge receipt
Enclosure: Provisional Completion Certificate with Punchlist.

Thanking you.
Your faithfully,

(Rajendra Kumar Goyal)
Team Leader
Highway Engineering Consultant
Sagar (M.P.)

Copy to :- i) Personal Assistance to the Managing Director, MPRDC, Bhopal (M.P.)
ii) The Chief Engineer, MDR, MPRDC, Bhopal (M.P.)
iii) The Divisional Manager, MPRDC, Sagar (M.P.).
iv) The Director M/S DBL Tikamgarh-Nowgaon Tollways Ltd. Bhopal (M.P.)
v) The Director HEC, Bhopal, (M.P.)
vii) The Resident Engineer, HEC Tikamgarh (M.P.).
viii) BE / ME / HE, HEC, Sagar, (M.P.)
xi) File copy – Road / Gen & C/A

Enclosure: Provisional Completion Certificate with Punchlist.

Annexure 8: Completion Certificate

HIGHWAY ENGINEERING CONSULTANT

Civil Consultancy Services

Project Office : 4, Sunrise Residency, Rajghat Road, Sagar (M.P.), Mob.: 9753923583, 07582-298029
Email: heceagar@gmail.com

Ref. No. Date : 13.08.2015.

COMPLETION CERTIFICATE

1) I, RAJENDRA KUMAR GOYAL acting as Independent Engineer, under and in accordance with the Concession Agreement dated 12.11.2013 for intermediate laning of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon MDR. from KM 0.000 to 77.515 on build, operate and transfer (BOT) Toll + Annuity basis, through M/s DBL Tikamgarh-Nowgaon Tollways Ltd., hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of Users thereof.

2) It is certified that in terms of the aforesaid Agreement, all works forming part of Intermediate Laning and Four-Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 13th day of August 2015.

Signed, Sealed and Delivered
For and on behalf of Independent Engineer by

(Rajendra Kumar Goyal)
Team Leader
Highway Engineering Consultant
Sagar (M.P.)

Head Office : T-10, IIIrd Floor, City Centre, Press Complex, Plot No.1, M.P. Nagar Zone-I, BHOPAL (M.P.) 462011
Phone/Fax : 0755-4295421, Email : hec_bhopal@rediffmail.com

Annexure 9: Insurance Details

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001992

जारीकरण कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1Z8
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्त्रोत /Business Source: 910355
बिक्रय चैनल कोड/**Sales Channel** Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL TIKAMGARH NOWGAON TOLLWAYS LTD
पता/ Address: PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881844
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAECD8604L

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 11,65,113.00	कवर नोट संख्या और तारीख/ Cover Note Number and Date	NA
CGST	₹ 1,04,860.00		
SGST/UTGST	₹ 1,04,860.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तारीख/Proposal Number and Date	880020O327086953 Dt. 27/03/2020
कम जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तारीख/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 13,74,833.00	पिछली पॉलिसी संख्या और समाप्ति तारीख/ Previous Policy Number and Expiry Date	NA

(Rupees Thirteen Lakh Seventy Four Thousand Eight Hundred Thirty Three Only.)
Location: Tikamgarh(Dhajrai) Jatara- Palera-Nowgaon Road, Madhya Pradesh Tikamgarh, Tikamgarh, 472001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	1,06,71,11,000.00	1,00,000.00
2	Roads		Zone IV	9,82,69,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

Printed on 27/03/2020 by ID: 75159

Page no: 1

INSURANCE

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

DBL TIKAMGARH NOWGAON TOLLWAYS LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203387673800000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203387673800000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020

Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078

Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203387673800000 **Employees Compensation Insurance**

Insured Name	DBL TIKAMGARH NOWGAON TOLLWAYS LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	13/05/2020

Period of Insurance	From Date & Time	19/05/2020 00:01 AM	To Date & Time	18/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203387673800000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:36:35 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/47**	**Prev Policy No**	:
Cover Note No	: ER1700203540	Cover Note Dt	: 08/09/2020
Insured's Code	: 96715840	Issuing Office Code	: 171200
Insured's Name	: DBL TIKAMGARH NOWGAON TOLLWAY LTD. (GSTIN: 23AAECD8604L1ZM)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh- 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / avni.sheth@unisoninsurance.net BHOPAL 462016	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code :

Agent/Broker : **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**

Address : **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**

Tel/Fax/Email : **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_IND 3214000879 - 23/09/2020 GST INVOICE NO :2419502812 UIN :0

Gross Premium : 2,510 GST : 452 Stamp Duty : 1 Total : 2,962

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 55,78,190

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Tikamgarh to Nowgaon

MADHYA PRADESH - 472001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		55,78,190

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 22/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

Attached to and forming part of policy number 171200/44/2021/47

Signer: ATUL JERATH
Date: Fri, Nov 6, 2020 14:36:35 IST
Location: NOIDA
Reason: Signing Policy for OICL

2) Winchester Drive and/or Hard Disc-25% of claim amount subject to a minimum of Rs.10,000/-

In case of computers, the term 'equipment' shall include the entire computer system comprising of CPU, Key boards, Monitors, Printers, Stabilizers, UPS.

SCHEDULE OF PREMIUM

Cover Description	Premium
TOTAL PREMIUM	2,510
ADD :IGST	452
STAMP DUTY	1
TOTAL AMOUNT	2,962

Total Sum Insured In Words : Indian Rupees Fifty-Five Lakhs Seventy-Eight Thousand One Hundred Ninety Only
Total Amount Paid : Indian Rupees Two Thousand Nine Hundred Sixty-Two Only

The Insurance under this policy is extended to cover risks of (as per forms attached):

EAR - EARTHQUAKE COVER
STFI Inclusion Cover

Excess / Deductible :
The following minimum deductibles are applicable based on Sum Insured of the policy

The Insurance under this policy is subject to warranties & Clauses (as per forms attached) :

In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
Communicable Disease Exclusion Clause
Exclusion-Any Direct or indirect loss by infectious or contagious disease

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at CBU Vadodara (GSTIN: 24AAACT0627R2Z4) on 22ND DAY OF SEPTEMBER 2020

For and on behalf of
The Oriental Insurance Company Limited

Entered By : FARHAN KHAN
Examined By : A K Parmar

Authorised Signatory

Place : -
Date : 22/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

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Annexure 10: Change of Scope

Development of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon Road (MDR) on BOT (Toll+Annuity) basis

Road width in Built up areas.

Sr.No.	Provision as per Schedule-B					Construction proposed by Concessionaire as per site condition				Reasons & recommendation by Independent Engineer	Decision of Committee
	Village Name	Chainage From	Chainage To	Length in mtr	Width to be paved drain to drain (mtr.)	From	To	Length in mtr	Width to be paved drain to drain (mtr.)		
1	2	3	4	5	6	7	8	9	10	11	12
	Project Length	76.400 Km				77.515 Km				This project has been developed in BOT (Toll+Annuity) scheme. Toll rights of increased length 1.115 Km has been given to the concessionaire. Necessary decision regarding increased length as change of scope may be taken by the Advisory committee as per provision of Concession Agreement.	
1	Dhajrai	0	400	400	15.00	0	400	400	15.00	In the schedule B, article 2.2 table B-2 ,on page 20, the width to be paved in built up areas is proposed as per fig. 2.3 of schedule D i. e. 12m. drain to drain in available ROW. The paved width was adopted as per schedule i. e. 12m. drain to drain.	
2	Mawai	2420	5020	2600	15.00	2418	4949	2531	15.00		
3	Majna	9720	10720	1000	15.00	9731	10723	992	15.00		
4	Lar Khurd	17700	18700	1000	15.00	17710	18748	1038	15.00		

5	Dinar /Khargupara	36950	37950	1000	15.00	36945	37900	955	15.00	(Excluding drains).Hence it is recommended to consider 102m. Reduced length as negative change of scope.	
6	Sitara Khurd	38420	40420	2000	15.00	38261	40350	2089	15.00		
7	Laron (Aalampur)	63240	64240	1000	15.00	63219	64187	968	15.00		
8	Garroli	68240	69240	1000	15.00	68160	69145	985	15.00		
9	Dharangpura (Nowgaon Tigaila)	76415	77515	1000	15.00	76573	77515	940	15.00		
Total				11000				10898	102		
1	Jatara Town	-	-	-	-	32650	33530	880	RHS	The single cell open drain was constructed by concessionaire as per site requirement and as per the directions given by the DivisionalManager,MPRDC, Sagar on complaint of villagers through CM helpline. Hence the total length of 1657m of drain may be considered as positive change of scope.	
2	Barana Village	-	-	-	-	42835	43276	401	BHS		
3	Barana Village	-	-	-	-	43173	43282	109	BHS		
4	Sanjay nagar	-	-	-	-	48525	48654	129	BHS		
5	Garouli Village	-	-	-	-	67985	68123	138	BHS		
Total								1657			
Sr.No.	Provision as per Schedule-B					Construction proposed by Concessionaire as per site condition				Reasons & recommendation by Independent Engineer	Decision of Committee

	Village Name	Chainage From	Chainage To	Length in mtr	Width in mtr.	From	To	Length in mtr	Width in mtr.		
1	2	3	4	5	6	7	8	9	10	11	13
10	Jatara Town	29900	33009	3109	5.5	(a) 29900	31200	1300	10	Intermediate lane was proposed in Jatara Town portion, but the stretch comes under buil up reach. Two lane pave shoulder was constructed in Jatara Town Portion except stretch from Ch. 31200 to 32000 where availability of ROW was only 6 mtr. Stretch from chainage 32+454 to chainage 33+009 passes through the bank of pond one side and hill at another side. Existing carriagway in this reach was rigid pavement of 3.5 to 4 mtr width, which was considered as DLC and the road was widened to 10 mtr. It is recommended to consider difference of cost as positive change of scope.	
						(b) 31200	32000	800	6		
						(c) 32000	32454	454	10		
						(d) 32454	33009	555	10 (Rigid Pavement)		

11	Palera Town 4 Lane	53500	57000	3500	4 Lane Flexible	53500	57000	3500	4 Lane Rigid	There was existing rigid pavement of approx 3.5 mtr width carriageway with median of regular width and in damaged condition in Palera Town portion. Four lane rigid pavement has been constructed with reconstruction of 1.5 mtr median. Existing carriageway of rigid pavement was considered as DLC and the road is widened to four lane of rigid pavement. It is recommended to consider difference of cost as change of scope.	

Drain in built up areas

Sr.No.	Provision as per Schedule-B				Side	Construction proposed by Concessionaire as per site condition			Side	Reasons & recommendation by Independent Engineer	Decision of Committee
1	2	3	4	5	6	7	8	9	10	11	12
	Palera (Four Lane)									There is a two cell drain was proposed in built up stretch as per Clt.2.3 of schedule-B for	

1	[illegible]	0	400	400	B/S	0	400	400	B/S	two long paved shoulder drain to drain. Concessionaire has constructed the same section of two cell drain shown in the table. Due to lesser length (750mtr) of Drain Constructed, it is recommended to consider as (-) negative change of scope. In fig. 2.2 of schedule-D for four lane section there was no mention of drain. As per clause 2.6 of schedule-B states - **Drainage - The drainage in open country and built up area shall be as per manual of standard and specification for two lane with earthen shoulder schedule-D. In built up area covered and pipe drains with main holes at suitable interval the pipes should be provided. Such drains shall be accommodated below the footpath if additional land is not available. Only one side drain providing which does not required additional land.** Concessionaire has not constructed any drainage in four lane section of Palera Town portion, which comes under built up area and drainage should be ensured by the concessionaire as per clause 2.6 of schedule-B. Construction of drain is
2	Mawai	2420	5020	2600	B/S	2418	4909	2491	B/S	
3	Majna	9720	10720	1000	B/S	9731	10723	992	B/S	
4	Lar Khurd	17700	18700	1000	B/S	17710	18748	1038	B/S	
5	Dinau /Khargupura	36950	37950	1000	B/S	36945	37739	794	B/S	
6	Sitora Khurd	38420	40420	2000	B/S	38261	39077	816	B/S	
						39187	39770	583		
						39780	39930	150		
						39945	40187	242		
7	Laron	63240	64240	1000	B/S	63219	64158	930	B/S	
18	Garroli	68240	69240	1000	B/S	68180	69095	915	B/S	
9	Dharampura (Nowgaon Jagaria)	76515	77515	1000	B/S	76525	77465	890	B/S	

										urgently required in this four lane section, moreover construction of footpath in four lane section has also not been constructed which was clearly mention in fig. 2.2 of schedule-D. It is recommended to ask concessionaire to ensure drainage in Palera four lane sections and footpath construction should also be done.	
	Total length =			11000				10250			

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Development of Tikamgarh (Dhajrai)-Jatara-Palera-Nowgaon Road (MDR) on BOT (Toll+Annuity) basis

Cross Drainage Works

Sr. No.	Inventory sr no.	Chainage		Provision as per Schedule-B			Construction proposed by Concessionaire as per site condition			Reasons & recommendation by Independent Engineer	Decision of committee
		Existing	Design	Proposal	Type of structure	Span arrangement	Proposal	Type of structure	Span arrangement	(-) &(+)Ve COS	
1		2	3	4	5	6	7	8	9	11	13
(I) Minor Bridges											
1	9	Extra	05+255	-	MNB	-	New construction	Minor Bridge	3x5 mtr.	On this spot, the arch slab culvert 3x2.30mtr.was found at site but in schedule-B no structure was proposed. The hydraulic data were observed and found the requirement of Minor Bridge 3x5.00 mtr. Hence the proposal of new construction was adopted on the ground of the requirement and existing cross drain a arched culvert 3x2.3m. .Catchment area-7sqkm and linear water way 15.mtr. Recommended for positive change of scope.	
2	39	34/4	23+951	Reconstruction	Box Culvert	1x4 mtr.	Reconstruction	Minor Bridge	2x4.5 mtr.	In the schedule B page no. 29 serial no 10 Span arrangement changed. No Change of Scope as per note – page no. 41 of schedule B linear water way 8.93mtr. catchment area 5.3sq km.	
3	43	36/6	26+176	Reconstruction	Box Culvert	1x4 mtr	Reconstruction	Minor Bridge	1x8 mtr	In the schedule B page no. 27 serial no 12 Span arrangement changed. No Change of Scope as per note – page no. 41 of schedule B linear water way 7.99, catchment area 6.70sq km.	
4	62	55/2	40+251	Reconstruction	Box Culvert	1x6 mtr	Reconstruction	Minor Bridge	2x4 mtr	In the schedule B page no. 27 serial no 14. Span arrangement changed. No Change of Scope as per note – page no. 41 of schedule B linear water way 8.00 mtr., catchment area 2.042sq km.	
5	63	18/2	51+666	Reconstruction	MNB	2x8 mtr	Reconstruction	Minor Bridge	3x6.5 mtr	In the schedule B page no. 40 serial no 2 Span arrangement changed. No Change of Scope as per note – page no. 41 of schedule B linear water way 17.677 mtr., catchment area 27.04sq km.	

(2) Slab Culvert

				uction					tr	29 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required ,hence the existing structure was retained Recommended for (-ve) negative change of scope for HPC 2 x1200mm ,width-10mts
7	48	41/2	30+778	Reconstr uction	HPC	1 X 1.20	Retained	Slab Culvert	1 x 0.90x1.5mtr	In the schedule B-6-b(a) (ii) page no. 29 serial no. 29 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required ,hence the existing structure was retained. Recommended for (-ve) negative change of scope for HPC 1x1200mm, width-10mts
8	49	41/4	31+038	Reconstr uction	HPC	1 X 1.20	Retained	Slab Culvert	1x0.90x1.4 mtr	In the schedule B-6-b(a) (ii) page no. 33 serial no. 30 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required, as such there was no defined nala /stream at site. Hence the existing structure was retained .Recommended for (-ve) negative change of scope for HPC 1x1200mm, width-11mts
9	53	42/2	35+713	Reconstr uction	HPC	1 X 1.20	Retained	Slab Culvert	1x1.15x1.0mtr	In the schedule B-6-b(a) (ii) page no. 33 serial no. 33 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required as such there was no defined nala /stream at site. ,Hence the existing structure was retained Recommended for (-ve) negative change of scope for HPC 1x1200mm, width-12mts
10	54	42/6	36+087	Reconstr uction	HPC	1 X 1.20	Retained	Slab Culvert	1x1.30x1.10 mtr	In the schedule B-6-b(a) (ii) page no. 33 serial no. 34 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required , hence the existing structure was retained Recommended for (-ve) negative change of scope for HPC 1x1200mm width-12mts
11	56	Extra	36+527				widening	Slab Culvert	1x1.30x1.2mtr	In the schedule in schedule no structure was proposed but slab culvert 1x1.30 mtr was found in good condition, hence the existing structure was retained and widened. Recommended for (-ve)

										width-12mts positive change of scope for widening	
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
13	60	Extra	39+736		-	-	Widening	Slab	1 X 1.0x1.20mtr	Not Mention in Schedule A & B. But SC 1x1.0 found at site having carriageway width less than 7.5 meter. Hence widening done for 12 mtr.. It is recommended to consider as a Positive change of scope for widening. width-12mts	
14	63	36/6	41+219	Reconstruction	MNB	1x8 mtr	Reconstruction	Box Culvert	1x6 meter	In the schedule B page no. 40 serial no 4.Span arrangement changed. No Change of Scope as per note – page no. 41 of schedule B linear water way required 6.00 meter.. catchment area 1.924 km.	
15	66	30/10	43+346	Reconstruction	HPC	1 X 1.20	Retained	Slab Culvert	1x2.50x1.0 mtr	In the schedule B-6-b(a) (ii) page no. 32 serial no. 22 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required, hence the existing structure was retained. Recommended for (-ve) negative change of scope for HPC 1x1200mm. width-12mts	
16	67	28/2	43+575	Reconstruction	HPC	1 X 1.20	Retained	Slab Culvert	1x3.50x1.0mtr	In the schedule B-6-b(a) (ii) page no. 32 serial no. 20 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required , hence the existing structure was retained Recommended for (-ve) negative change of scope for HPC 1x1200mm. width-12mts	
17	71	25/2	46+331	Retained	SC	1x6	Widening	Slab	1 X 6.0x2.0mtr	Mention in Schedule 6-b(b)(iii) page no. 35 serial no. 8.slc found at site having carriageway width less than 7.5 meter. Hence widening done for 12 mtr. It is recommended to consider as a Positive change of scope for widening. width-12mts	
18	72	24/8	46+457	Reconstruction	HPC	1 X 1.20	Retained	Slab Culvert	1 X0.9x1.5 meter	In the schedule B-6-b(a) (ii) page no. 31 serial no. 17 the HPC was proposed for reconstruction but the existing structure was found in good condition having carriageway width less than 7.5 meter. Hence widening done for 12 mtr. It is recommended to consider as a (-ve) negative change of scope for proposed structure as per	

										Schedule B-1(b)(i), 12mts. As the condition of HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required, hence the existing structure is retained. Recommended for (-ve) negative change of scope. For HPC 1x1200mm, width-12mts
20	87	15/2	52+700	Retained	SC	1x4	Deleted	—	—	Mention in Schedule 6-b(b)(iii) page no. 27 serial no.16, the s/c was proposed for reconstruction but at site no structure was found. Reconstruction was not required; as such there was no defined nala /stream at site. Recommended for (-ve) negative change of scope for s/c 1x4.0 m
21	91	14/8	56+740	Reconstruction	SC	1x4	Deleted		—	Mention in Schedule 6-b(b)(iii) page no. 28 serial no.17, the s/c was proposed for reconstruction but no structure was found at site. Reconstruction was not required; as such there was no defined nala /stream at site. Recommended for (-ve) negative change of scope for s/c 1x4.0 m
22	92	Extra	56+999	-	-	-	Widening	Slab	1 X 3.00x1.0 meter	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12 mtr. It is recommended to consider as a Positive change of scope for widening and slab replacement.
23	93	Extra	57+950	-	-	-	Widening	Slab	1 X 3.00x1.0 meter	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12 mtr. It was recommended to consider as a Positive change of scope for widening and slab replacement.
24	94	Extra	58+381	-	-	-	Widening	HPC	1 X 1.0 meter	Not mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12mtr. Consider positive change for widening and slab replacement.
25	95	Extra	58+688	-	-	-	Widening	Slab	1 X 2.00x1.0 meter	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12 meter. It is recommended to consider as a Positive change of scope for widening and slab replacement
26	96	Extra	60+140	----	-	-	Widening	Slab Culvert	1x2.00x1.0 mts	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter.

										Hence widening done for 12 mtr. It is recommended to consider as a Positive change of scope for HPC 1x1200mm.	
(3) Hume Pipe Culvert											
27	28	15/10	17+395	Reconstruction	HPC	1 X 1.20	Retained	HPC	1 x 0.60mtr	In the schedule B-6-b(a) (ii) page no. 31 serial no. 12 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required as such there was no defined nala /stream at site. Hence the existing structure was retained .Recommended for (-ve) negative change of scope for HPC 1x1200mm.	
28	29	Extra	17+395	-	-	-	New construction	HPC	1 X 1.20mtr	Not Mention in Schedule A & B. But at site culvert was required. There was defined natural stream. It is recommended to consider as a Positive change of scope for HPC 1x1200.	
29	30	Extra	32+115	-	-	-	New construction	HPC	1 X 1.20mtr	At chainage32+115 no structure was proposed but HPC of 1x0.60m. Was found at site in poor condition. Therefore new construction was proposed hence recommended to consider positive change of scope for 1x1.2 HPC	
30	55	43/10	36+385	Retained	SC	1 X 1.50	Reconstruction	HPC	1x1.20 mtr	In the schedule B-6-b(a) (ii) page no. 36 serial no. 05 the SC was proposed to retained but the existing structure was found in Poor condition and reconstruction was required , hence the existing structure was reconstructed as HPC 1x1.20 in place of SC 1x1.50 Recommended for (+ve) positive change of scope for HPC 1x1200mm.	
31	61	Extra	39+917	-	-	-	New Construction	HPC	1 X 1.20mtr	Not Mention in Schedule A & B. There was defined natural stream at site and hence the culvert was required. It is recommended to consider as a Positive change of scope for HPC 1x 1200.	
32	64	Extra	42+339	-	-	-	New construction	HPC	1 X 1.20mtr	Not Mention in Schedule A & B. There was defined natural stream and SC 1x1.0 was found at site hence culvert was required. It is recommended to consider as a Positive change of scope for HPC 1x 1200.	
33	70	Extra	45+483	-	-	-	New construction	HPC	1 X 1.20mtr	Not Mention in Schedule A & B. There was defined natural stream and HPC 1x0.6 was found at site hence HPC and proposed accordingly. Culvert was required. It is recommended to consider as positive change of scope for HPC 1x1.20 mtr.	

[illegible]	[illegible]	22/6	[illegible]	Reconstruction	HPC	1 X 1.20	Deleted	-	-	In the schedule B-6-b (a) (ii) page no. 34 serial no. 41 the HPC [illegible] for reconstruction but [illegible] Recommended for (-ve) negative change of scope for HPC 1x1200.	
[illegible]	[illegible]	[illegible]	[illegible]	Reconstruction	HPC	[illegible]	Deleted	HPC	[illegible]	In the schedule B-6-b(a) (ii) page no. 34 serial no. 42 the HPC was proposed for reconstruction but the existing structure was found in good condition and reconstruction was not required, hence the existing structure was retained. Recommended for (-ve) negative change of scope for HPC 1x1200mm.	
36	83	22/2	53+494	Retained	HPC	1 x1.20	Widening	HPC	1 X 1.20mtr	In the schedule B-6-b(a) (ii) page no. 37 serial no. 05 the HPC was retained and the existing structure was found in good condition, having carriageway less than 7.5m hence widening done for 20.50mtr width. It is recommended to consider widening for (+)ve positive change of scope.	
37	85	21/10	54+485	Reconstruction	HPC	1x1.20	Widening	HPC	1 X 0.900mtr	In the schedule B-6-b(a) (ii) page no. 34 serial no. 43 the HPC was proposed for reconstruction but the existing structure was found in good condition having carriageway width less than 7.5 meter. Hence widening done for 20.5Mtr. It is recommended to consider as a (-ve) negative for reconstruction of existing structure	
38	88	14/8	55+914	Reconstruction	HPC	1 X 1.20	Widening	HPC	1 X 1.00 mtr	In the schedule B-6-b(a) (ii) page no. 34 serial no. 44 the HPC was proposed for reconstruction but the existing structure was found in good condition having carriageway width less than 7.5 meter. Hence widening done for 20.5Mtr. It is recommended to consider as a (-ve) negative for reconstruction of existing structure.	
39	91	Extra	56+350	-	-	-	Widening	HPC	1 X 0.90 meter	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12 mtr. of scope for widening. It is recommended to consider as a Positive change of scope for widening.	
40	98	Extra	61+768	-	-	-	Widening	HPC	1 X 0.90 mtr	Not Mention in Schedule A & B. But found at site having carriageway width less than 7.5 meter. Hence widening done for 12 Mtr. It is recommended to consider as a Positive change of scope for widening.	

41	99	Extra	62+065	-	-	-	Widening	HPC	1 X 1.00	Not Mention in Schedule A & B, But found 1x1.00HPC [illegible]
[illegible]	[illegible]	[illegible]	[illegible]	-	-		[illegible]	[illegible]	[illegible]	[illegible] recommended to consider as a Positive change of scope for widening.
[illegible]	[illegible]	[illegible]	[illegible]	-	-		[illegible]	[illegible]	[illegible]	[illegible] defined [illegible] culvert was required. It is recommended to consider as a Positive change of scope for HPC 1x1200.
43	100	12/2	64+050	Reconstruction	- HPC	1x1200-	Deleted	-	-	In the schedule B-6-b(a) (ii) page no. 35 serial no. 46 the HPC was proposed for reconstruction but reconstruction was not required, as such there was no defined nala /stream at site. Recommended for (-ve) negative change of scope for HPC 1x1200).
44	113	Extra	71+254	-	-	-	New Construction	HPC	1 X 1.20mtr	Not Mention in Schedule A & B. There was defined natural stream hence at, culvert was required. It is recommended to consider as a Positive change of scope for HPC 1x 1200.

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Annexure 11: Project Photos

ऊब नदी

SHREM FINANCIAL PRIVATE LIMITED

Development of Nadiad –Madhudha – Kathlal - Kapadwanj – Bayad – Modasa in the state of Gujarat on DBFOT on Annuity Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
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Development of Nadiad –Madhudha – Kathlal - Kapadwanj – Bayad – Modasa in the state of Gujarat on DBFOT on Annuity Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Nadiad-Modasa	01	February 2021	Technical Due Diligence Report

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Nadiad Modasa Tollways Limited (herein after referred to as the "**Concessionaire**") had augmented the existing two lane road of Nadiad- Modasa section of SH-59 in the State of Gujarat, in accordance with the provisions of the Concession Agreement executed on 5th January 2012 with Roads and Buildings Department of the Government of Gujarat (herein after referred to as the "**R&BD, GOG)** on DBFOT Annuity basis.

The Project Highway starts at Km. 0+600 and ends at Km. 109+000 passing through Nadiad, Kathlal, Kapadvanj, Bayad, Dhansura and Modasa in the state of Gujarat on Design, Build, Finance, Operate & Transfer (DBFOT)Annuity basis. Project location map is provided at **Figure 1.1.**

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL Nadiad Modasa Tollways Limited vide agreement dated 26.03.2018.

SHREM FINANCIAL PRIVATE LTD (SFPL). appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period and additional road safety requirements, if any.

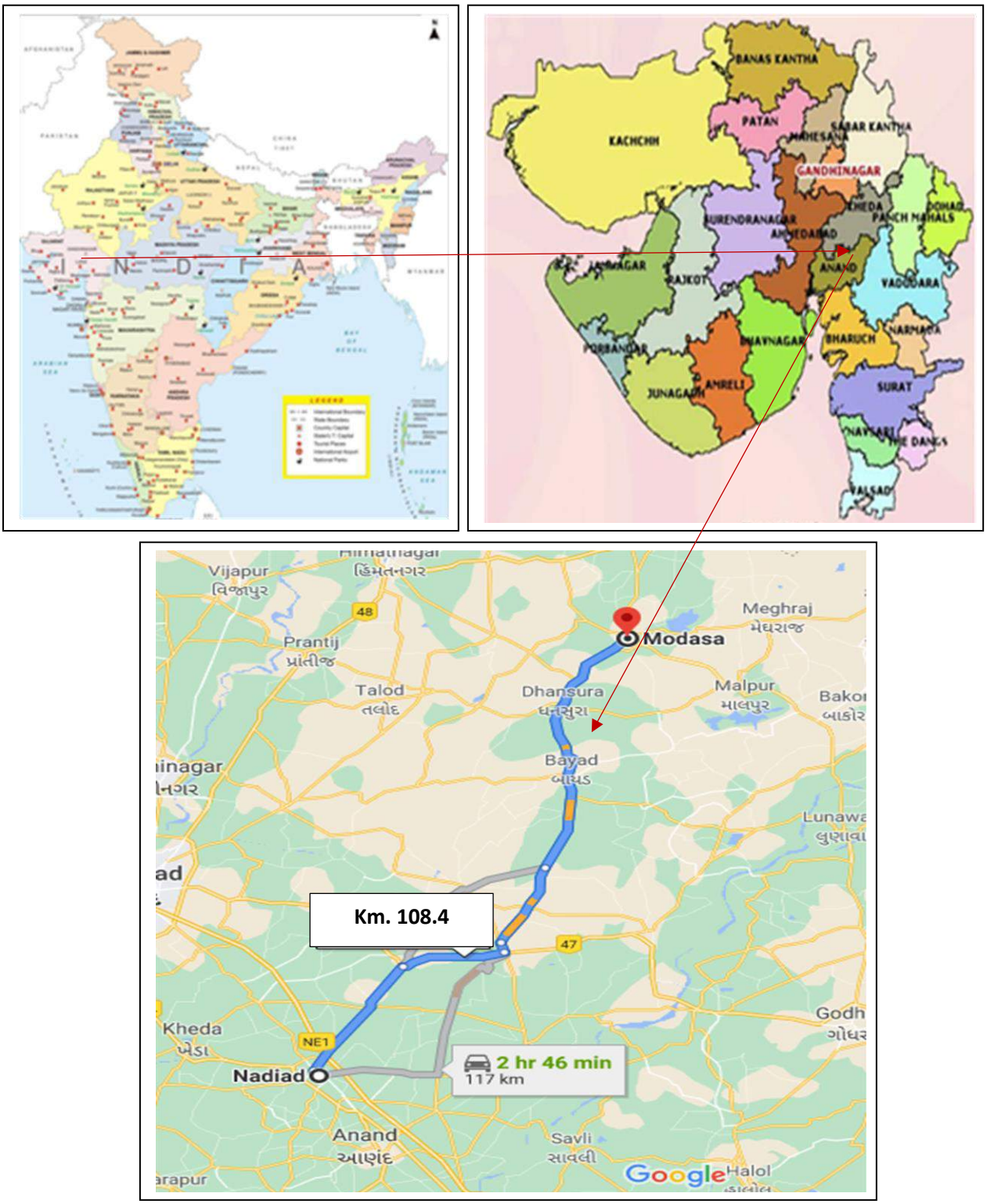

Figure 1.1: Project Location Map

1.2 The Project Data

Table 1.1: The Project Data

S. No.	Particulars	Details
1.	Name of the project	Two Laning of the Section Nadiad –Madhudha – Kathlal - Kapadwanj – Bayad – Modasa from Km. 0+600 to Km. 109+000 on SH-59 in the State of Gujarat on DBFOT on Annuity basis
2.	Road Type	State Highway (SH-59)
3.	Name of the Authority	Roads and Buildings Department, the Government of Gujarat.
4.	Name of the Concessionaire	DBL Nadiad – Modasa Tollways Ltd.
5.	Name of the EPC Contractor	Dilip Buildcon Limited
6.	Design length as per Schedule B of CA	108.400 Kms.
7.	Actual length constructed	108.400 Kms.
8.	Project lane configuration	2 Lane
9.	EPC cost	189.41 Cr
10.	Nature of contract	DBFOT (Annuity)
11.	Toll collected by	Roads & Building Department, Government of Gujarat
12.	Concession period	13 years from the appointed date
13.	Appointed date	03.07.2012
14.	Concession End Date	02.07.2026
15.	Construction period	730 days from the appointed date.
16.	Schedule completion date	03.07.2014
17.	Date of issuance of provisional certificate (Commercial operation date)	31.12.2013
18.	Date of issuance of completion certificate	29.03.2014
19.	Annuity amount (every six months)	17.46 Cr
20.	Total number of annuities payable	22 No's
21.	First annuity payment date	03.01.2015
22.	Total number of annuity paid	13 No's

1.3 Scope of consultancy services

The scope of work includes providing Technical Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents

- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	As per COS*	As per Site
1	Total project length	108.40 Kms.	---	108.40 Kms.
2	Four lane divided carriageway	7.370 Kms.	---	7.370 Kms.
3	Two lane with paved shoulder	101.03 Kms.	---	101.03 Kms.
4	Rigid pavement-two lane with paved shoulder	---	---	---
5	Flexible pavement	108.40 Kms.	---	108.40 Kms.
6	Toll plaza	---	1 No.	1 No.
7	Bus bays / Bus shelters	36 Nos.	---	36 Nos.
8	Truck lay bays	4 Nos.	-4 Nos.	---
9	Major junctions	9 Nos.	---	9 Nos.
10	Minor junctions	58 Nos.	---	58 Nos.
11	Number of Major Bridges (Retain & Repair)	7 Nos.	---	7 Nos.
12	Number of Minor Bridges	13 Nos.	---	14* Nos.
13	Number of Pipe Culverts	73 Nos.	--	72* Nos.
14	Number of Box/Slab Culverts	31 Nos.	---	32* Nos.

* As per site requirement one Box culvert is converted into Minor Bridge, two Pipe Culverts are converted into slab culverts and one additional pipe Culvert is constructed due to site condition.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section schedule as shown below, during the construction.

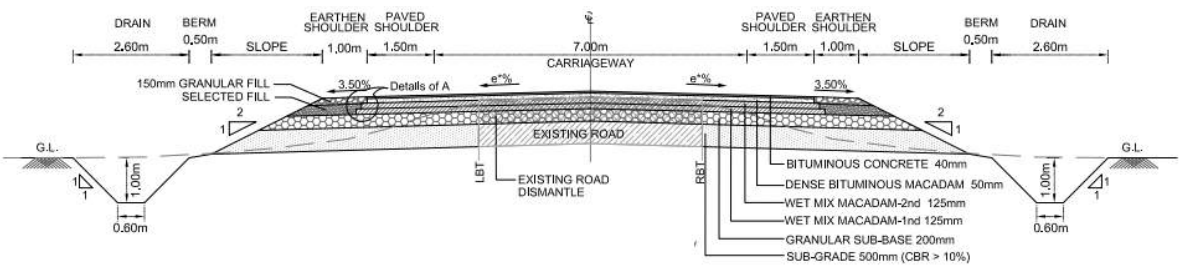

Figure 2.1: (TCS 1) 2-Lane carriageway with Paved shoulder (Concentric widening)

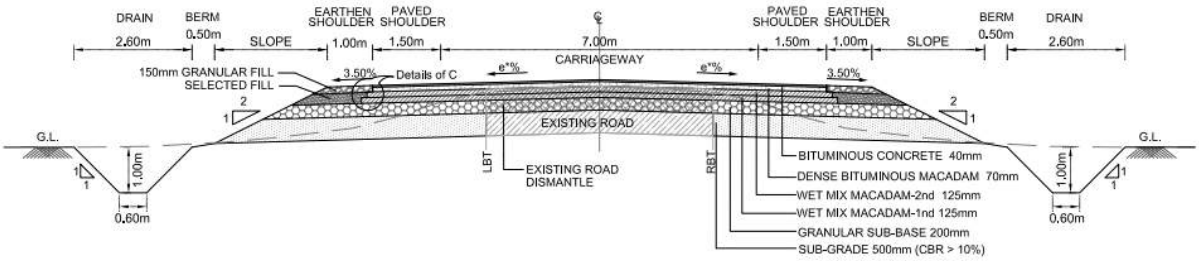

Figure 2.2: (TCS 2) 2-Lane carriageway with paved shoulders (Concentric widening/reconstruction)

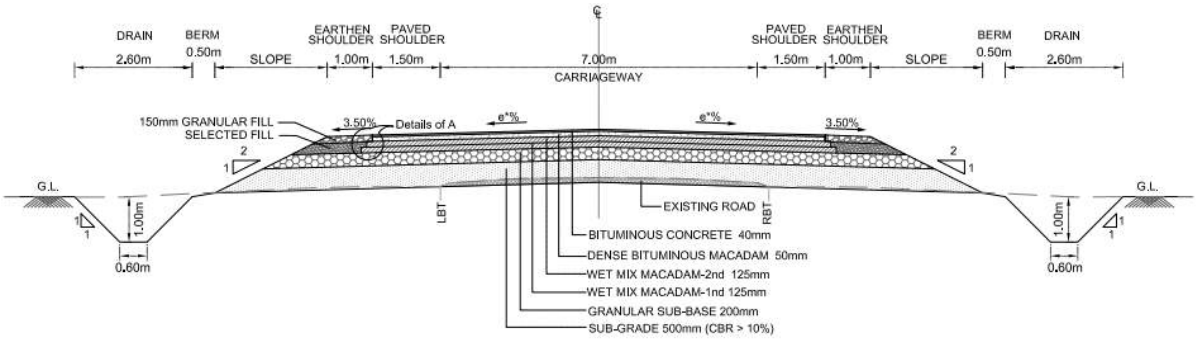

Figure 2.3: (TCS 5) 2-Lane Carriageway with paved shoulders (Reconstruction in Submergence area)

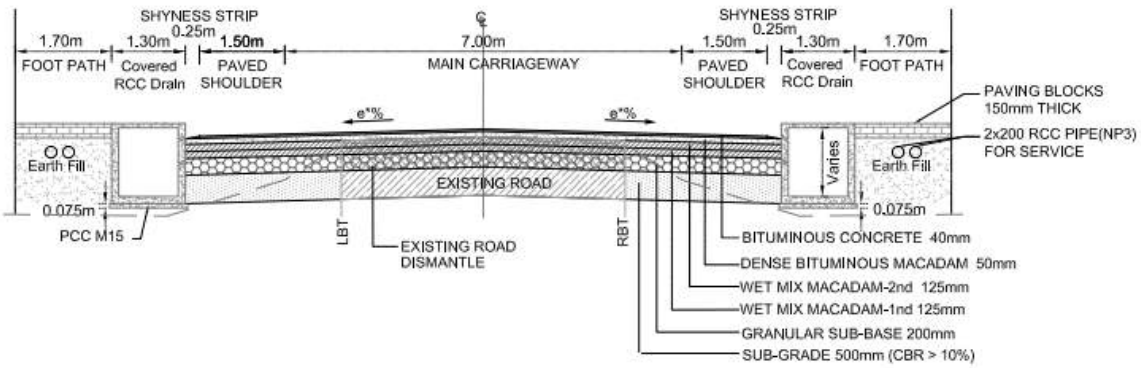

Figure 2.4: (TCS 7) 2-Lane Carriageway (With paved shoulder) with footpath in built-up section

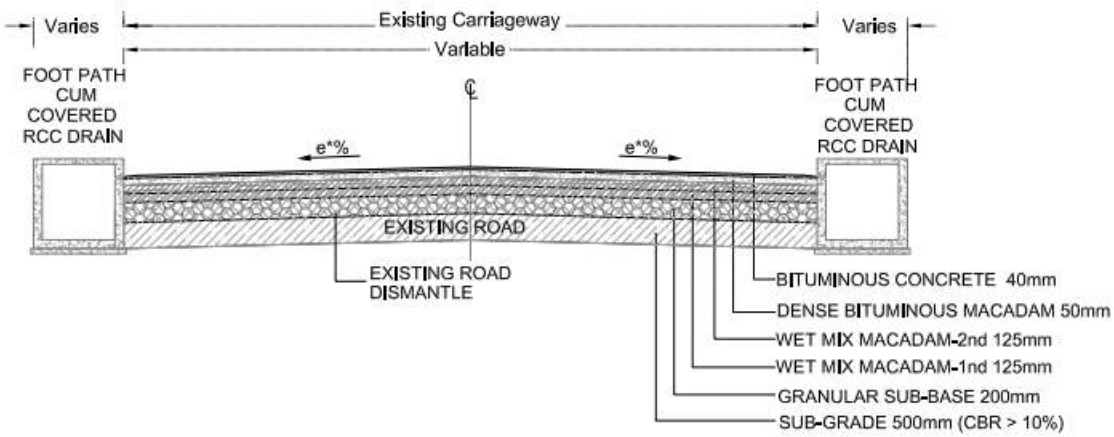

Figure 2.5: (TCS 8A) Overlay on existing road

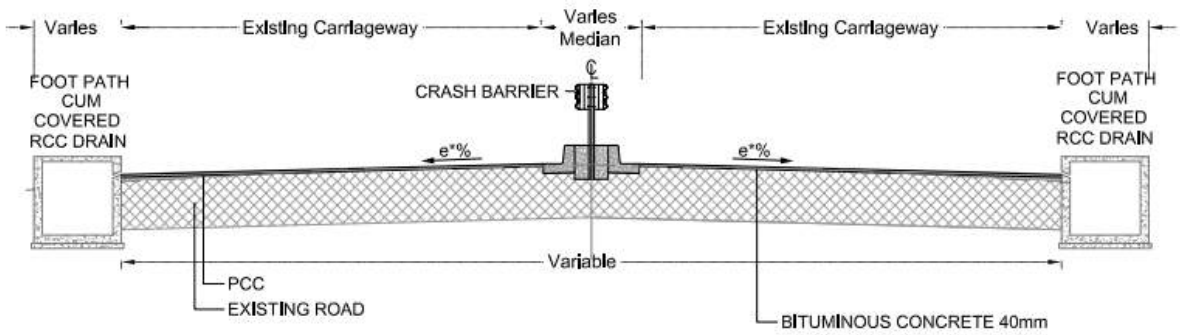

Figure 2.6: (TCS 9A) 4-Lane Divided Carriageway (Only Maintenance)

TCS schedule is provided below.

Table 2.2: TCS Schedule

S. No.	Chainage (Km.)		Length (Kms.)	Type of TCS
	From	To		
1	0+600	1+300	0.70	TCS8A
2	1+300	2+300	1.00	TCS9A
3	2+300	3+250	0.95	TCS8A
4	3+250	4+100	0.85	TCS8A
5	4+100	4+700	0.60	TCS5
6	4+700	5+600	0.90	TCS1
7	5+600	10+800	5.20	TCS5
8	10+800	16+010	5.21	TCS1
9	16+010	17+100	1.09	TCS7
10	17+100	25+250	8.15	TCS1
11	25+250	26+050	0.80	TCS8A
12	26+050	27+710	1.66	TCS9A
13	27+710	33+350	5.64	TCS1
14	33+350	33+700	0.35	TCS7
15	33+700	37+380	3.68	TCS1
16	37+380	37+750	0.37	TCS7
17	37+750	40+900	3.15	TCS1
18	40+900	41+550	0.65	TCS7
19	41+550	42+620	1.07	TCS1
20	42+620	42+950	0.33	TCS8A
21	42+950	44+750	1.80	TCS9A
22	44+750	45+400	0.65	TCS8A
23	45+400	45+950	0.55	TCS7
24	45+950	62+150	16.20	TCS1
25	62+150	62+450	0.30	TCS2
26	62+450	64+680	2.23	TCS1
27	64+680	64+900	0.22	TCS7
28	64+900	67+100	2.20	TCS1
29	67+100	68+070	0.97	TCS8A

S. No.	Chainage (Km.)		Length (Kms.)	Type of TCS
	From	To		
30	68+070	74+750	6.68	TCS1
31	74+750	75+850	1.10	TCS9A
32	75+850	76+650	0.80	TCS7
33	76+650	78+450	1.80	TCS1
34	78+450	78+650	0.20	TCS7
35	78+650	81+360	2.71	TCS1
36	81+360	81+670	0.31	TCS7
37	81+670	89+800	8.13	TCS1
38	89+800	90+950	1.15	TCS7
39	90+950	96+000	5.05	TCS1
40	96+000	96+560	0.56	TCS9A
41	96+560	105+780	9.22	TCS1
42	105+780	106+300	0.52	TCS8A
43	106+300	107+550	1.25	TCS9A
44	107+550	108+500	0.95	TCS8A
45	108+600	109+000	0.40	TCS7

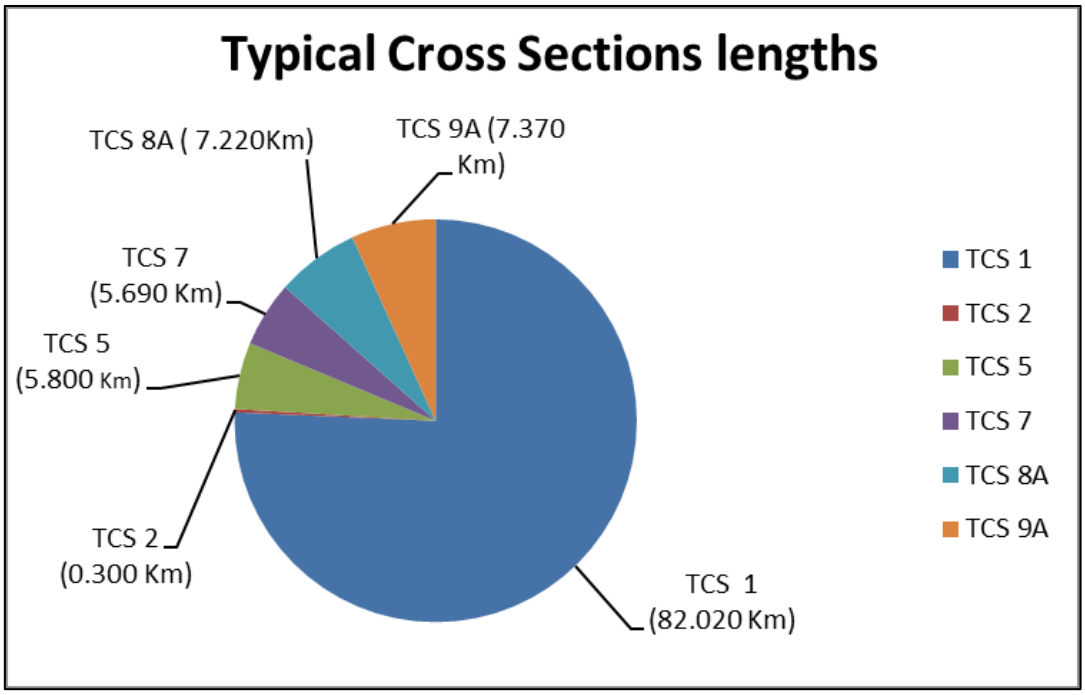

Figure 2.7: Typical Cross Section followed in the Project road

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.5 Bypass/Realignment

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of CA.

2.6 Intersections

As per provisions of Schedule B of CA, 9 Major Junctions and 58 Minor Junctions are provided. Details are given below.

Table 2.3: List of Junctions

S. No.	Chainage (Km.)	Type of junction	Lead to
Major Junctions			
1	15+782	T	Ahmedabad
2	15+930	T	Dakor
3	26+052	+	LHS: Ahmedabad RHS: Balasinor
4	43+180	T	Modasa
5	43+976	T	Dakor
6	56+180	T	Dakor
7	75+490	T	Ahmedabad
8	90+320	+	LHS: Ahmedabad RHS: Dhansura
9	108+450	T	Himmat nagar
Minor Junctions			
1	0+650	T	Kheda
2	0+850	Y	Modasa
3	1+300	T	Manjipura
4	2+285	+	Dhaban Expressway
5	5+960	T	Davapura
6	6+600	T	Sihunj
7	9+650	+	LHS: Bagdu RHS: Vina
8	11+780	+	LHS: Sihunj RHS: Mangalpura
9	16+420	T	Mahudha
10	17+380	Y	Finav
11	18+932	T	Ramna
12	21+302	+	LHS: Vadhtal RHS: Minavada
13	24+082	T	Bhaner

S. No.	Chainage (Km.)	Type of junction	Lead to
14	27+030	T	Kathlal
15	27+250	T	Jamni
16	29+875	+	LHS: Vavana RHS: Porda
17	31+260	T	Bhatera
18	33+535	T	Torna
19	36+530	Y	Dasalvada
20	37+200	+	LHS: Aantroli RHS: Fatiabad
21	41+160	T	Mohamedpur
22	43+480	+	LHS: Kapadvanj RHS: Kapadvanj
23	43+795	T	Kapadvanj
24	44+205	T	Dondara
25	49+165	T	Sonipura
26	50+045	T	Vadali
27	53+655	T	Vanzariya
28	55+455	T	Dudhachal
29	57+710	T	Reliya
30	59+975	T	Chuptia
31	62+205	+	LHS: Kavath RHS: Batasinor
32	63+995	T	Navi Barol
33	65+110	T	Barol
34	67+430	T	Demai
35	67+755	T	Modpura
36	70+185	T	Harjipura
37	71+550	T	Salhanbha
38	71+570	T	Madha Kampa
39	71+835	T	Barmath
40	75+020	T	Bayad
41	79+975	T	Vatrak
42	82+325	T	Local
43	84+590	T	Hirapura
44	85+990	T	Karoli
45	88+155	T	Kanjari
46	89+360	T	Maipur
47	90+900	T	Dalpur
48	94+330	T	Antisara
49	95+440	+	Sika
50	97+000	T	Hindupura
51	97+240	T	Rahiyol
52	98+100	T	Kodi

S. No.	Chainage (Km.)	Type of junction	Lead to
53	102+780	T	Kolikhad
54	103+330	T	Meghraj
55	104+380	T	Pahadpur
56	105+120	+	LHS: Modasa RHS:Modasa
57	106+295	T	Modasa
58	106+640	T	Meghraj

2.7 Grade Separated Structures and underpasses

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.8 Road Over Bridge

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Summary of the Carriageway Details

Table 2.4: Summary of Carriageway Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
1	2 Lane with Paved Shoulder	82.02	---	TCS-1: of Schedule B of CA
2	2 Lane with Paved Shoulder	0.3	---	TCS-2: of Schedule B of CA
3	2 Lane with Paved Shoulder	5.8	---	TCS-5: of Schedule B of CA
4	2 Lane with Paved Shoulder	6.09	---	TCS-7: of Schedule B of CA
5	Overlay on Existing road	6.82		TCS-8A: of Schedule B of CA
6	4-Lane Divided Carriageway road	7.37		TCS-9A: of Schedule B of CA
	Total length of the project	108.4		
	TYPE OF ALIGNMENT			
1	New alignment	---	---	---
2	Widening	88.41		
3	Overlay & Strengthening	14.19	---	---
4	Reconstruction	5.8	---	---
	Total length of the project	108.4	---	---

2.10 Summary of Bridges and Culverts

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures:

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Remarks
1	Retained			25	5	
2	Widening	7	6	27	16	
3	Reconstruction			20	10	

S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts	Remarks
4	New		7			
5	Improvement					
	Total	**7**	**13**	**72**	**31**	

2.11 Toll Plazas

As per Schedule C of the CA provisions one Toll Plaza has been constructed at Km. 80+680. Salient features of Toll Plaza are provided below.

- Each side comprises of two normal lanes, one extra wide lane and one bike lane.
- The lane width in normal lanes is 3.20m and Normal lane is 4.5m.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting system.
- Cameras are installed and monitored in administrative building.

2.12 Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 36 locations. Details are provided below.

Table 2.6: Bus shelters details

S. No.	Chainage (Km.)	Side	Remarks	S. No.	Chainage (Km.)	Side	Remarks
1	0+410	LHS	Nadiad	19	46+040	RHS	Kapadvanj
2	3+3700	LHS	Nadiad	20	62+050	LHS	Kampa
3	3+420	RHS	Nadiad	21	62+550	RHS	Kampa
4	5+230	BOTH	Bilodra	22	64+560	LHS	Boral
5	15+860	LHS	Mahuda	23	65+000	RHS	Boral
6	17+230	RHS	Muvada	24	67+030	LHS	Demai
7	25+160	BOTH	Kathlal	25	68+210	RHS	Demai
8	27+840	RHS	Kathlal	26	74+610	LHS	Bayad
9	27+900	LHS	Kathlal	27	76+800	LHS	Bayad
10	33+230	LHS	Hirapur	28	76+930	RHS	Bayad
11	33+810	RHS	Hirapur	29	78+320	LHS	Vatrak
12	34+980	LHS	Udapura	30	78+880	RHS	Vatrak
13	35+580	RHS	Udapura	31	81+250	LHS	Halavacamp
14	37+270	LHS	Dashavada	32	81+790	RHS	Halavacamp
15	37+840	RHS	Dashavada	33	89+670	LHS	Dansura
16	40+710	RHS	Mahanandpur	34	91+100	RHS	Dansura
17	40+840	LHS	Mahanandpur	35	105+580	LHS	Modasa
18	42+540	LHS	Kapadvanj	36	107+820	RHS	Modasa

2.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign boards, Pavement Markings, Overhead signs, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA
- Landscaping: provided along the project road within ROW and in the islands of at grade intersections and being maintained
- Tree plantation: Tree plantation is provided on both sides of the project corridor all along the way and being maintained
- Medical Aid Post: Provided at toll plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza locations and is functional.

Km. 0+600 Starting Point

Km. 3+200 Bus Stand

Km. 33+200 Bus Stop

Km. 81+350 Bus Stop

Overhead sign at junction at Km. 1+300

Figure 2.8: Photos Representing Facilities

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below.

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain Terrain
2	Land Use	Predominantly Agriculture
3	Two lane length	101.03 Kms.
4	Four lane length	7.37 Kms.
5	Earthen shoulder	1.0 m to 1.5 m width on site
6	Junctions	09 Nos. Major junctions and 58 Nos. Minor junctions
7	Toll Plaza	Km. 80+680
8	Sign boards	Sign boards are provided as per Highway requirements
9	Road Markings	Lane markings are provided as per Highway requirement
10	Bus Bays /shelters	36 Nos.
11	Street Lighting	Provided as per requirement
12	Avenue plantation	Provided

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement

condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good and fair. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below

Table 3.3: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms)	Condition
0+600	50+000	49.4	Good
50+000	90+000	40.0	Fair
90+000	109+000	19.0	Good

Km. 0+600

Km. 20+000

Km. 9+580

Km. 29+605

Figure 3.1: Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The Details of structures along the project highway are listed below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	07
2	Minor Bridge	14
3	Pipe culverts	72
4	Slab/Box Culverts	32

The superstructure for major bridge is of RCC Girder and RCC slab type resting on RCC wall type piers and abutments with open foundation. The minor bridges of superstructure are RCC solid slab and the substructures are of RCC/PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.**

The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

1. The total length of the major bridge at Km. 5+460 is 83.0m with 5 spans. The superstructure consists of RCC solid slab. Each pier and whereas abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

2. The total length of the major bridge at Km. 39+550 is 110.0m with 5 spans. The superstructure consists of RCC Girder. Each pier and whereas abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are Strip seal type. RCC railings have been provided on both sides of the deck.

3. The total length of the major bridge at Km. 41+730 is 98.0 m with 4 spans. The superstructure consists of RCC Girder. Each pier and whereas abutment is regular RCC wall type abutment. Open foundations have been constructed for all piers and abutments. Superstructure is seated on Elastomeric bearings. Expansion joints are Strip seal type. RCC railings have been provided on both sides of the deck.

4. The total length of the major bridge at Km. 59+225 is 60.0 m with 8 spans. The superstructure is arch type. Each pier and abutment are of regular RCC wall type abutment with open foundation.

Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

5. The total length of the major bridge at Km. 73+100 is 62 m with 6 spans. The superstructure consists of RCC Girder. Each pier and abutment are of regular RCC wall type abutment with open foundation.. Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

6. The total length of the major bridge at Km. 79+020 is 158.20 m with 9 spans. The superstructure consists of RCC Girder. Each pier and abutment are of regular RCC wall type abutment with open foundation.. Superstructure is seated on pot bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

7. The total length of the major bridge at Km. 99+350 is 63.75 m with 3 spans. The superstructure consists of RCC Girder. Each pier and abutment are of regular RCC wall type abutment with open foundation.. Superstructure is seated on Elastomeric bearings. Expansion joints are Strip seal type. RCC railings have been provided on both sides of the deck.

Table 4.2: List of Major Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)
1	5+460	3 x 21.0 + 2 x 10.0	83.00
2	39+550	5 x 22.0	110.0
3	41+730	4 x 24.50	98.00
4	59+225	8 x 7.6	60.80
5	73+100	6 x 12.0	72.00
6	79+020	1 x 11.4 + 7 x 19.5 +1 x 10.3	158.20
7	99+350	3 x 21.25	63.75

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out at few locations.

Km. 5+460

Km. 39+550

Figure 4.1: Overall view of the Major bridges

4.4 Details of Minor Bridges

The details of Minor bridges in the project stretch are listed below. The type of superstructure for minor bridges is RCC Girder type, solid slab and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all the Minor bridges.

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	4+924	1 x 14.40	14.40	MNB has RCC Girder type structure. It has RCC crash barrier, bituminous wearing coat, strip seal type

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
				expansion joints with elastomeric bearings.
2	9+633	2 x 4.50	9.00	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
3	12+965	5 x 3.30	16.50	MNB has RCC solid slab superstructure supported on CRM wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
4	17+356	1 x 10.20	10.20	MNB has RCC solid slab superstructure supported on RCC wall type abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
5	21+856	4 x 5.65	22.60	MNB has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
6	36+330	3 x 10.00	30.00	MNB has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
7	54+561	2 x 7.30	14.60	MNB has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
8	58+564	2 x 7.00	14.00	MNB has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
9	66+149	4 x 3.00	12.00	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
10	68+105	1 x 30.40	30.40	MNB has PSC Girder type structure. It has RCC crash barrier, bituminous wearing coat, Strip seal type expansion joints with elastomeric bearings.
11	74+528	1 x 22.50	22.50	MNB has RCC Girder type structure. It has RCC crash barrier, bituminous wearing coat, Strip seal type expansion joints with elastomeric bearings.
12	82+629	3 x 7.30	21.90	Arch MNB has been widened with Continuous RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
13	91+153	2 x 3.50	7.00	It has been widened with RCC Box structure. It has RCC crash barrier, bituminous wearing coat..
14	93+788	1 x 14.00	14.00	MNB has RCC solid slab superstructure supported on RCC wall type abutment. Other features are RCC crash barrier, bituminous wearing coat, and elastomeric Bearings and strip seal type expansion joints.

Km. 58+564

Km. 68+105

Km. 4+924

Km. 9+633

Km. 36+330

Figure 4.2: Overall view of the Minor Bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections.

4.5.1. Slab/Box Culverts

The details of the Slab/Box culverts along the project highway are as given below.

Table 4.4: List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m)
1	1+096	2 x 2.30
2	1+277	1 x 2.50
3	3+761	1 x 1.50
4	4+455	1 x 1.50
5	5+933	1 x 4.40
6	9+075	1 x 1.50
7	10+683	1 x 6.00
8	12+190	1 x 1.55
9	14+400	1 x 1.60
10	15+940	1 x 2.70
11	16+875	1 x3.00
12	17+250	1 x3.00
13	25+835	1 x3.00
14	27+795	1 x3.00
15	41+310	1 x 4.00
16	44+840	1 x 2.00
17	47+930	2 x 3.00
18	50+313	1 x 5.00
19	51+404	1 x 4.00
20	59+914	1 x 4.00

S. No.	Chainage (Km.)	Span (m)
21	60+515	1 x 4.00
22	64+327	2 x 3.00
23	65+832	1 x 4.60
24	67+236	1 x 3.00
25	81+861	3 x 1.25
26	82+063	1 x 6.00
27	92+563	2 x 2.80
28	94+900	2 x 1.80
29	96+232	1 x 2.80
30	96+578	2 x 1.30
31	103+792	1 x 2.50
32	104+164	1 x 2.90

4.5.2. Condition of the Slab/Box Culverts

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 5+933

Km. 50+313

Km. 60+515

Figure 4.3: Representative photos for Box/Slab culverts

4.5.3. General Description of the Pipe Culverts

The details of the Pipe culverts are as given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	Span (m)	S. No.	Chainage (Km.)	Span (m)
1	1+332	1 x 0.9	37	65+056	1 x 1.2
2	2+493	1 x 1.2	38	66+038	2 x 0.9
3	3+696	2 x 1.2	39	66+694	1 x 1.2
4	3+887	1 x 1.2	40	67+175	1 x 1.2
5	3+903	2 x 0.9	41	69+133	1 x 1.0
6	3+931	2 x 1.2	42	69+950	1 x 1.0
7	5+925	1 x 1.2	43	70+472	1 x 1.0
8	6+330	1 x 1.2	44	76+737	1 x 1.2
9	6+413	1 x 1.2	45	77+393	1 x 1.2
10	11+174	1 x 1.2	46	80+108	1 x 1.2
11	11+322	2 x 0.9	47	80+489	1 x 1.2
12	13+344	1 x 1.2	48	80+909	2 x 0.9
13	14+118	1 x 1.2	49	81+698	1 x 1.2
14	15+770	1 x 1.2	50	82+245	1 x 1.2
15	16+515	1 x 0.9	51	84+204	1 x 1.0
16	16+675	2 x 1.2	52	84+904	1 x 1.0
17	17+252	1 x 1.2	53	86+477	1 x 1.0
18	18+248	3 x 1.2	54	86+871	1 x 1.2
19	19+229	2 x 1.2	55	88+431	1 x 1.2
20	24+297	1 x 1.2	56	90+284	1 x 1.2
21	22+689	2 x 0.9	57	90+883	1 x 1.2
22	24+441	1 x 1.2	58	91+606	1 x 1.0
23	27+216	1 x 1.2	59	92+009	1 x 1.0
24	29+618	1 x 1.2	60	95+590	1 x 1.2
25	31+538	1 x 1.2	61	97+408	2 x 1.2

S. No.	Chainage (Km.)	Span (m)	S. No.	Chainage (Km.)	Span (m)
26	35+309	1 x 1.2	62	97+970	1 x 1.2
27	35+995	1 x 1.2	63	98+227	1 x 1.2
28	38+437	1 x 1.2	64	98+971	1 x 1.2
29	39+029	1 x 1.2	65	99+792	1 x 1.2
30	39+192	1 x 1.2	66	100+069	1 x 1.2
31	39+428	1 x 1.2	67	101+196	1 x 1.2
32	52+046	1 x 1.2	68	101+799	1 x 1.2
33	63+553	1 x 1.2	69	104+491	1 x 1.2
34	63+907	1 x 1.2	70	105+075	1 x 1.2
35	64+.013	2 x 1.2	71	105+898	1 x 1.2
36	64+761	1 x 1.2	72	106+285	1 x 1.2

4.5.4. Condition of the Pipe Culverts

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report, providing insights on design life of pavement, crust thickness, history of overlays over the existing pavement etc., Based on pavement condition and CA provisions recommendation for the upcoming renewal cycles.

5.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	HS-I Parameters	HS-II Parameters	HS-III Parameters
1	Sub Grade CBR (%)	10%	10%	10%
2	Design Life (Years)	8 years for BT* 15 years for granular	8 years for BT 15 years for granular	8 years for BT 15 years for granular
3	Actual Traffic (MSA)	8 MSA for 8 years 20.8 MSA 15 years	4 MSA for 8 years 8.9 MSA 15 years	18 MSA for 8 years 46.8 MSA 15 years
4	Design Traffic* (MSA)	10 MSA for BT 150 MSA for Granular	5 MSA for BT 150 MSA for Granular	18 MSA for BT 150 MSA for Granular
5	Surface course (BC)	40 mm	25 mm SDBC	40 mm
6	Binder course (DBM)	50 mm	50 mm	70 mm
7	Base course (WMM)	250 mm	250 mm	250 mm
8	Sub Base course (GSB)	200 mm	200 mm	200 mm

*BT-Bituminous Layer

5.2.1. Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 4.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Design Traffic calculations from 2020

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2020	3223	87	213	1192	3251	4743	5.84	5.84	6	Actual
2021	3384	91	224	1252	3414	4980	6.13	11.98	7	Projected
2022	3553	96	235	1314	3584	5229	6.44	18.42	8	Projected
2023	3731	101	247	1380	3763	5491	6.76	25.18	9	Projected
2024	3918	106	259	1449	3952	5765	7.10	32.29	10	Projected
2025	4113	111	272	1521	4149	6053	7.46	39.74	11	Projected
2026	4319	117	285	1597	4357	6356	7.83	47.57	12	Projected
2027	4535	122	300	1677	4574	6674	8.22	55.79	13	Projected
2028	4762	129	315	1761	4803	7008	8.63	64.43	14	Projected
2029	5000	135	330	1849	5043	7358	9.06	73.49	15	Projected

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 18.42 MSA, 73.49 MSA respectively, traffic projection with 5% growth rate. Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

5.3 Overlay during operation and maintenance

The base BT layers have been designed for MSA 10, 5 and 18 for HS-1, HS-2 and HS-3 respectively for 8 years (up to end of 2022). Granular layers designed for 150 MSA for HS-1, HS-2 & HS-3 for 15 years (up to end of 2029). This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic surveys, conduct BBD tests for evaluation of strength of pavement and required overlay. However, 6-7 years from COD and prior to end of concession period, overlay shall be laid as a good industrial practice.

5.3.1. Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement -Next Periodic Renewal will be proposed on or before 2026

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Road Furniture Condition

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	• Chevron Signs • Village sign boards • Information Boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		• Other Sign Boards • Gantry Sign Boards		
2	Road Marking	Studs &Lane marking	Available as per site requirement	Good
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly the object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

Km. 1+300

Km. 59+250

Km. 82+750

Km. 96+650

Km. 79+940

Km. 104+250

Figure 6.1 Representative photos during road safety audit

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plaza on the project road at Km. 80+680. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza buildings are G+1 floor building which houses control room, UPS and Pantry.

7.2 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.1: List of Vehicles

S. No.	Vehicle Type	No.
1	Patrol vehicle	1
2	Ambulance	1
3	Crane	1

Km. 80+680 at Toll Plaza

Figure 7.1 Representative photos of Toll Plaza

CHAPTER 8. OPERATION AND MAINTENANCE

8.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines..

8.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

8.3 Operations

8.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2 Carrying out preventive and periodic maintenance of the Project road;
3 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
4 Undertaking major maintenance such as resurfacing of pavements, repairs to structures;
5 Functioning of the lighting system;
6 Functioning of the Patrolling System
7 Functioning of rescue and medical aid services

8 Ambulance as and when required
9 Functioning of the Project Facilities
10 Administrative, Operational and Maintenance Base Camp
11 Truck Lay byes
12 Pickup Bus stops / Bus Bays
13 Protection of the environment and provision of equipment and materials therefore;
14 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
15 Complying with Safety Requirements in accordance with Article 18.

8.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles.

8.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

8.5.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

8.5.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

8.5.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 8.1: Schedule and status of for Periodic Maintenance

S. No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2026	Planned to Execute

8.5.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

8.6 Review of Test Reports

8.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Dec, 2020. As per Schedule K of CA, "If the stretch exceeds 2500 mm in a KM shall be rectified". No stretch exceeds the permissible limit.

8.6.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement. BBD Test is to be carried once in a year.

Concessionaire has conducted the test in Dec2019. The test report has been verified and found within permissible limits as per IRC 81.

8.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost of summary is given below, and detailed cost estimations are given in **ANNEXURE 4.**

Table 8.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses.	Total cost per year
2021	1.685	0.296		0.07	**2.05**
2022	1.735	0.305		0.07	**2.11**
2023	1.787	0.314		0.08	**2.18**
2024	1.841	0.324		0.08	**2.24**
2025	1.896	0.333		0.08	**2.31**
2026	1.953	0.343	24.80	0.08	**27.18**
2027	0.513	0.090		0.02	**0.62**
Total	**13.05**	**2.29**	**24.80**	**0.55**	**40.69**

CHAPTER 9. REVIEW OF CONCESSION AGREEMENT

9.1 Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- construction of the Project Highway on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D
- operation and maintenance of the Project Highway in accordance with the provisions of Concession Agreement (CA)
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental thereto.

9.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5.**

9.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Shall provide applicable permits as per the CA

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Substitution Agreement
- Procured all applicable permits specified in Schedule E
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

9.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project Highway to the Authority upon termination of the CA

9.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date

9.5.1. Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

9.6 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Provisional Completion Certification is attached in **ANNEXURE 6.**

9.6.1. Completion Certificate (Clause 14.4.2)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate is provided in **ANNEXURE 7.**

9.7 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service

9.8 Change of scope (Article 16)

Change of Scope proposal initiated and consented by the Authority are provided at **ANNEXURE 9**.

9.9 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project Highway
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements.
- Preventing any unauthorized use of the Project Highway.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

9.10 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project Highway conforms to the maintenance requirements set forth in Schedule K (the "**Maintenance Requirements**").

9.10.1. Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

9.10.2. Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

9.10.3. Damages for breach of Maintenance Obligations (Clause 17.8)

In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, @ 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

9.10.4. Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

9.11 Annuity (Clause 25.1)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule NY of CA the sum of Rs. 17.46 Crores.

As per Clause 25.2.1, In case the COD is different from the Schedule Y of CA, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 9.1: Status of Annuity Payments

S. No.	Particulars	Annuity Date	Payment Paid on
1	1st Annuity	03.01.2015	20-Jan-15
2	2nd Annuity	03.07.2015	24-Jul-15

S. No.	Particulars	Annuity Date	Payment Paid on
3	3rd Annuity	03.01.2016	12-Jan-16
4	4th Annuity	03.07.2016	11-Jul-16
5	5th Annuity	03.01.2017	13-Jan-17
6	6th Annuity	03.07.2017	10-Jul-17
7	7th Annuity	03.01.2018	6-Jan-18
8	8th Annuity	03.07.2018	7-Jul-18
9	9th Annuity	03.01.2019	4-Jan-19
10	10th Annuity	03.07.2019	4-Jul-19
11	11th Annuity	03.01.2020	12-Jan-20
12	12th Annuity	03.07.2020	6-Jul-20
13	13th Annuity	03.01.2021	11-Jan-21

9.12 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs. 1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year
- Yearly the Concessionaire is paying the Concession Fee to the Authority

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9.13 Change in Law (Article 36)

If as a result of Change in law the Concessionaire suffers an increase in cost or reduction in net after tax return or other financial burden, the aggregate financial effect of which exceeds Rs.50 Lakhs or 0.5% of the Total Project Cost whichever is higher in any accounting year, the Concessionaire may so notify the Authority and propose amendments to the Agreements so as to place the Concessionaire in the same financial position as it would have enjoyed had there been no such Change in law resulting in the cost increase, reduction in return or other financial burden as aforesaid along with required justification to substantiate the claim notified.

CHAPTER 10. INSURANCE

10.1 Details of Insurance

As per clause 27.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 8**. Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 10.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Ltd	321300441910 001987	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier
Employees Compensati on Insurance Policy	The New India Assurance Co Ltd	450100361901 00000061	31.01.2020	30.01.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 11. CONCLUSION

11.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

11.2 Pavement Condition

Pavement condition is good. Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations. Shoulder condition is fair.

11.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

11.4 Project Facilities

Toll Plaza is located at Km. 80+680 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in good condition. Medical Aid posts found in functional condition. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

11.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards is good. Other road appurtenances like metal beam crash barriers and Kerb are intact.

11.6 Maintenance:

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently a3nd next MM is scheduled in the year 2026.

11.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexure 1: Pavement Condition

Condition/Quality: G=Good, F=Fair, P=Poor, VP=Very poor & D Damaged Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P/VP)		Composition	Condition (F/P/D)		Type (LD/ULD/CD/NO)	Condition (PF/F)
0+000	1+000								G		P+E	F		ULD	PF
1+000	2+000								G		P+E	F		ULD	PF
2+000	3+000								G		P+E	F		ULD	PF
3+000	4+000								G		P+E	F		ULD	PF
4+000	5+000								G		P+E	F		ULD	PF
5+000	6+000								G		P+E	F		ULD	PF
6+000	7+000								G		P+E	F		ULD	PF
7+000	8+000								G		P+E	F		ULD	PF
8+000	10+000								G		P+E	F		ULD	PF
10+000	11+000								G		P+E	F		ULD	PF
11+000	12+000								G		P+E	F		ULD	PF
12+000	13+000								G		P+E	F		ULD	PF
13+000	14+000								G		P+E	F		ULD	PF
14+000	15+000								G		P+E	F		ULD	PF
15+000	16+000								G		P+E	F		ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality			Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P /VP)	Pavement Edge Drop (cm)	Composition	Condition (F/P/D)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
16+000	17+000								G		P+E	F		CD	F
17+000	18+000								G		P+E	F		CD	F
18+000	19+000								G		P+E	F		ULD	PF
19+000	20+000								G		P+E	F		ULD	PF
20+000	21+000								G		P+E	F		ULD	PF
21+000	22+000								G		P+E	F		ULD	PF
22+000	23+000								G		P+E	F		ULD	PF
23+000	24+000								G		P+E	F		ULD	PF
24+000	25+000								G		P+E	F		ULD	PF
25+000	26+000								G		P+E	F		CD	F
26+000	27+000								G		P+E	F		CD	F
27+000	28+000								G		P+E	F		ULD	PF
28+000	29+000								G		P+E	F		ULD	PF
29+000	30+000								G		P+E	F		ULD	PF
30+000	31+000								G		P+E	F		ULD	PF
31+000	32+000								G		P+E	F		ULD	PF
32+000	33+000								G		P+E	F		ULD	PF
33+000	34+000								G		P+E	F		ULD	PF
34+000	35+000								G		P+E	F		CD	F

Chainage (Km.)		Pavement Condition						Riding Quality			Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P/VP)	Pavement Edge Drop (cm)	Composition	Condition (F/P/D)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
35+000	36+000								G		P+E	F		ULD	PF
36+000	37+000								G		P+E	F		ULD	PF
37+000	38+000								G		P+E	F		CD	F
38+000	39+000								G		P+E	F		CD	F
39+000	40+000								G		P+E	F		ULD	PF
40+000	41+000								G		P+E	F		ULD	PF
41+000	42+000								G		P+E	F		ULD	PF
42+000	43+000								G		P+E	F		CD	F
43+000	44+000								G		P+E	F		CD	F
44+000	45+000								G		P+E	F		CD	F
45+000	46+000								G		P+E	F		CD	F
46+000	47+000								G		P+E	F		CD	F
47+000	48+000								G		P+E	F		ULD	PF
48+000	49+000								G		P+E	F		ULD	PF
49+000	50+000								G		P+E	F		ULD	PF
50+000	51+000				5	5			F		P+E	F		ULD	PF
51+000	52+000				5	4			F		P+E	F		ULD	PF
52+000	53+000				5	5			F		P+E	F		ULD	PF
53+000	54+000				5	4			F		P+E	F		ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P/VP)		Composition	Condition (F/P/D)		Type (LD/ULD/CD/NO)	Condition (PF/F)
54+000	55+000				5	5			F		P+E	F		ULD	PF
55+000	56+000				5	4			F		P+E	F		ULD	PF
56+000	57+000				5	3			F		P+E	F		ULD	PF
57+000	58+000				5	5			F		P+E	F		ULD	PF
58+000	59+000			1	5	5			F		P+E	F		ULD	PF
59+000	60+000				5	5			F		P+E	F		ULD	PF
60+000	61+000				5	5			F		P+E	F		ULD	PF
61+000	62+000				5	5			F		P+E	F		ULD	PF
62+000	63+000				5	5			F		P+E	F		ULD	PF
63+000	64+000				5	5			F		P+E	F		CD	
64+000	65+000				5	4			F		P+E	F		ULD	PF
65+000	66+000				5	4			F		P+E	F		CD	F
66+000	67+000				5	4			F		P+E	F		ULD	PF
67+000	68+000				5	5			F		P+E	F		ULD	PF
68+000	69+000				5	5			F		P+E	F		CD	F
69+000	70+000				5	5			F		P+E	F		ULD	PF
70+000	71+000				5	4			F		P+E	F		ULD	PF
71+000	72+000				5	4			F		P+E	F		ULD	PF
72+000	73+000				5	3			F		P+E	F		ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality			Shoulder			Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P /VP)	Pavement Edge Drop (cm)	Composition	Condition (F/P/D)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
73+000	74+000				5	5			F		P+E	F		ULD	PF
74+000	75+000				5	4			F		P+E	F		ULD	PF
75+000	76+000				5	5			F		P+E	F		ULD	PF
76+000	77+000				5	5			F		P+E	F		CD	F
77+000	78+000				5	4			F		P+E	F		CD	F
78+000	79+000				5	5			F		P+E	F		CD	F
79+000	80+000				5	5			F		P+E	F		CD	F
80+000	81+000				5	5			F		P+E	F		ULD	PF
81+000	82+000				5	4			F		P+E	F		ULD	PF
82+000	83+000				5	5			F		P+E	F		ULD	PF
83+000	84+000				5	5			F		P+E	F		ULD	PF
84+000	85+000				5	5			F		P+E	F		ULD	PF
85+000	86+000				5	4			F		P+E	F		ULD	PF
86+000	87+000				5	5			F		P+E	F		ULD	PF
87+000	88+000				5	5			F		P+E	F		ULD	PF
88+000	89+000				5	4			F		P+E	F		ULD	PF
89+000	90+000				5	5			F		P+E	F		ULD	PF
90+000	91+000				5	4			G		P+E	F		CD	F
91+000	92+000				3				G		P+E	F		ULD	PF

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (G/F/P)	Road Side Drain	
From	To	Cracking (%)	Ravelling (%)	Potholes (%)	Bleeding (%)	Rutting	Patching (%)	Speed (KMPH)	Quality (G/F/P /VP)		Composition	Condition (F/P/D)		Type (LD/ULD/CD/NO)	Condition (PF/F)
92+000	93+000				3				G		P+E	F		ULD	PF
93+000	94+000				3				G		P+E	F		ULD	PF
94+000	95+000				3				G		P+E	F		ULD	PF
95+000	96+000				3				G		P+E	F		ULD	PF
96+000	97+000				3				G		P+E	F		ULD	PF
97+000	98+000				3				G		P+E	F		ULD	PF
98+000	99+000				3				G		P+E	F		ULD	PF
99+000	100+000				3				G		P+E	F		ULD	PF
100+000	101+000				3				G		P+E	F		ULD	PF
101+000	102+000				3				G		P+E	F		ULD	PF
102+000	103+000				3				G		P+E	F		ULD	PF
103+000	104+000				3				G		P+E	F		ULD	PF
104+000	105+000				3				G		P+E	F		ULD	PF
105+000	106+000				3				G		P+E	F		ULD	PF
106+000	107+000				3				G		P+E	F		ULD	PF
107+000	108+000				3				G		P+E	F		ULD	PF
108+000	108+400				3				G		P+E	F		CD	F

Annexure 2 : Condition of Bridges

S. No.	Chainage(Km)	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
1	5+450	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Vegetation observed
2	39+550	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
3	41+730	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
4	59+225	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	73+100	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
6	79+020	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
7	99+350	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
8	4+924	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
9	9+663	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
10	12+965	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
11	17+356	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
12	21+856	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
13	36+330	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
14	54+561	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
15	58+564	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
16	66+149	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
17	68+105	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
18	74+528	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
19	82+629	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
20	91+156	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
21	93+788	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good

Annexure 3:Condition of Box /Slab/Pipe Culverts

Condition of Box /Slab Culverts

S. No.	Chainage (Km)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	1+096	Good	Good	Fair	Fair	Fair
2	1+277	Good	Good	Fair	Fair	Fair
3	3+761	Good	Good	Fair	Fair	Fair
4	4+455	Good	Good	Fair	Fair	Fair
5	5+933	Good	Good	Fair	Fair	Fair
6	9+075	Good	Good	Fair	Fair	Fair
7	10+683	Good	Good	Fair	Fair	Fair
8	12+190	Good	Good	Fair	Fair	Fair
9	14+400	Good	Good	Fair	Fair	Fair
10	15+940	Good	Good	Fair	Fair	Fair
11	16+875	Good	Good	Fair	Fair	Fair
12	17+250	Good	Good	Fair	Fair	Fair
13	25+835	Good	Good	Fair	Fair	Fair
14	27+795	Good	Good	Fair	Fair	Fair
15	41+310	Good	Good	Fair	Fair	Fair
16	44+840	Good	Good	Fair	Fair	Fair
17	47+930	Good	Good	Fair	Fair	Fair
18	50+313	Good	Good	Fair	Fair	Fair
19	51+404	Good	Good	Fair	Fair	Fair
20	59+914	Good	Good	Fair	Fair	Fair
21	60+515	Good	Good	Fair	Fair	Fair
22	64+327	Good	Good	Fair	Fair	Fair
23	65+832	Good	Good	Fair	Fair	Fair
24	67+236	Good	Good	Fair	Fair	Fair
25	81+861	Good	Good	Fair	Fair	Fair
26	82+063	Good	Good	Fair	Fair	Fair
27	92+563	Good	Good	Fair	Fair	Fair
28	94+900	Good	Good	Fair	Fair	Fair
29	96+232	Good	Good	Fair	Fair	Fair
30	96+578	Good	Good	Fair	Fair	Fair
31	103+792	Good	Good	Fair	Fair	Fair
32	104+164	Good	Good	Fair	Fair	Fair

Condition of Pipe Culverts

S. No.	Chainage (Km)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	1+332	Good	Fair	Fair	Fair
2	2+493	Good	Fair	Fair	Fair
3	3+696	Good	Fair	Fair	Fair
4	3+887	Good	Fair	Fair	Fair
5	3+903	Good	Fair	Fair	Fair
6	3+931	Good	Fair	Fair	Fair
7	5+925	Good	Fair	Fair	Fair
8	6+330	Good	Fair	Fair	Fair
9	6+413	Good	Fair	Fair	Fair
10	11+174	Good	Fair	Fair	Fair
11	11+322	Good	Fair	Fair	Fair
12	13+344	Good	Fair	Fair	Fair
13	14+118	Good	Fair	Fair	Fair
14	15+770	Good	Fair	Fair	Fair
15	16+515	Good	Fair	Fair	Fair
16	16+675	Good	Fair	Fair	Fair
17	17+252	Good	Fair	Fair	Fair
18	18+248	Good	Fair	Fair	Fair
19	19+229	Good	Fair	Fair	Fair
20	24+297	Good	Fair	Fair	Fair
21	22+689	Good	Fair	Fair	Fair
22	24+441	Good	Fair	Fair	Fair
23	27+216	Good	Fair	Fair	Fair
24	29+618	Good	Fair	Fair	Fair
25	31+538	Good	Fair	Fair	Fair
26	35+309	Good	Fair	Fair	Fair
27	35+995	Good	Fair	Fair	Fair
28	38+437	Good	Fair	Fair	Fair
29	39+029	Good	Fair	Fair	Fair
30	39+192	Good	Fair	Fair	Fair
31	39+428	Good	Fair	Fair	Fair
32	52+046	Good	Fair	Fair	Fair
33	63+553	Good	Fair	Fair	Fair
34	63+907	Good	Fair	Fair	Fair
35	64+761	Good	Fair	Fair	Fair
36	65+056	Good	Fair	Fair	Fair
37	66+038	Good	Fair	Fair	Fair

S. No.	Chainage (Km)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
38	66+694	Good	Fair	Fair	Fair
39	67+175	Good	Fair	Fair	Fair
40	69+133	Good	Fair	Fair	Fair
41	69+950	Good	Fair	Fair	Fair
42	70+472	Good	Fair	Fair	Fair
43	76+737	Good	Fair	Fair	Fair
44	77+393	Good	Fair	Fair	Fair
45	80+108	Good	Fair	Fair	Fair
46	80+489	Good	Fair	Fair	Fair
47	80+909	Good	Fair	Fair	Fair
48	81+698	Good	Fair	Fair	Fair
49	82+245	Good	Fair	Fair	Fair
50	84+204	Good	Fair	Fair	Fair
51	84+904	Good	Fair	Fair	Fair
52	86+477	Good	Fair	Fair	Fair
53	86+871	Good	Fair	Fair	Fair
54	88+431	Good	Fair	Fair	Fair
55	90+284	Good	Fair	Fair	Fair
56	90+883	Good	Fair	Fair	Fair
57	91+606	Good	Fair	Fair	Fair
58	92.009	Good	Fair	Fair	Fair
59	95+590	Good	Fair	Fair	Fair
60	97+408	Good	Fair	Fair	Fair
61	97+970	Good	Fair	Fair	Fair
62	98+227	Good	Fair	Fair	Fair
63	98+971	Good	Fair	Fair	Fair
64	99+792	Good	Fair	Fair	Fair
65	100+069	Good	Fair	Fair	Fair
66	101+196	Good	Fair	Fair	Fair
67	101+799	Good	Fair	Fair	Fair
68	104+491	Good	Fair	Fair	Fair
69	105+075	Good	Fair	Fair	Fair
70	105+898	Good	Fair	Fair	Fair
71	106+285	Good	Fair	Fair	Fair

Annexure 4: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S. No.	Item	Frequency	Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	108.4	12	4	350	18,21,120	04 Nos. of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	101.03	24	4	350	33,94,608	04 Nos. of Labour
3	Watering in Median Plants	Once in Week	Kms.	101.03	52	1	1939	1,01,86,653	01 Nos. of Labour
4	ROW Cleaning	Half yearly	Kms.	54.2	2	5	350	1,89,700	5 Nos of labour per KM (50% of the Project length)
5	Cleaning of Culverts	Half yearly	Nos	104	2	2	650	2,70,400	3 Nos. of Labour along with JCB or Excavator
6	Road Furniture Cleaning	Quarterly	Kms.	108.4	4	2	350	3,03,520	02 Nos. of Labour
7	Maintenance of Bus shelters	Monthly	Nos.	36	6	2	350	1,51,200	2 Nos./ Bus shelter/month
8	Bridges	Half yearly	Nos.	14	2	2	350	19,600	02 Nos. of Labour for removal of vegetation/Structure
								1,63,36,801	
	EQUIPMENT SUPPLY							-	
1	Grass cutter	Monthly	Nos.	7.4	12	0	12000	4,422	(12000/year)
2	Bikes	Monthly	Nos.	7.4	12	0	2500	14,740	Per Supervisor/Per Month
								19,162	
							Grand Total	**1,63,55,963.00**	

Incidental cost for 1 year

S. No.	Item	Frequency	Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	2701	516	13,93,716	10 % of Total Project length on B/S for 1 year
2	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1626	225	10,97,550	5% of total Shoulder length throughout the project
3	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos.)
4	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty. per year - (considered 2400 per number)
5	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	108.4	4	27	2250	2,43,000	5 % of total stones per year (unable to understand the backup)
	Total amount for 1 Year							**28,76,266**	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 0
2	Fuel for Generator & Vehicles	₹ 3,60,000
3	Electricity	₹ 3,30,000
4	Stationary	₹ 5,000
	Total Amount	**₹ 6,95,000**

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
Major Maintenance - Highway	01-04-2026	21,45,70,858	5.20	3.0%	24,80,43,912	24.80
				Total	₹ 24,80,43,912	24.80

Major maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm.	11,20,850.00	14.00	1,56,91,900	11,20,850.00	14.00	1,56,91,900
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (Table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum.	-	7,480.00		-	7,480.00	
	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum.	14,010.63	6,800.00	9,52,72,250	14,010.63	6,800.00	9,52,72,250

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Micro surfacing	Sqm.	5,60,425.00	160.00	8,96,68,000	5,60,425.00	160.00	8,96,68,000
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm.	-	130.00		-	130.00	
	Total				**20,06,32,150**			**20,06,32,150**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	RMT	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 g per sqm. area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm.	27,013.00	516.00	1,39,38,708	27,013.00	516.00	1,39,38,708
3	Road Studs	Nos.	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**1,39,38,708**		-	**1,39,38,708**
	Grand Total				**21,45,70,858**			**21,45,70,858**

Annexure 5: Letter of Award

Letter of Award

BY R P A D

No. : AB/TC/SHDP/ 3945 /2011

Office of Executive Engineer
Roads & Building Division
2nd Floor, Hostel Building,
Polytechnic compound,
Ahmedabad -380015
Date: 2/8/2011
Ph No.: 079-26303490, 26303637
Fax: 079-26303490

To,
Dilip Buildcon Limited
E-5/99, Arera Colony,
Bhopal - 462 016 (M.P)

Kind Attention: **Mr. Devendra Jain** (Dilip Buildcon Limited)

Subject: **Letter of Award (LOA) for Package 8 bid out under the Tender Notice No: 1 & 2 of 2010-11 issued by Roads & Buildings Department, Gujarat, dated 4th & 18th September 2010**

We refer to your unconditional bid for Package 8 (Nadiad - Mahudha - Kathlal - Kapadwanj - Bayad - Modasa) in response to our Request for Proposal issued vide Tender Notice no: 1 & 2 of 2010-11 issued by Roads & Buildings Department, Gujarat, dated 4th & 18th September 2010 and all addendums and corrigendums issued thereto, for the development of select stretches of state highways in Gujarat on Design Build Finance Operate Transfer – Annuity basis ("the Project").

We are pleased to inform you that your Financial Bid of **₹17,46,00,000/- (*Rupees seventeen crores forty-six lakhs only*)**, to be paid to you as six-monthly Annuity, as per the terms of the draft Concession Agreement, has been duly approved by the Roads & Buildings Department, Gujarat vide their **order No. SHDP/102010/631/7/Pvt. dt. 01/08/2011** and you have been declared as the Selected Bidder.

Please note that this LOA is subject to the following terms and conditions:

1. As per Clause 3.3.5 of the Part 1 - Instruction to Bidders (ITB) of the RFP, within 7 (seven) days of the receipt of the LOA, you are requested to sign and return the duly signed duplicate copy of the LOA, in acknowledgement thereof, along with a letter undertaking that you would abide by all the conditions mentioned herein;

2. You are required to submit to the R&BD, details of the Special Purpose Vehicle (SPV) promoted and incorporated in accordance with Clauses 1.1.2 (B), 1.1.2(C) and 2.3 of Part 1- Instruction to Bidders (ITB) of the RFP, at the earliest;

3. In terms of Clause 1.3 of the ITB you are required to execute the Draft Concession Agreement between the R&BD, GOG and the SPV to be set up in accordance with the RFP, within 60 days from the issue of the Letter of Award;

4. In terms of Clause 9.1.1 of the Draft Concession Agreement, you are required to extend the Bid Security and keep it in force and effect, until the time you furnish the Performance Security and the same comes into effect.

5. In compliance with the terms of Clause 3.6 of the ITB you are required to pay, at the time of signing of the draft Concession Agreement, to India Infrastructure Initiative a non-refundable amount of **₹1,86,95,835 /- (Rupees One Crore Eighty Six Lakhs Ninety Five Thousand Eight Hundred and Thirty Five Only)** plus service tax and education cess, towards 90% of project development expenses, by means of a Demand Draft from a Scheduled Bank (except a Cooperative Bank) in favour of India Infrastructure Initiative, payable at Delhi, and undertake to pay remaining amount of **₹20,77,315 /- (Rupees Twenty Lakhs Seventy Seven Thousand Three Hundred and Fifteen Only)** plus service tax and education cess, towards balance 10% of project development expenses at any time within 3 (three) months from the date of signing of the Draft Concession Agreement.

Kindly note, that this communication by itself does not create any right or contractual relationship with R&BD, GoG. Any such right or relationship shall come into effect only on your fulfilling the above said conditions and execution of the Draft Concession Agreement. In the event of failure on your part to comply with any of the terms and conditions mentioned in the LOA and the RFP, within the time period and in the manner prescribed therein, R&BD, GoG, in addition to all other rights and remedies that may be available to it under the provisions of the RFP and the applicable laws, shall be at absolute liberty and freedom to treat your Bid as rejected and deal with the captioned Project as it deems fit in accordance with the RFP.

Please acknowledge this letter within 7 days of receipt of this letter and indicate a suitable date for execution of the Draft Concession Agreement which shall in no case, be later than 60 (sixty) days from the date of this Letter of Award.

Executive Engineer
R&B Division, Ahmedabad
Ahmedabad

Copy Submitted to :

- Officer on Special Duty (SP), R & B Department, Block No. 14, Gandhinagara for Information please.
- Superintending Engineer, State Highway Development Project, Nirman Bhavan, Ground Floor, Sector 10-A, Gandhinagar for information please.

Dilip Buildcon Limited
E-5/99, Arera Colony, Bhopal, (M.P.) - 462

S.No.	Name of Project	Length Km.	Cost of Project Rs. in Crore	Departmen	Performance Scurity Bank Guarantee Amount in Rs.	Submission of Performance Bank Guarantee	Name of Independed Engineer	Amount paid to Independed Engineer Exculding	10.3% Service Tax Amount	Total Amount to be paid Inculding Service Tax	Cheque/ DD	one time of or part payment	LOA Letter Date	Agreement Date and Days
1	Two-laning of Sardarpur-Badnawar Road BOT (Toll + Annuity) basis (15 Years)	43.00 Km.	83.67	MPRDC	4.20 Crore	Within 6 Month from the date of agreement	M/s MSV International Inc. Gurgaon	17,524,038.00	1,804,976.00	19,329,014.00	Cheque	In Four instullment in two years first instuliment to be paid at the time of apointment of Independened Engineer		
2	Nadiad- Mahudha-Kathlal -Kapadwanj-Bayad- Modasa Gujarat Road BOT (Annuity) basis (13 Years)	108.4 Km	244.39	Gujarat	13.41 Crore		M/s India Infrastructure Initiative, New Delhi	18,695,835.00	1,925,671.00	20,621,506.00	DD	Full amount to be paid at time of agreement in DD	02.08.2011	60 Day's within LOA Date 02.10.2011
	Nadiad- Mahudha-Kathlal -Kapadwanj-Bayad- Modasa Gujarat Road BOT (Annuity) basis (13 Years)						M/s India Infrastructure Initiative, New Delhi	2,077,315.00	213,963.00	2,291,278.00	DD	Full amount to be paid within 3 month from the date of signing of the Draft Concession Agreement		
3	Silwani-Sultanganj-Jaising Nagar-Sagar BOT (Toll Plus Annuity) basis (15 Years)	76 Km.	121.00	MPRDC	6.05 Crore								27.07.2011	45 days within LOA Date 12.09.2011
	Total Cost Rs.		**449.06**											

Annexure 6: Provisional Certificate

SAI Consulting Engineers Pvt. Ltd.
Independent Engineer for State Highways under SHDP – R&BD (GoG)
Project Office : Plot No. 360, Sector - 8B, Gandhinagar – 382 008 INDIA
Tel : +91-79-23240594 E-mail : shdp@saiindia.com Web : www.saiindia.com

(Ref. No. SAI/SHDP/IE/1121/2013 dated-31/12/2013)

PROVISIONAL CERTIFICATE

1. I, **Arun Shende** Team Leader (SAI Consulting Engineers Pvt. Ltd), acting as Indepedent Engineer, under and in accordance with the Concession Agreement dated 05th January 2012 for redevelopment of the section **Nadiad –Mahudha – Kathlal –Kapadwanj-Bayad-Modasa** from km 0.600 to km109.00 (inclusive of Maintenance works between km 1.300 to km 2.300 Nadiad , km 26.050 to 27.710 Kathlal, km 42+850 to km 44.250 Kapadwanj, km 74.750 to km75.750 to km 75.850 Bayad, km 96.000 to km 96.560 Sikka Chokadi, km 106.300 to km 107.550 Modasa (as per Schdule-K)on State Highway No 59 in Gujarat (the "Project Highway") on design, build, finance, operate and transfer (DBFOT) annuity concession basis through **M/s DBL NADIAD-MODASA TOLLWAYS LIMITED**, hereby certify that the Tests specified in Article 14 and Schedule-I of the Concession Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
2. Construction Works that were found to be incomplete and/or deficient have been specified in the Punch List appended here to, and the Concessonaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Concession Agreement. Some of the incomplete works have been delayed as a results of reasons attributable to the R&BD, GoG or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire, I am satified that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway, pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Concession Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial opreation on this the 31st day of December 2013.

ACCEPTED SIGNED SEALED
AND DELIVERED for and on
Behalf of **M/s. DBL NADIAD-MODASA TOLLWAYS LIMITED** by:

J P Mishra
Chief General Manager
M/s. DBL NADIAD-MODASA TOLLWAYS LIMITED
8, Trinetra Bunglows, Shiv Shanti Society
Nr. Sardar Patel Ring Road, Ratanpura Gam,
Vastral, Ahmedabad, (Gujarat) 382418

SIGNED SEALED AND
DELIVERED for and on
behalf of **INDEPENDENT ENGINEER** by

ArunShende
(Team Leader/Sr. H. E/Authorized signatory)
Plot No. 360, Sector – 8 B,
Gandhinagar 382008

Regd. Office : Block-A, SAI House, Satyam Corporate Square, B/h. Rajpath Club, Bodakdev, Ahmedabad-380059. INDIA
Tel : +91-79-66142600, 6614 2700 Fax : +91-79-66142800 E-mail : mail@saiindia.com Web : www.saiindia.com

Annexure 7: Completion Certificate

SAI Consulting Engineers Pvt. Ltd.
An ISO 9001 Certified Company
Regd. Office : Block-A, SAI House, Satyam Corporate Square, B/h. Rajpath Club, Bodakdev, Ahmedabad - 380 059. INDIA
Phone : +91-79-6614 2600, 6614 2700 Fax : +91-79-6614 2800 E-mail : mail@saiindia.com Web : www.saiindia.com

Ref. No. SAI/1470/2014 **10th April, 2014**

To,
M/s. DBL Nadiad Modasa Toll ways Ltd.
8, Trinetra Bunglow, Shiv Shanti Society,
Ratanpuragam, Vastral
Ahmedabad (Gujarat)-382418

Kind Attn: Mr. J. P. Mishra

Sub: Services of Independent Engineer for Two Laning with Paved Shoulders of Stretches of State Highways under SHDP to be executed on Design, Build, Finance, Operate & Transfer (DBFOT) Annuity Basis- **Package-8 - Nadiad-Kathlal-Bayad-Modasa Road (SH-59)**

Reg: Completion Certificate (Article 14 & Schedule-J)

Ref: 1. Our Letter No. SAI/SHDP/IE/1150/2014 dated 21.01.2014
2. Concessionaire's Letter No. DBLNMTL/I.E-SAI/SHDP/Package-08/2014/263 dated 23.03.2014

Dear Sir,

As per Provision of Concession Agreement Article 14.3, Provisional Completion Certificate with Punch List was issued by the Independent Engineer vide letter (1) above. Accordingly Concessionaire has attended the work within the stipulated time period i.e. 90 days from the date of issue of Provisional Completion Certificate.

Concessionaire informed Independent Engineer that they have completed the punch list items vide letter (2) above. Independent Engineer's Key personals visited the project site along with Concessionaire Representative on 01.04.2014. Following Representatives were present:

Independent Engineer
Mr. N.V. Satyanarayana, Acting TL cum SQME
Dr Y.S. Madhvesh, Sr. Pavement Specialist
Mr. Sandeep Rathod, CAD Expert
Mrs. Meena Jain, Environmental Engineer
Mr. Kumar Prem Prakash, Resident Highway Engineer
SAI Site Team

Concessionaire
Mr. J. P. Mishra, DBL

Subsequently on 09.04.2014 Mr. Sushant Gupta, VP (Projects) Mr. Anil Mehta, Project Coordinator and Mr. P G Kulkarni, Team Leader cum Sr. Highway Engineer along with Concessionaire Representative Mr. J P Mishra, Project Manager also had joint inspection.

It is found that the Concessionaire has completed all works given in the Punch List satisfactorily. As Built Drawings has been submitted which are under review with Independent Engineer.

Y:\1 All Project Documents\212002-R&B Gujarat\Current Letters from 2014\Current Letters-2014.doc

SAI Consulting Engineers Pvt. Ltd.

Concessionaire could not complete the Avenue Plantation as per Provision of Concession Agreement because of ROW constraint mainly wherever the embankment height is more than 2 Meter and Urban areas.

The work has not been executed/deviated from the Provision of Concession Agreement has been attached herewith as **Annexure -1**.

The Project Assets Report is attached herewith as **Annexure-2.**

Based on the above facts and inspection, Project Highway has been completed on 29.03.2014. Independent Engineer is issuing the **Completion Certificate** pursuant to Clause 14.2 & 14.3 and Schedule-J of Concession Agreement.

The Project Highway ***provisionally declared fit entry into Commercial Operation*** on **31.12.2013**, as mentioned in Provisional Completion Certificate. Since Concessionaire has now completed the Punch List items within 90 days period, as per Article 14.4 CA, the ***date of Commercial Operation will be 31.12.2013 as per Article 15.***

Thanking you.

Yours Sincerely,
FOR SAI CONSULTING ENGINEERS PVT. LTD.

SUSHANT GUPTA
VICE PRESIDENT (PROJECTS)

Encl: Completion Certificate
Annexure 1 - Reduction Scope of Work as per Schedule-B of CA
Annexure 2 - Project Asset Report

Copy forwarded with compliments to:

1. Mr. P J Patel, Chief Engineer (P&P) (R&B) Dept., Gandhinagar-382010
2. Mr. S N Shroff, SE (PIU) SHDP Scheme, Gandhinagar-382010
3. Executive Engineer (R&B) Division, Nadiad
4. Team Leader, SAI, Gandhinagar

Y:\1 All Project Documents\212002-R&B Gujarat\Current Letters from 2014\Current Letters-2014.doc

Enclosure to Letter No. SAI/1470/2014 dated 10.04.2014

SCHEDULE-J

(See Clauses 14.2 & 14.3)

COMPLETION CERTIFICATE

1. I, **Sushant Gupta, Vice President-Projects /Authorized signatory** (SAI Consulting Engineers Pvt. Ltd), acting as Independent Engineer, under and in accordance with the Concession Agreement dated 5th Day of January 2012 for redevelopment of the section **Nadiad-Madhudha-Kathlal-Kapadwanj-Bayad-Modasa from km 0.60 to Km 109.00 on State Highway No 59** in Gujarat the **"Project Highway"** on Design, Build, Finance, Operate and Transfer (DBFOT) Annuity Concession Basis through **M/s. DBL NADIAD-MODASA TOLLWAYS LIMITED,** hereby certify that the Tests specified in Article 14 and Schedule-I of the Concession Agreement have been successfully undertaken to determine compliance of the Project Highway with the Provisions of the Concession Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users therof.

2. It is certified that, in terms of the aforesaid Agrement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into commercial operation on this the **29th day of March 2014**.

SIGNED, SEALED AND DELIVERED
for and on behalf on
INDEPENDENT ENGINEER by :

Sushant Gupta
Vice President (Project) /Authorized Signatory
Block A, SAI House,
Satyam Corporate Square
Rajpath Club, Bodakdev,
Ahmedabad-380059 (Gujarat)

Annexure 8: Insurance

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001987

जारीकर्ता कार्यालय/***Issuing Office***
कार्यालय कोड /*Office Code: 321300*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: *23AAACN9967E1ZB*
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्तरोत /*Business Source: 910355*
विक्रय चैनल वितरण/***Sales Channel*** *Code: 91035500000001*
नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL NADIAD MODASA TOLLWAYS LTD
पता/ Address: 4TH, 33, ELLORA COMMERCIAL CENTRE, SALAPOSE ROAD, NR, G.P.O, AHMEDABAD, GUJARAT, City: AHMEDABAD, District: AHMEDABAD, State: GUJARAT, PIN: 380001.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881838
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAECD0388D

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /**Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021**

प्रीमियम/ Premium	₹ 18,39,639.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 3,31,135.00		
केरला बाढ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/ Proposal Number and Date	8800200327086847 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्त योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/ Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /**Total Amount**	₹ 21,70,774.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Twenty One Lakh Seventy Thousand Seven Hundred Seventy Four Only.)
Location:Nadiad¿Madhudha-Kathlal-Kapadvanj-Bayad-Modasa (Km.00 to 109/00 Road, Gujarat Kheda, Nadiad, 387001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Building & Booths, TMS, HTMS, Office & It Equipment, Electronic	Zone III	1,72,80,00,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixturs, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone III	11,20,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

Printed on 27/03/2020 by ID: 75159

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पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001987

जारीकर्ता कार्यालय/***Issuing Office***

कार्यालय कोड /*Office Code: 321300*

कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /*Business Source: 910355*

विक्रय चैनल विवरण/***Sales Channel*** *Code: 91035500000001*

नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*

सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Construction of Nadiad Madhudha Kathlal Kapadvanj-Bayad-Modasa (Km.00 to 109/00 Road.

Name of the co insured under the policy is Dilip Buildcon Ltd. & R&BD Govt. of Gujarat.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty.

जिसकी गवाही में दिनि/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को विधिवत अधिकृत किया जा रहा है उसके हाथ निर्धारित किए जाएं। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठांकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट https://nationalinsurance.nic.co.in पर उपलब्ध है, को एक अनुबंध के रुप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दिया जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्राथमिकता निरस्त हो जाएगी। /*IN WITNESS WHEREOF, the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this* **27/March/2020.** *This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website https://nationalinsurance.nic.co.in shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that* ***IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'***

इंश्योरेन्सइंडियालिमिटिड

स्टांप ड्यूटी
Stamp Duty:
(₹ 0.50)

कृते नेशनल इन्श्योरेन्स कंपनी लिमिटिड/ ***For and on behalf of National Insurance Company Limited***

अधिकृत हस्ताक्षरकर्ता/ ***Authorized Signatory***

Printed on 27/03/2020 by ID: 75159

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TAX INVOICE

Invoice Serial No: 30871E9P00001987 **Invoice Date:** 27/03/2020

Details of Supplier:
National Insurance Company Limited.,
BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022
State : 23 , Madhya Pradesh
GSTIN No : 23AAACN9967E1ZB

Details Of Receiver : DBL NADIAD MODASA TOLLWAYS LTD
Address : 4TH, 33, ELLORA COMMERCIAL CENTRE, SALAPOSE ROAD, NR, G.P.O, AHMEDABAD, GUJARAT
City : AHMEDABAD,
District: AHMEDABAD,
State: GUJARAT,
PIN: 380001.

Place Of Supply State : Gujarat
State Code : 24
GSTIN No : 24AAECD0388D1Z0

सैक कोड/ SAC Code	सेवा का वविरण/ Description of Service	कुल/Total(₹)	छूट/ Discount	टैक्स योग्य/ मूल्य/Taxable Value(₹)	सीजीएसटी की राशि CGST		एसजीएसटी/यूटीजीएसटी/ SGST/UTGST		आईजीएसटी/IGST		केरला बाढ उपकर/Kerala Flood Cess
					दर/Rate	राशि Amount(₹)	दर/Rate	राशि Amount(₹)	दर/Rate	राशि Amount(₹)	राशि/Amount(₹)
997137	Other property insurance services	18,39,639	0%	18,39,639	0%	0	0%	0	18%	3,31,135	0
TOTAL		18,39,639		18,39,639		0		0		3,31,135	0

कुल इनवॉयस मूल्य (अंकों में)Total Invoice Value (In figures) :
₹ 21,70,774
कुल इनवॉयस मूल्य (शब्दों में)Total Invoice Value (In words) : [illegible]/Rupees
Twenty One Lakh Seventy Thousand Seven Hundred Seventy Four
केवल/Only.
रविर्स चार्ज के अधीन टैक्स की राशि Amount of Tax Subject to Reverse Charge : No

E.&.O.E

कृते नेशनल इन्श्योरेन्स कंपनी लिमिटेड/ *For and on behalf of National Insurance Company Limited*

अधिकृत हस्ताक्षरकर्ता/ *Authorized Signatory*

Printed on 27/03/2020 by ID: 75159

Page no: 3

वसूली रसीद/Collection Receipt

जारीकर्ता कार्यालय कोड/Issuing Office Code : 321300
जारीकर्ता कार्यालय का नाम व पता/Name and Address of Issuing Office :
BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022
राज्य कोड/State Code : 23 ,राज्य का नाम/State Name : Madhya Pradesh
जीएसटीआईएन/GSTIN : 23AAACN9967E1ZB
संपर्क संख्या/Contact Number : 755 2682822

रसीद सं./Receipt No : 321300811910007675 रसीद की तिथि व समय/Receipt Date & Time : 27/03/2020. 16:21 hours	स्क्रॉल सं. (यदि कोई हो)/Scroll No(If any) : 8821200327000233 स्क्रॉल तिथि (यदि कोई हो)/Scroll Date(If any) : 27/03/2020

श्री DBL NADIAD MODASA TOLLWAYS LTD से सीडी- नकद जमा के रूप में रूपये Rs. 21,70,774.00 निम्नलिखित लेनदेन के अनुसार धन्यवाद सहित प्राप्त हुआ। उपकरण स्क्रॉल किया गया है।

Received with thanks from DBL NADIAD MODASA TOLLWAYS LTD a sum of Rs. 21,70,774.00 (Rupees Twenty One Lakh Seventy Thousand Seven Hundred Seventy Four Only) by way of CD-Cash Deposit towards the following transactions. The instrument is scrolled.

भुगतान विवरण/Paymode Details :

भुगतान मोड का नाम/Paymode Name :	जमा खाता धारक का नाम/Deposit Account Holder Name :
CD-Cash Deposit	MS DILIP BUILDCON LIMITED
संदर्भ सं./Ref No :	संदर्भ तिथि/Ref Date :
881103220221	
बैंक का नाम (यदि कोई हो)/Bank Name(If any) :	बैंक शाखा (यदि कोई हो)/Bank Branch(If any) :

आपके नकद जमा खाते में समायोजन के बाद उपलब्ध शेष रूपये

The available Balance of your Cash Deposit A/C. after adjustment is - CD a/c. 881103220221 : Balance-Rs.73072460.74

Adjusted from Receipt No. 321300811910007666. Balance Available - Rs. 67570368

क्र. सं./ S. No	विभाग/ Dept	पॉलिसी/पृष्ठांकन Policy/Endorsement		व्यव. श्रोत कोड/ Biz Source Code	व्यव.का वर्ग/ विवरण / Class of Business/Narration	राशि रू./ Amount Rs.
	लेन-देन कोड/ Tr Cd	वर्ष/ Year	संख्या/ Number	विक्रय चैनेल/ Sales Channel	लेखा विवरण/ Account Description	
1	44	2020	321300441910001987	910355	Civil Engineering Completed Risk	
	11			91035500000001	Direct Premium	18,39,639.00
					IGST	3,31,135.00
					Total	21,70,774.00

कृते नेशनल इन्श्योरेन्स कं. लि./For National Insurance Co. Ltd,

रोकड़िया/Cashier :

प्राधिकृत हस्ताक्षरकर्ता/Authorised Signatory

चेक द्वारा भुगतान किए जाने की स्थिति में रसीद चेक द्वारा भुगतान की प्राप्ति के बाद ही जारी किया जाएगा। सभी पत्राचारों में उपरोक्त वर्णित पॉलिसी जारी करनेवाले कार्यालय के पते पर दस्तावेज संख्या व पॉलिसी का वर्ष तथा संख्या उद्धृत किया जाना चाहिए। जब राशि 5000/- रूपए या उससे अधिक होगी तो राजस्व टिकट चिपकाया जाना आवश्यक होगा।

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

ADJUSTMENT VOUCHER

Issuing Office	:	BHOPAL DO-1 (450100)
Address	:	C.D.U. - I , BLOCK NO 3, IIND FLOOR, PARYAVAS BHAWAN, ARERA HILLS, BHOPAL,462011 BHOPAL
Phone	:	07554203271
Email	:	nia.450100@newindia.co.in
Fax	:	07554203274
Collection Number	:	45010081190000007658
Collection Date	:	18/02/2020
Business Source Code	:	1D5140053
PAN No of Payer	:	AACCD6124B

Received with thanks from M/S.DILIP BUILDCON LTD ..

The amount received/Adjusted is towards -

Policy No.	A/C Description	Amount₹	A/C Code	Sub A/C Code
45010036190100000061	Cash Deposit Account-450100	6542.00	5076.450100	CD0000941977
45010036190100000061	Cash Deposit Account-450100	3.00	5076.450100	CD0000941977

Total = ₹ 146787.00

Your Payment/Adjustment Details are as under -

Mode	Amount ₹	Cheque No.	Cheque Date	Drawee Bank	Drawee Branch	Reference No.	Scroll/BG/APD Balance
Advance Premium Deposit	6542.00	N.A.	N.A.	N.A.	N.A.	4501001910015997	3238537.00
Advance Premium Deposit	3.00	N.A.	N.A.	N.A.	N.A.	4501001910015997	3238537.00

Total = ₹ 146787.00

Utilization details of the Collected Amount :

Premium	GST	Stamp Duty	Excess Amount
5547.00	998.00	0.00	0

Sl no.	Agency Code	Agency Name	Department Code
1	NA	GLOBAL INSURANCE BROKERS PRIVATE. LTD.	36

For The New India Assurance Company Limited

Date of Issue: 18/02/2020

Cashier's Initial

Authorized Signatory

Note -

1.Please note the Policy Number, Collection Number and date in all future correspondence. .

2.NIA shall not be liable for any claim arising out of sales made during the period between the due date and date of payment of the installment if the premium paid has been exhausted by turnover declarations/if there is insufficient premium balance.

Tax Invoice No : 45010019P0009512

IRDA Registration Number: 190

दि न्यू इंडिया एश्योरेन्स कं.लि. भोपाल मण्डल कार्या.-1 450100

Signature valid
Digitally signed by Srinivasan Vanteswaran
Date: 2020.02.18 13:35:54 IST

Policy No. : 45010036190100000061 Document generated by 21425 at 18/02/2020 13:35:54 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Page 1 of 1

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

POLICY STAMP PAID IN CONSOLIDATED AMOUNT VIDE TREASURY DEPARTMENT,GOVT.OF M ORDER No.-440,DTD AUGUST,8,2017.

POLICY SCHEDULE FOR EMPLOYEES COMPENSATION INSURANCE

Insured's Name	:	M/S.DILIP BUILDCON LTD .			
Insured's Details			Issuing Office Details		
Customer ID	:	PO64533895	Office Code	:	BHOPAL DO-1 (450100)
Address	:	PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE CHUNA BHATTI KOLAR ROAD BHOPAL BHOPAL ,MADHYA PRADESH, 462001	Address	:	C.D.U. - I , BLOCK NO 3, IIND FLOOR, PARYAVAS BHAWAN, ARERA HILLS, BHOPAL,462011
Phone No	:		Phone No	:	07554203271 / 07554203272
E-mail/Fax	:	db@dilipbuildcon.co.in, /	E-mail/Fax	:	nia.450100@newindia.co.in / 07554203274
PAN No	:	AACCD6124B	S.Tax Regn. No	:	AAACN4165CST178
GSTIN/UIN	:	23AACCD6124B2ZD / NA	GSTIN	:	23AAACN4165C1ZZ
	:		SAC	:	997139 (Other non-life insurance services excl RI)

Policy Details					
Policy Number	:	45010036190100000061	Business Source Code		
Period of Insurance	:	From: 31/01/2020 12:00:01 AM To: 30/01/2021 11:59:59 PM	Dev.Off level./Broker/Corp. Agent/Web Aggregator	:	GLOBAL INSURANCE BROKERS PRIVATE. LTD. - (1D5140053) 112700_AON GLOBAL INSURANCE (SI00062348)
Date of Proposal	:	31-Jan-20	Agent/Bancassurance/ Specified Person	:	
Prev. Policy no.	:		Phone No	:	02261485661, 9819676655 / NA
Client Type	:	Corporate	E-mail/Fax	:	girish.prabhu@globalinsurance.co.in, / / /

Premium(₹)	GST(₹)	Total (₹)	Total (₹ in words)	Receipt No. & Date
5547	998	6545	RUPEES SIX THOUSAND FIVE HUNDRED FORTY-FIVE ONLY	45010081190000007658 - 18/02/20

Details of Employees with monthly wages upto ₹ 15000:

Categories	Sub Categories	No of Employee	Cash Total Wages
Road Paving, Tarring and Road Making	Construction of Road and Other civil work	10	1800000

Details of Employees with monthly wages above ₹ 15000:

Categories	Sub Categories	No of Employee	Cash Total Wages
Road Paving, Tarring and Road Making	Construction of Road and Other civil work	10	600000

Trade Description	Particular of Works	Location Details	Included All Sub - Contractors
Construction of Road and Other civil work	Construction of Nadiad–Madhudha-Kathlal-Kapadvanj-Bayad-Modasa (Km.00 to 109/00 Road.	Construction of Nadiad–Madhudha-Kathlal-Kapadvanj-Bayad-Modasa (Km.00 to 109/00 Road.	

Contractor/Sub-Contractor Details:

Serial No	Name of Contractor	Description	Categorie	No. of Workers			Amount Wages
				Skilled	Unskilled	Others	

Signature valid
Digitally signed by Srinivasan Vaideswaran
Date: 2020.02.18 13:35:55 IST

Policy No. : 45010036190100000061 Document generated by 21425 at 18/02/2020 13:35:54 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Page 1 of 2

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

Extensions under the Policy Cover

Name of the Extension	Sub Limit of the Extension	Deductibles of the Extension
Medical Extension	₹50000	NA
Special Conditions	EMPLOYEE COVERED - SKILLED/SEMI SKILLED/UN-SKILLED, SUPERVISOR, ENGINEERS & CONTACT LABOUR ETC NA	

Special Exclusions	NA
Special Excess/Deductible	NA
The Policy shall be subject to EMPLOYEES COMPENSATION INSURANCE Policy clauses attached herewith.	
Clauses	Description

Premium and GST Details

	Rate of Tax	Amount in INR
Premium		₹ 5547.00
SGST	9	499
CGST	9	499
IGST	0	0

In witness whereof the undersigned being duly authorised by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 18th day of February,2020.

For and on behalf of

The New India Assurance Company Limited

Date of Issue: 18/02/2020

Duly Constituted Attorney(s)

Stamp Duty under the Policy is ₹1

Mudrank_____Dt._____consolidated Stamp Fees Paid by Pay Order Number_____vide receipt number_____dt._____.

Tax Invoice No : 45010019P0009512

IRDA Registration Number: 190

Policy No. : 45010036190100000061 Document generated by 21425 at 18/02/2020 13:35:54 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Page 2 of 2

FORM NO. ANC-25

THE NEW INDIA ASSURANCE COMPANY LIMITED

Registered & Head Office- 87, M.G. Road, Fort, Mumbai-400001.

WORKMEN'S COMPENSATION POLICY

WHEREAS the insured carrying on the Business described in the Schedule and no other for the purpose of his insurance by a proposal and declaration which shall be the basis of this contract and is deemed to be incorporated herein has applied to the Company for the insurance hereinafter contained and has paid or agreed to pay the Premium as consideration for such insurance.

NOW THIS POLICY WITNESSETH that if any time during the period of insurance any employee in the insured's immediate service shall sustain personal injury by accident or disease arising out of and in the course of his employment by the insured in the Business and if the Insured shall be liable to pay comensation for such injury either under

the Laws (s) set out in the Schedule
or at
Common Law

then subject to the terms exception and conditions contained herein or endorsed hereon the Company will indemnify the Insured against all sums for which the insured shall be so liable and will in addition be responsible for all costs and expenses incurred with its consent in defending any claim for such compensation.

PROVIDED ALWAYS that in the event of any changes in the law(s) or the substitution of other legislation thereof this policy shall remain in force but the liability of the Company shall be limited to such sum as the Company would have been liable to pay if the Law (s) had remained unaltered.

Law(s)
1. The Workmen's Compensation Act, 1923 and subsequent amendments of the said Act, prior to the date of the issue of Policy. 2. The Fatal Accidents Act, 1855.

It is hereby understood and agreed that the Workmen's Compensation (Amendment) Acts, of 1959 (8 of 1959, and 1962 (64 of 1962) and 1976 (65 of 1976) and 1984 (22 of 1984) and 1995 (30 of 1995) and 2000 (46 of 2000) and deemed to be added to the Laws set out in the Schedule to the Policy.

Provided that the Insurance granted hereunder is not extended to include :

(i) any interest and/or penalty imposed on the Insured on account of his/her failure to comply with the requirements laid down under the W. C. Act. 1923 and

(ii) any compensation payable on account of occupational diseases listed in part 'C' of schedule III of the W. C. Act. 1923

EXCEPTIONS

1. The Company shall not be liable under this Policy in respect of

(a) any injury by accident or disease, directly attributable to war, invasion, act of foreign enemy, hostilities (Whether war be declared or not) civil war, mutiny, insurrection, rebellion, revolution or military or usurped power.

(b) the insured's liability to employees of contractors to the insured.

(c) any employee who is not a "workman within meaning of the Law(s)"

(d) any liability of the insured which is attached by virtue of an agreement but which would not have attached in the absence of such an agreement.

(e) any sum which the Insured would have been entitled to recover from any party but for an agreement between the Insured and such party.

न्यू इंडिया एश्योरेन्स भोपाल मण्डल कार्या.-1 450100

2. This Policy does not cover :

(a) any accident or any loss or destruction of or damage to any property whatsoever or any loss of expenses whatsover resulting or arising therefrom or any consequentiol loss.

(b) any legal liability of whatsoever nature.

(c) payment of compensation in respect of death, injury, disablement, of the insured person, directly or indirectly caused by or contributed to by or arising from ionising radiation or contamination by radioactivity from any source whatsoever.

3. The indemnity or compensation provided by this Policy shall not apply to nor include any accident, loss destruction damage or legal liability directly or indirectly caused by or contributed to by or arising from nuclear weapons material.

CONDITION

1. This Policy and the Schedule shall be read together as one contract and any word or expression to which a specific meaning has been attached in any part of this policy or of the schedule shall bear such specific meaning wherever it may appear.
2. Every notice or communication to be given or made under this policy shall delivered in writing to the Company.
3. The insured shall take reasonable precaution to prevent accidents and diseases and shall comply with all statutory obligations.
4. In the event of any occurrence which may give rise to a claim under this Policy the Insured shall as soon as possible give notice thereof to the Company with full particulars. Every letter claim writ summons and process shall be notified or forwarded to the Company immediately on receipt. Notice shall also be given to the Company immediately the shall insured shall have knowledge of any impending prosecution inquest or fatal enquiry in connection with any such occurrence as aforesaid.
5. No admission offer promise or payment shall be made by or on behalf of the Insured without the consent of the Company which shall be entitled if it so desires to take over and conduct in his name the defence or settlement of any claim or to prosecute in his name for its own benefit any claim for indemnity or damages or otherwise and shall have full discretion in the conduct of any proceedings and in the settlement of any claim and the Insured shall give all such information and assistance as the Company may require.
6. The first premium and all renewal premiums that may be accepted are to be regulated by the amount of wages and salaries and other earnings paid by the Insured to employees during each period of Insurance. The name of every employee together with the amount of wages and other earnings shall be properly recorded and the insured shall at all times allow the Company to inspect such records and shall supply the Company with a correct account of all such wages salaries and other earnings paid during any period of Insurance within one month from the expiry date of such Period of Insurance. If the amount so paid shall differ from the amount on which premium has been paid the difference in premium shall be met by a further proportionate payment to the Company or by a refund by the Company as the case may be.
7. The Company may cancel this Policy by sending seven days notice by registered letter to the Insured at his last known address and in such event the premium shall be adjusted in accordance with Condition 6.
8. If any dispute or difference shall arise as to the quantum to be paid under the Policy (liability being otherwise admitted) such difference shall independently of all other questions be referred to the decision of a sole arbitrator to be appointed in writing by the parties to or if they cannot agree upon a single arbitrator within 30 days of any party invoking arbitration the same shall be referred to a panel of three arbitrators, comprising of two arbitrators, one to be appointed by each of the parties to the dispute/difference and the third arbitrator to be appointed by such two arbitrators and arbitration shall be conducted under and in accordance with the provisions of the Arbitration and Concilliation Act, 1996.

भोपाल मण्डल कार्या.-1 450100

It is clearly agreed and understood that no difference or dispute shall be referable to arbitraion as hereinbefore provided if the Company has disputed or not accepted liability under or in respect of this Policy.

"It is hereby expressly stipulated and declared that it shall be a condition precedent to any right of action or suit upon this Policy that award by such arbitrators or umpire of the amount of the loss or damage shall be first obtained."

It is also hereby further expressly agreed and declared that if the Company shall disclaim liability to the Insured for any claim hereunder and such claim shall not, within twelve calendar months from the date of such disclaimer have been made the subject matter of a suit in a Court of Law, then the claim shall for all purposes be deemed to have been abandoned and shall not thereafter be recoverable hereunder.

9. The due observance and fulfilment of terms, conditions and endorsements of this policy so far as they relate to anything to be done or not to be done by the Insured and the truth of the statements and answer in the proposal shall be conditions precedent to any liability of the Company to make any payment under this Policy.

Annexure 9: Change of Scope

No: SHDP / P-08 / 115 /2017

Office Of:
The Superintending Engineer,
State Highway Development Project (R&B),
Nirman Bhavan, Ground Floor,
Sector-10 A, Gandhinagar.
DT: 12 / 05 /2017

To,
LSR Engineering Consultancy Services,
Plot No: 444/1,
Sector – 8/B,
Gandhinagar – 382008
Mobile: -91 90999 42467
Email: info@Lsrindia.com

Subject: Approval of reduction in scope in the work of ~~Mareli to NH-8~~ Nadiad - Modasa Package-08, carried out on DBFOT- Annuity basis under SHDP

Reference: R&BD, GoG letter No. SHDP / 10 / 2017 / CoS / pkg-08 / 17 /pvt. Dt: 10/05/2017.

With reference to the above subject, R&BD, GoG has approved reduction of scope order for Annuity Package No: 08 vide letter under reference.

You are requested to do necessary action regarding detailed reduction of scope evaluation and to issue due revised certificate for permanent recovery of the reduction of scope amount against withheld amount in First Annuity certificate.

Encl : Proposal as above

Superintending Engineer
State Highway Development Project(R&B)
Gandhinagar

Copy to:

1. Executive Engineer, R&B. Division – ~~Valsad~~ Kheda for information and necessary actions.
2. DBL Nadiad Modasa Tollways Limited, E 5/99, Arera Colony, Bhopal – 462016 (MP) for information and necessary action.

No SHDP/10/2013/COS/Pkg.07/17/Pvt.

Government of Gujarat
Roads & Building Department
14, Sardar Bhavan, 2nd Floor,
Sachivalaya, Gandhinagar
Date:- 10/03/2017

To,
The Superintending Engineer,
SHDP Cell,
Ground Floor, Nirman Bhavan,
Gandhinagar- 382010

Subject:- Approval of reduction in scope in the work of Nadiad-Modasa Road, Package-8, carried out on DBFOT-Annuity basis under SHDP

Ref:- Your Letter No. SHDP/Pkg-8/421/2015 dated 16/ 2/2015

With reference to above subject and referred letter, I am directed to inform that proposal of Executive Engineer, Kheda (R&B) Division, Nadiad regarding reduction in scope of items as per attached list in the work mentioned in the subject above and submitted with recommendation through your above referred letter is hereby approved.

You are requested to direct the concerned Executive Engineer to take all further necessary actions in this regard as per the provisions in the Concession Agreement.

It is also requested to direct the concerned Executive Engineer to take appropriate actions while finalization of annuity amount keeping in view the various project facilities which are not provided by the concessionaire in this package, in consultation with Independent Engineer.

Encl: As said above

(N.G.Parmar)
Officer on Special Duty (SD)
R&B Department
Gandhinagar

Copy to:

(1) The Executive Engineer, Kheda (R&B) Division, Nadiad information and further necessary actions to take on the matter of letter at the earliest, as per provisions in the Concession Agreement.

(2) The Team Leader, LSR Engineering Consultancy Services, Plot No.444/1, Sector-8 B, Gokul Society, Gandhinagar for information and further necessary actions to take on the matter of letter at the earliest, as per provisions in the Concession Agreement.

DETAILS OF REDUCTION OF SCOPE

Details of reduction of scope as recommended and submitted by IE and EE as per Article-16.5 of CA is following items:

HIGHWAY

Sr. No.	Item/Structure/ Chainage/Size	Required as per Schedule B & C of CA	Remarks
1	25+070 to 25+355	Km 25+070 to 25+250 TCS-7 Km 25+250 to 25+355 TCS-8A	Reduction scope of work issued by Ex. Engineer Nadiad vide letter No. E6/PB/SHDP/754-2013 dated 03/03/2013

STRUCTURE

Sr. No.	Item/Structure/ Chainage/Size	Required as per Schedule B & C of CA	Remarks
1	Box Culvert at Ch. 27+800 (1x3.0)	Reconstruction	2 x 2.0-HPC
2	Hume Pipe Culvert at Ch. 2+696 (1 x 1.20)	Reconstruction	Widening with 1 x 0.3m Pipe
3	Hume Pipe Culvert at Ch. 1+332 (1 x 1.20)	Reconstruction	Not done
4	Hume Pipe Culvert at Ch. 64+761(3 x 0.90)	Repair & Widening	Not done
5	RCC Drain	38860 Rmt	1870m not executed

PROJECT FACILITIES

Sr. No.	Item/ Structure/ Chainage/Size	Required as per Schedule B & C of CA	Status of work at site	Remarks
1	Ambulance	1 No.	➢ Ambulance not provided during construction period i.e. from 03/07/2012 to 30/12/2013 ➢ Ambulance 01 No. having registration No. GJ 27 U 5295 is available from 31/12/2013	
2	Patrol Vehicle	1 No.	➢ Patrol vehicle not provided during construction period i.e. from 03/07/2012 to 30/12/2013 ➢ Patrol vehicle 01 No. having registration No. GJ 07 YY 1936 is available from 31/12/2013	
3	Vehicle for R&B official	1 No.	➢ Vehicle not provided from period i.e. from 03/07/2012 to 30/03/2014	
4	Crane	1 No.	➢ Crane not provided during construction period i.e. from 03/07/2012 to 30/12/2013 ➢ Crane 01 No. having registration No. GJ 01 FQ 4047 is available from 31/12/2013	
5	Truck Lay Bay	2 Nos. At Km 24+450 & Km 88+450	No work executed	No land available

(K.G.Parmar)
Officer on Special Duty (SP)
R&B Department
Gandhinagar

Annexure 10: Project Photos

HPC
92/2

SHREM FINANCIAL PRIVATE LIMITED

Development of Bankhlafata-Dogawa-Via-Borawa-Savardevala, Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA (3 MDR) Road in the State of Madhya Pradesh on DBFOT (Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Bankhlafata-Dogawa-Via-Borawa-Savardevala, Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA (3 MDR) Road in the State of Madhya Pradesh on DBFOT (Annuity) Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Bankhlafata-Dogawa	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL BANKHALFATA – DOGAWA TOLLWAYS LTD (BDTL)** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL BANKHALFATA – DOGAWA TOLL WAYS LTD (BDTL) (herein after referred to as the "Concessionaire") had augmented the existing road of **"Bankhlafata – Dogwa – Borawa - Savardevala - Punasa-Mundi Singhaji Therma Power Plant & Singhaji Bridge Approach Road, Mundi - Devala – Khutala - Attot"** section of MDR with a length of 65.40 Kms. in the State of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on 28th January,2013 on Design, Build, Finance, Operate and Transfer (DBFOT) on Annuity Basis.

Project Road consists of three stretches, which includes total length of 65.40 Kms. the stretches are provided in the following table.

Table 1.1: Project Data.

Section	Length (Kms.)
Bankhal-Dogawan-Borawan-Savardevala	23.600
Beed - Mundi Road to Singaji thermal Power Plant& Mandla Village - Singaji Bridge	13.300
Mundi – DevlaKutla - Atoot	28.400
Total Length	65.400

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL Bankhalfata – Dogawa Tollways Ltd (BDTL) vide agreement dated 26 March 2018.

SHREM FINANCIAL PVT. LTD. appointed M/s RUKY Projects Pvt. Ltd. as consultants for Detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential.

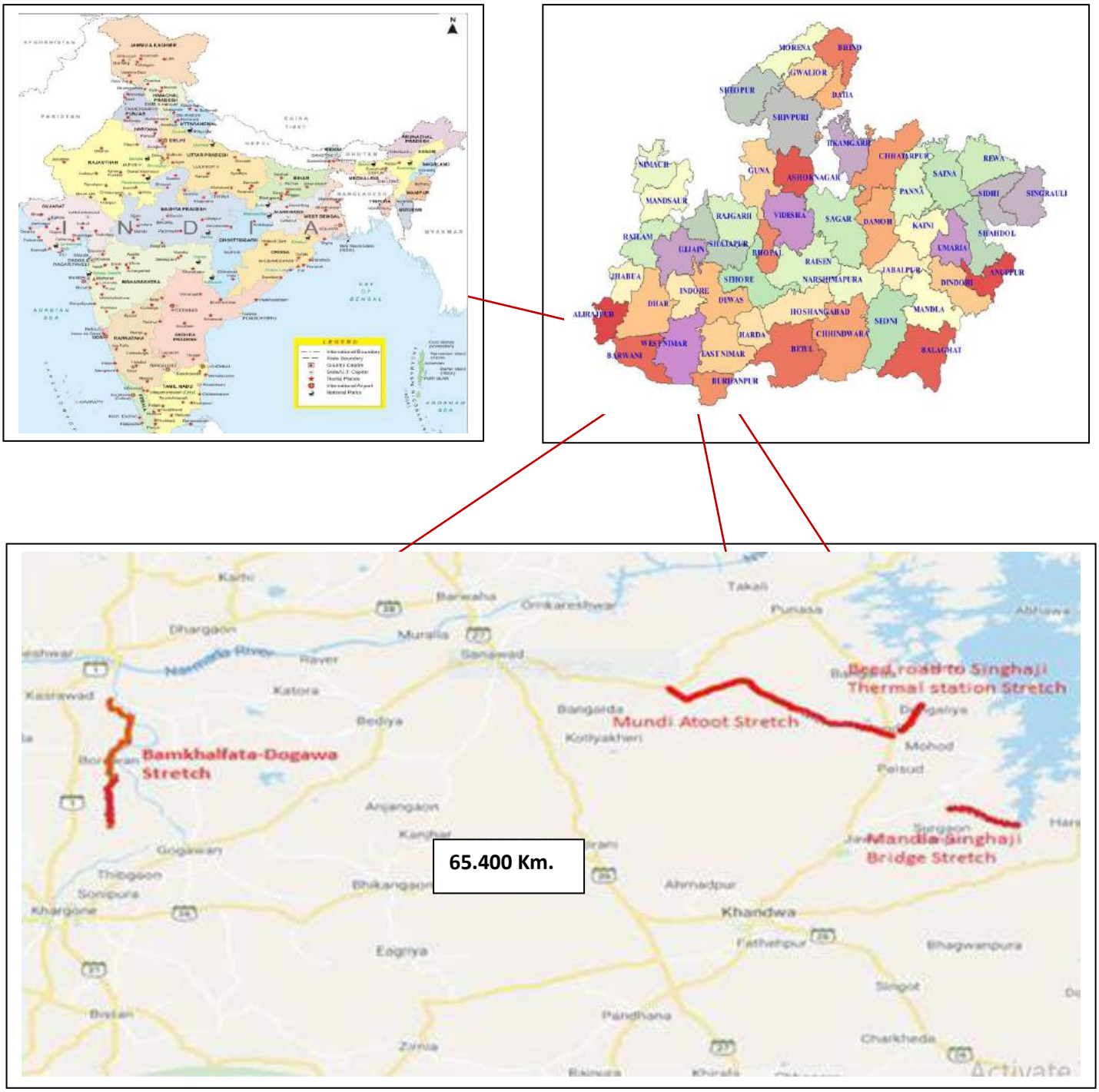

Figure 1.1: Project Location Map

Project Data:

The details of the Project are listed in the following table.

Table 1.2: Project Data.

S. No.	Particulars	Details
1	Name of the project	Development of Bankhlafata-Dogawa-Via-Borawa-Savardevala, Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA(3 MDR) in the State of Madhya Pradesh on DBFOT (Annuity) Basis
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Bankhalfata – Dogawa Toll ways Ltd (BDTL)
5	Name of the EPC Contractor	M/s Dilip Buildcon Limited
6	Design Length as per Schedule B of CA	65.4 Kms.
7	Date of LOA	13.12.2012
8	Date of Agreement	28.01.2013
9	EPC Cost	116.53 Cr.
10	Nature of contract	DBFOT (Annuity)
11	Toll collected by	MPRDCL
12	Concession Period	15 years from the Appointed date
13	Appointed date	14.08.2013
14	Concession end date	13.08.2028
15	Construction Period	730 days from the Appointed date
16	Scheduled Completion Date	13.08.2015
17	Date of issuance of Provisional Certificate (Commercial Operation Date)	31.03.2014
18	Date of issuance of Completion Certificate	01.07.2014
19	Annuity Amount (every six months)	Rs 9.9 Cr
20	Total Number of Annuities payable	29 Nos.
21	First Annuity Payment Date	18.10.2014
22	Total Number of Annuity Paid	13 Nos.

1.2 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the Consultancy work order is listed below:

- Review of various contractual documents,

- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features as per schedule B and Schedule C of CA including Change of scope are given in the following table.

Table 2.1: Salient Features

S.No.	Particulars	As per CA	As per COS*	As per Site
1	Total Length of Project	65.400 Kms.		65.400 Kms.
2	Total Length of 2 Lane(Flexible)	61.106 Kms.	-0.398 Kms.	60.708 Kms.
3	Total Length of 2 Lane(Rigid)	4.292 Kms.	0.398 Kms.	4.690 Kms.
4	Toll Plaza	Nil		Nil
5	Bus Bays / Bus Shelters	48 Nos.		48 Nos.
6	Truck Lay Bays	Nil		Nil
7	Major Junction	7 Nos.		7 Nos.
8	Minor Junctions	25 Nos.		25 Nos.
9	ROB	Nil		Nil
10	Major Bridges	3 Nos.		3 Nos.
11	Minor Bridges	11 Nos.		13* Nos.
12	Pipe Culverts	102 Nos.	-6	96 Nos.
13	Slab/Box Culverts	12 Nos.	0	12 Nos.

* As per site requirement 2 Nos of Minor Bridges are constructed

2.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the Typical Cross Section schedule during the construction as given below.

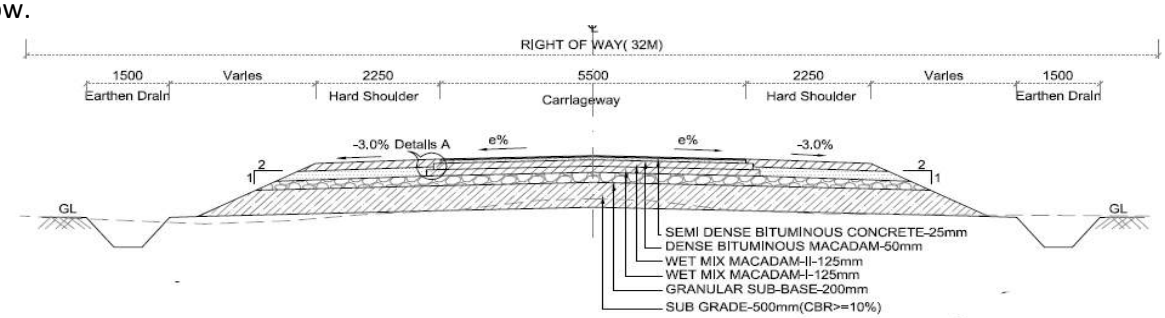

Figure 2.1: TCS 2.1 of Schedule D (Open Country-Plain/Rolling Terrain)

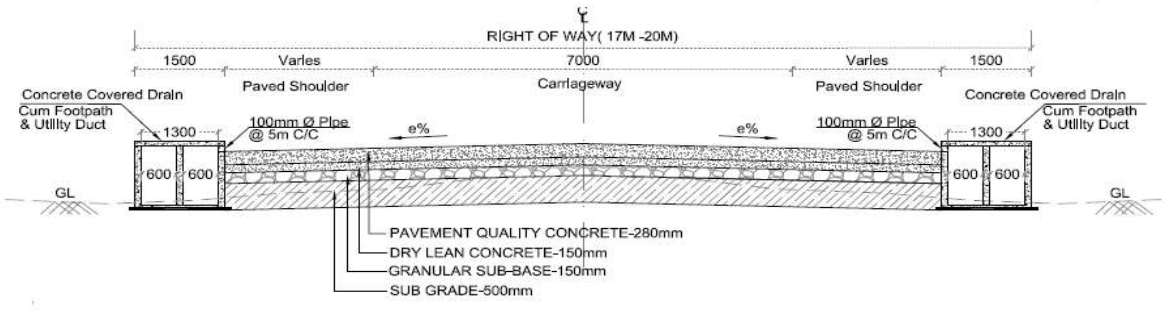

Figure 2.2: TCS 2.3 of Schedule D (Built-Up Area) 2 Lane Carriageway with Paved Shoulder

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Description	Length (m)	TCS Type
Section I Bankalfata - Dogawa					
1.	0+000	1+300	2L+ES	1300	TCS 2.1
2.	1+300	1+600	2L+PS	300	TCS 2.3
3.	1+600	2+150	2L+ES	550	TCS 2.1
4.	2+150	2+350	2L+PS	200	TCS 2.3
5.	2+350	5+700	2L+ES	3350	TCS 2.1
6.	5+700	5+900	2L+PS	200	TCS 2.3
7.	5+900	7+800	2L+ES	1900	TCS 2.1
8.	7+800	8+000	2L+PS	200	TCS 2.3
9.	8+000	10+850	2L+ES	2850	TCS 2.1
10.	10+850	11+400	2L+PS	550	TCS 2.3
11.	11+400	19+250	2L+ES	7850	TCS 2.1
12.	19+250	19+450	2L+PS	200	TCS 2.3
13.	19+450	23+500	2L+ES	4050	TCS 2.1
14.	23+500	23+670	2L+PS	170	TCS 2.3
Section II Punasa - Mundi					
15.	0+000	4+810	2L+ES	4810	TCS 2.1
16.	0+000	8+490	2L+ES	8490	TCS 2.1
Section III Mundi - Devala					
17.	0+000	0+350	2L+PS	350	TCS 2.3
18.	0+350	2+600	2L+ES	2250	TCS 2.1
19.	2+600	2+800	2L+PS	200	TCS 2.3
20.	2+800	6+750	2L+ES	3950	TCS 2.1
21.	6+750	7+100	2L+PS	350	TCS 2.3
22.	7+100	10+400	2L+ES	3300	TCS 2.1
23.	10+400	11+000	2L+PS	600	TCS 2.3
24.	11+000	16+200	2L+ES	5200	TCS 2.1

S. No.	From (Km.)	To (Km.)	Description	Length (m)	TCS Type
25.	16+200	16+400	2L+PS	200	TCS 2.3
26.	16+400	18+630	2L+ES	2230	TCS 2.1
27.	18+630	19+200	2L+PS	570	TCS 2.3
28.	19+200	21+300	2L+ES	2100	TCS 2.1
29.	21+300	22+000	2L+PS	700	TCS 2.3
30.	22+000	24+900	2L+ES	2900	TCS 2.1
31.	24+900	25+580	2L+PS	680	TCS 2.3
32.	25+580	25+700	2L+ES	120	TCS 2.1
33.	25+700	25+900	2L+PS	200	TCS 2.3
34.	25+900	28+430	2L+ES	2530	TCS 2.1
			Total (Kms.)	**65.400**	

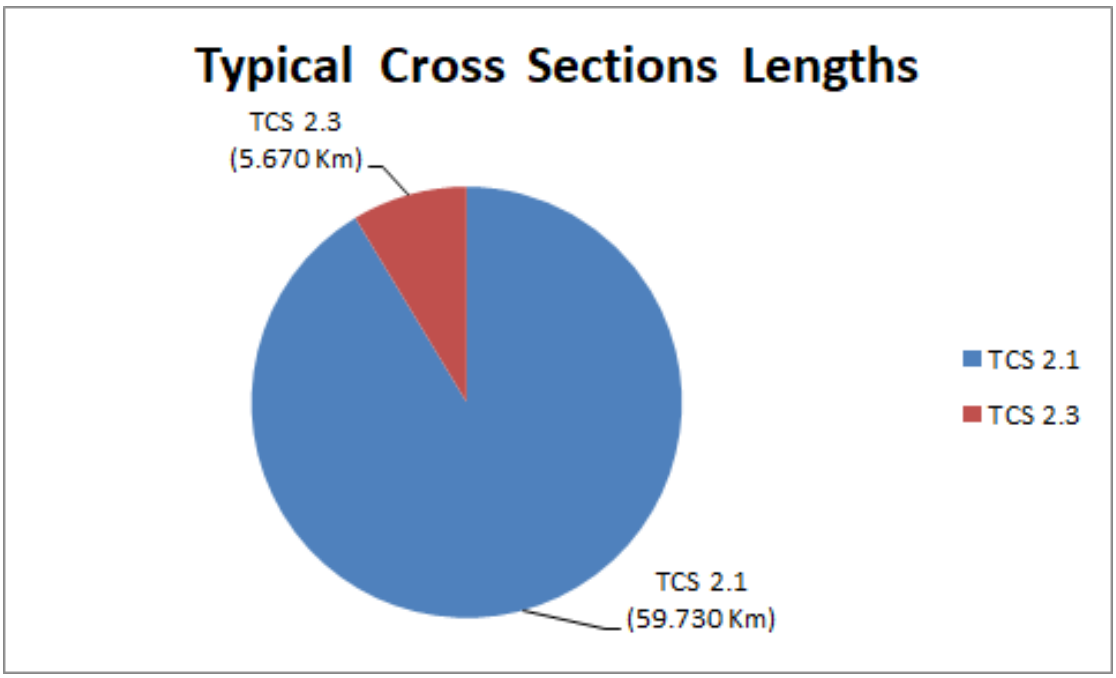

Figure 2.3: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the carriage way and to avoid accumulation of drainage from road side community on to the carriage way, RCC drains are constructed along the main carriage way on both flanks in Built-up sections as specified in Schedule B of the Concession Agreement in strict adherence to the Standard Specifications set forth in Schedule D of the Concession Agreement

- Accordingly, Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drain in open and rural areas.

2.4 Service Roads:

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment:

Bypasses are not provided for the project road. Total 9 No of realignments are present for the project road as per Schedule B of Concession Agreement. The total realignment length is 1.719 Kms. for total project road. The list of realignment sections is given below.

Table 2.3: Realignment sections for the Project road

S No	Design Chainage (Km.)		Length (Km.)
	From	TO	
Bankhlafata-Sovardevala			
1	1+950	2+050	0.100
2	17+150	17+300	0.150
3	20+500	20+600	0.100
Mandla-Singhaji Bridge Approach Road			
4	5+450	5+550	0.100
5	6+870	7+330	0.430
Mundi-Atoot NVDA			
6	1+680	1+815	0.135
7	5+730	6+010	0.280
8	12+490	12+650	0.160
9	26+411	26+675	0.264
Total Length			1.719

2.6 Intersections:

As per Schedule B of the Concession Agreement 7 Nos. of Major Junctions and 25 Nos. of Minor Junctions are developed. Details are given below.

Table 2.4: Summary of Junctions

S.No.	Chainage (Km.)	Side	Type of Junction	Junction category
Bankhalfata-Sarvardevala Road				
1	0+000	LHS RHS	X	Major
2	23+672	LHS RHS	X	Major
3	2+456	RHS	T	Minor
4	5+500	RHS	T	Minor
5	5+700	RHS	T	Minor
6	8+000	RHS	T	Minor
7	8+356	LHS	T	Minor
8	11+033	LHS	T	Minor

S.No.	Chainage (Km.)	Side	Type of Junction	Junction category
9	11+500	RHS	T	Minor
10	11+575	RHS	T	Minor
11	12+790	LHS	T	Minor
12	14+650	LHS	T	Minor
13	15+420	RHS	T	Minor
Punasa-Singhaji Thermal Power Plant				
14	0+000	LHS RHS	X	Major
15	3+990	LHS	Y	Major
16	4+390	LHS	T	Major
17	0+100	RHS LHS	Staggered	Minor
18	6+010	LHS	T	Minor
19	6+060	LHS RHS	Staggered	Minor
20	6+185	RHS	T	Minor
21	6+415	RHS	T	Minor
Singhaji Bridge approach road				
Mundi-Atoot NVDA				
22	0+000	LHS RHS	X	Major
23	28+432	LHS RHS	X	Major
24	3+010	LHS	T	Minor
25	16+180	LHS	T	Minor
26	17+030	LHS	T	Minor
27	17+100	LHS RHS	X	Minor
28	18+700	RHS	T	Minor
29	19+200	RHS	T	Minor
30	25+350	RHS	T	Minor
31	25+510	RHS	T	Minor
32	25+600	LHS	T	Minor

2.7 Grade Separated Structures and underpasses:

Vehicular underpasses are not proposed on the Project road.

2.8 Road Over Bridge(ROB):

ROBs are not proposed in the project road.

2.9 Summary of the Carriageway Details:

Table 2.5: Summary of Carriageway Details

S.No.	Description	Flexible (Km.)	Rigid (Km.)	TCS Type
1	Total Length of 2 lane (Flexible)	60.710		Fig 2.1 of Schedule D of CA
2	Total Length of 2 lane (Rigid))		4.690	Fig 2.3 of Schedule D of CA
3	Total length	65.40		
Type Of Alignment				
4	New alignment			
5	Realignment	1.719		
6	Strengthening			
7	Reconstruction	63.681		
8	Total length of the project	65.400		

2.10 Summary of Structures:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.6: Summary of Structures

S.No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	3	1	2	3
2	Widening		1	20	3
3	Reconstruction		5	55	5
4	New		1	25	1
5	Improvement				
6	Existing Causeway is reconstructed as minor bridge		3		
	Total	**3**	**11**	**102**	**12**

Details of the condition survey carried out on Structures are provided at ANNEXURE-2&3

2.11 Bus shelters:

As per the provisions of Schedule C of the CA, 48 Nos. Bus shelters are provided. Details such as Chainage Location and Name of Village are listed in the following table.

Table 2.7: List of Bus shelters

S.No.	Chainage (Km.)	Side	Location
Section-I			
1	1+100	LHS	Near Raypura Village
2	1+200	RHS	Near Raypura Village
3	3+000	LHS	Near Sonkhedi Village

S.No.	Chainage (Km.)	Side	Location
4	3+100	RHS	Near Sonkhedi Village
5	5+420	LHS	Near Sanghawal Village
6	5+480	RHS	Near Sanghawal Village
7	7+700	LHS	Near Utawad Village
8	7+800	RHS	Near Utawad Village
9	8+500	LHS	Village Road
10	8+600	RHS	Village Road
11	11+600	LHS	Village Road
12	11+700	RHS	Village Road
13	14+500	LHS	Bahaderpura Village
14	14+600	RHS	Bahaderpura Village
15	15+500	LHS	Village Road
16	15+400	RHS	Village Road
17	19+320	RHS	Marjapur Village
18	23+400	LHS	Dogawa Village
19	23+500	RHS	Dogawa Village
Section II			
20	3+850	LHS	Singharwal Junction
21	3+990	RHS	Singharwal Junction
22	4+300	LHS	Dharkhadi Junction
23	4+480	RHS	Dharkhadi Junction
24	0+150	LHS	Near Manadal
25	0+220	RHS	Near Manadal
26	5+990	LHS	Near Selda mal
27	6+110	RHS	Near Selda mal
Section III			
28	0+050	LHS	Mundi Village
29	0+050	RHS	Mundi Village
30	3+060	LHS	Oborani Village
31	3+050	RHS	Oborani Village
32	6+850	LHS	Bamori Village
33	6+850	RHS	Bamori Village
34	10+550	LHS	Jalwa Village
35	10+550	RHS	Jalwa Village
36	16+380	LHS	Dewala Village
37	16+380	RHS	Dewala Village
38	17+200	LHS	Punasa
39	17+200	RHS	Punasa
40	18+670	LHS	Kutla Village

S.No.	Chainage (Km.)	Side	Location
41	18+670	RHS	Kutla Village
42	21+800	LHS	Dood Village
43	21+800	RHS	Dood Village
44	25+300	LHS	Atoot Village
45	25+300	RHS	Atoot Village
46	25+900	RHS	Atoot Village
47	28+400	LHS	Punasa
48	28+400	RHS	Punasa

2.12 Other Project Facilities Provided as per Schedule C of CA:

- Road side furniture: Sign Boards KM stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic Safety Devices: Metal Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of the Concession Agreement.
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and being maintained.

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KM 0+000

KM 28+000

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA

KM 0+000

KM 2.200

Figure 2.4: Existing Road Features

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in **Table 3.1** and few representative photographs are given at the end of the Chapter

Table 3.1: Road Inventory

S.No.	Features	Remarks
1.	Terrain	Plain and Rolling
2.	Land Use	Predominantly agriculture & balance is built up
3.	Two Lane length	65.400 Kms.
4.	Earthen shoulder	1.0 m to 1.5m Width on site
5.	Realignments	1.719 Kms.
6.	Junctions	07Nos Major Junctions, 25 Nos Minor Junctions
7.	Toll Plaza	Nil
8.	Sign boards	Sign boards are provided as per highway requirements
9.	Road Markings	Lane markings are provided as per highway requirements
10.	Bus Bays /shelters	48 nos.
11.	Avenue plantation	Provided along the Project road

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on visual observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is

to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The Summary of field measurements of the Pavement Condition survey is tabulated in the standard proforma as per IRC: SP-19 and is given in ANNEXURE 1.

Table 3-3: Pavement condition summary

Chainage		Length (Kms.)	Condition
From (km.)	To (Km.)		
Section-I			
0+000	23+670	23.670	Good
Section-II			
0+000	4+810	4.810	Good
0+000	8+490	8.490	Good
Section-III			
0+000	28+430	28.430	Good

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KM 28+000

KM 24+900

KM 11+800

KM 9+100

PUNASA - MUNDI ROAD TO SINGAJI THERMAL POWER PLANT

KM 1+200

KM 1+400

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA

KM 0+000

KM 3+800

Figure 3.1: Representative Photographs of Pavement Condition

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, Detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The details of structures along the project highway are listed below.

Table 4.1 List of Structures

S.No.	Type of Structure	Numbers
1	Major bridges	03 Nos.
2	Minor Bridge	13 Nos.
3	Pipe culverts	96 Nos.
4	Slab/Box Culverts	12 Nos.

The Major bridges superstructure is of RCC Solid slab wall type piers and abutments with open foundation. The minor bridges of superstructure are RCC solid slab and the substructures are of RCC/PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges:

The total length of the Major Bridge at Km. 13+369 is 70.0m with 5 spans. The superstructure consists of RCC Solid slab. Piers and abutments are of RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

The total length of the Major Bridge at Km. 25+611 is 60.6m with 6 spans. The superstructure consists of RCC Solid slab. All piers and abutments are regular RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

The total length of the Major Bridge at Km 25+939 is 80.8m with 8 spans. The superstructure consists of RCC Solid slab. All piers and abutments are regular RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

Table 4.2 List of Major Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	13+369	5 x 14.0	70.0
2	25+611	6 x 10.1	60.6
3	25+939	8 x 10.1	80.8

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and strip seal expansion joints are to be carried out.

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KM 13+369

KM 25+611

KM 25+939

Figure 4.1: Representative photos of Major Bridges.

4.4 Details of Minor Bridges

The details of Minor bridges in the project stretch are given below. The type of superstructure for minor bridges are RCC girders, RCC solid slab and RCC Box type. The substructures are PCC/RCC/Masonry conventional wall types supported on open foundations. Expansion joints are either buried type or strip seal and bearings are of tar paper and elastomeric bearings. RCC crash barriers are provided on all the structures.

Table 4.3 Inventory of Minor Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
Bankhalfata-Dogawa road				
1	0+533	1x10.6+1x9.4+1x10.6	30.6	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.
2	2+000	3x11.4	35.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
3	2+781	2X 7.0	14	Minor Bridge consists of RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.
4	6+973	2 x 17.0	34	Minor Bridge consists of RCC precast girder superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat, and elastomeric Bearings and strip seal expansion joints.
5	10+459	3x8.4	26.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
6	12+193	3x8.4	26.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
7	14+054	2x8.4	18.4	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
Mundi-Atoot Road				
1	2+513	2 x 6.4	13.9	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
2	6+650	1x 6.8	7.3	Minor Bridge consists of RCC single cell box type. Other features are RCC crash barrier, bituminous wearing coat.
3	16+154	2 x 8.4	18.4	Minor Bridge consists of RCC twin cell Box type structure. Other features are RCC crash barrier, bituminous wearing coat.
4	17+098	4 x 8.6	34.4	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier,

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
				bituminous wearing coat.
5	18+486	2 x 6.4	14.4	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
Mundi-Beed road -Power plant				
1	1+300	4 x 10.3	41.2	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.

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KM 2+513

KM 16+154

KM 18+486

Figure 4.2: Representative Photos of Minor Bridges.

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good for some of the pipe culverts. Vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given in the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. Details of the Slab/Box Culverts

There are 12 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4 List of Slab/Box Culverts

S.No.	Chainage (Km.)	Span (m)	Vent Size (m)
Bankhlafata Section			
1	2+781	1 x2.1	1.6
2	18+01	1 x 3.4	2.8
3	18+631	1 x 5.2	3.20
Mundi Atoot Section			
4	2+937	1 x2.8	2.5
5	3+387	1 x3.4	2.0
6	3+424	1 x3.4	2.0
7	6+18	1 x4.0	4.0
8	6+726	1 x 2.5	1.8
9	17+866	1 x 2.3	1.25
10	18+701	1 x3.70	1.90
11	25+23	1 x 4.2	2.80
12	27+369	1 x1.4	2.5

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

4.5.2. Details of the Pipe Culverts

There are 96 Nos. of pipe culverts in the project road. The details of the culverts are as given below.

Table 4.5 List of Pipe Culverts

S.No.	Chainage (Km.)	No. of Row/Dia.(m.)	S. No.	Chainage (Km.)	No. of Row/Dia.(m.)
1	0+448	1 x 0.9	49	3+177	2 x 0.9
2	0+919	1 x 1.2	50	3+24	1 x 1.2
3	1+318	2 x 1.2	51	3+598	1 x 1.2
4	2+463	1 x 1.2	52	3+694	1 x 1.0
5	4+518	2 x 0.9	53	3+802	1 x 1.0
6	5+709	1 x 1.2	54	4+018	1 x 1.0
7	6+015	1 x 1.2	55	4+142	1 x 1.2
8	7+277	1 x 1.2	56	4+406	1 x 1.2
9	8+112	1 x 1.2	57	4+578	1 x 1.2
10	8+309	1 x 1.2	58	4+743	1 x 1.2
11	8+891	2 x 0.9	59	4+995	2 x 0.9
12	9+200	1 x 1.2	60	5+14	1 x 1.2
13	10+200	1 x 1.2	61	5+529	1 x 1.2

S.No.	Chainage (Km.)	No. of Row/Dia.(m.)
14	10+809	1 x 1.2
15	11+304	2 x 0.9
16	12+743	2 x 1.2
17	12+886	1 x 1.2
18	13+757	3 x 1.2
19	14+054	2 x 1.2
20	14+229	1 x 1.2
21	16+115	2 x 0.9
22	17+212	1 x 1.2
23	19+492	1 x 1.2
24	20+504	1 x 1.2
25	22+700	1 x 1.2
Mundi Thermal Power Plant section		
26	0+145	1 x 1.2
27	1+398	1 x 1.2
28	1+604	1 x 1.2
29	1+754	1 x 1.2
30	2+331	1 x 1.2
31	2+721	1 x 1.2
32	2+894	1 x 1.2
33	3+526	1 x 1.2
34	3+626	1 x 1.2
35	4+026	1 x 1.2
36	4+206	1 x 1.2
37	4+359	1 x 1.2
38	4+480	1 x 1.2
39	4+581	1 x 1.2
40	4+730	2 x 0.9
Mundi Singhaji Bridge section		
41	0+384	1 x 1.2
42	0+599	1 x 1.2
43	1+566	1 x 1.2
44	1+743	1 x 1.2
45	1+964	1 x 1.2
46	2+618	1 x 1.2
47	2+809	1 x 1.2
48	2+947	1 x 1.2

S. No.	Chainage (Km.)	No. of Row/Dia.(m.)
62	5+623	1 x 1.0
63	5+831	1 x 1.0
64	6+005	1 x 1.0
65	6+833	1 x 1.2
66	6+907	1 x 1.2
67	7+373	1 x 1.2
68	8+020	1 x 1.2
Mundi Atoot Section		
69	0+396	1 x 1.0
70	0+809	1 x 1.0
71	1+921	1 x 1.2
72	2+948	1 x 1.2
73	3+346	1 x 1.2
74	3.437	1 x 1.2
75	7+124	1 x 1.2
76	8+492	1 x 1.2
77	8+608	1 x 1.2
78	9+524	1 x 1.2
79	9+99	2 x 0.9
80	10+366	1 x 1.2
81	10+758	1 x 1.2
82	11+124	1 x 1.2
83	11+466	2 x 0.9
84	11+581	2 x 0.9
85	12+176	1 x 1.2
86	12+608	1 x 1.0
87	14+067	1 x 1.0
88	15+251	1 x 1.2
89	16+763	1 x 1.0
90	17.579	
91	19+52	1 x 1.0
92	21+08	1 x 1.2
93	23+937	1 x 1.2
94	25+413	1 x 1.2
95	26+092	1 x 1.2
96	21+08	1 x 1.2

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General:

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design:

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the top surface of successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

The project road has three sections i.e. Section-1 Bankhalfata-Sarvardevala, Section-II Punasa-Singhaji power plant and Singhaji Bridge approach and Section-III Mundi-Attot Nvda. These three sections have been considered as single homogeneous section HS: As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	10%
2	Design Life (Years)	15 years
3	Design Traffic for BT (MSA)	2 MSA actual for 8 Years 5 MSA Adopted for 8 Years
4	Design Traffic for Granular Layers (MSA)	4.6 MSA actual for 15 Years 10 MSA Adopted for 15 Years
5	Surface course (SDBC)	25 mm
6	Binder course (DBM)	50 mm
7	Base course (WMM)	250 mm
8	Sub Base course (GSB)	200 mm

*Traffic estimated at pavement design stage is 2 MSA and 4.6 MSA for 8 Years and 15 Years respectively which is less than the specified MSA in Schedule D of CA (10MSA). Hence 10 MSA (5 MSA for BT for Initial stage) is adopted in pavement design for further evaluation of crust thickness.

5.3 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements". Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. "Guidelines for the Design of Plain Jointed Rigid Pavements for Highways".

Traffic considered in pavement design 5 MSA for Initial stage (8 Years) for BT and 10MSA for (15 Years) granular layers is more than the traffic forecast during the design stage. Hence the pavement design adopted is found in order.

Rigid Pavement

Pavement crust thickness in the pavement design report for rigid pavement is as follows: -

Table 5.2: Rigid Pavement Design for Toll Plaza

Description	HS-I Parameters
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	280
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Separation Membrane (Microns)	125
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	500

5.4 Overlay during operation and maintenance:

The pavement has been designed to cater traffic 5 MSA (8 Years – up to 2021) for BT and 10 MSA (15 Years – up to 2028) for Granular layers for entire project road (up to 2028), whereas the actual traffic is 2 MSA and 4.6 MSA for 8 Years and 15 Years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule:

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement - Proposed on or before 2021 and 2028.
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done once in 10 years from construction.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP-88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Fair
		Village sign Board	Available as per site requirement	Fair
		Informatory Boards	Available as per site requirement	Fair

S. No.	Item Description		Status	Condition
		Object Hazard Markers at culverts	Available as per site requirement	Fair
2	Road Marking	Lane Marking	Available as per site requirement	Fair
3	W Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of important corridor. It is the Concessionaire's duty and responsibility to provide a safety and thorough fare for the road users by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

6.3 Conclusion

Safety arrangements done for road users along the project road are found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

MUNDI – DEVLAKUTLA - ATOOT

Km. 2+500

Km. 6+400

Km. 10+400

Km. 8+200

Km. 10+4000

Km. 14+200

Km. 10+500

Km. 27+400

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA

Km. 2+200

Km. 3+800

Km. 5+600

Km. 7+400

Km. 7+500

Km. 8+000

Figure 6.1: Representative Photos During Road Safety Audit

CHAPTER 7. OPERATION AND MAINTENANCE

7.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines.

7.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

Visual Inspection: Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

Detailed Inspection: Detailed Inspections often (require some measuring instruments) are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

Thorough Inspection: Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to Authority not later than 45 days prior to beginning of each accounting year during the operation period.

7.3 Operations:

Traffic Flow Operation & Traffic Management Plan:

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. carrying out preventive and periodic maintenance of the Project road;
3. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
4. undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs
5. Functioning of the lighting system;
6. Functioning of the Patrolling System

7 Functioning of rescue and medical aid services
8 Ambulance as and when required
9 Functioning of the Project Facilities
10 Administrative, Operational and Maintenance Base Camp
11 Truck Parking Lay bays
12 Pickup Bus stops / Bus Bays
13 Protection of the environment and provision of equipment and materials therefor;
14 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
15 complying with Safety Requirements in accordance with Article 18.

7.4 Maintenance of Project Road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.
Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 7.1 Schedule and status of Periodic Maintenance

Description	Schedule	Status
1st Periodic Maintenance	2021	Planned to execute
2nd Periodic Maintenance	2028	Planned to execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

7.5 Review of Test Reports

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of September 2020. As per Schedule K of CA, If the stretch exceeds 3000mm in a KM shall be rectified. No stretch exceeded the permissible limit in the Project Road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in September 2019. The test report has been verified and found within permissible limits as per IRC 81.

7.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in ANNEXURE 4.

Table 7.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.191	0.377		0.00	0.57
2021	0.196	0.389	11.41	0.00	12.00
2022	0.202	0.400		0.00	0.60
2023	0.208	0.412		0.00	0.62
2024	0.215	0.425		0.00	0.64
2025	0.221	0.438		0.00	0.66
2026	0.228	0.451		0.00	0.68
2027	0.235	0.464	6.73	0.00	7.43
2028	0.242	0.478	6.90	0.00	7.62
2029	0.073	0.144		0.00	0.22
Total	2.01	3.98	25.04	0.01	**31.04**

CHAPTER 8. REVIEW OF CONCESSION AGREEMENT

8.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project road on the Site set forth in Schedule-A of CA and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- operation and maintenance of the Project road in accordance with the provisions of this Agreement;
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental

8.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5**.

8.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

8.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Contract Agreement

8.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction, an Aggregate sum, not less than 20% of the Total Project Cost.

8.6 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on successful completion, the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the Concession Agreement. Copy of the Provisional Completion Certificate issued is enclosed at **Annexure 6**

8.7 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Completion Certificate, Completion Certificate shall be issued to the Concessionaire.
- Copy of the Completion Certificate issued is enclosed at **Annexure 7**.

8.8 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

8.9 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDC and the same are given in ANNEXURE 9

8.10 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the Contract Agreement.

8.11 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (the "**Maintenance Requirements**").

8.12 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

8.13 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

8.14 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

8.15 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

8.16 Annuity (Clause 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y of CA, the sum of Rs 9.90 Crores.

As per Clause 27.2.2, In case the COD is different from the Schedule Y of CA, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date are shown below.

Table 8.1 Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1st Annuity	18-Oct-14
2	2nd Annuity	31-Mar-15
3	3rd Annuity	5-Oct-15
4	4th Annuity	04-Apr-16
5	5th Annuity	5-Oct-16
6	6th Annuity	10-Apr-17
7	7th Annuity	31-Oct-17
8	8th Annuity	27-Apr-18
9	9th Annuity	16-Oct-18
10	10th Annuity	04-Apr-19
11	11th Annuity	1-Oct-19
12	12th Annuity	21-Apr-20
13	13th Annuity	30-Sep-20

All the annuities are being paid regularly by the Authority.

8.17 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

8.18 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 9. INSURANCE

9.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 9.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Limited	321300441910001991	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier

Copy of the insurance copy is enclosed at **Annexure 8.**

CHAPTER 10. CONCLUSION

10.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

10.2 Pavement Condition

- Pavement condition is good.
- Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations.
- Shoulder condition is fair.

10.3 Condition of Structures

- General condition of Bridges is good.
- No major structural defects were noticed
  Condition of Culverts is good.
- Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

10.4 Road safety

- Pavement marking is in good condition and number of sign boards are provided as per Highway requirement. The condition of signboards is good.
- Other road appurtenances like metal beam crash barriers and Kerb are intact

10.5 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance is scheduled in 2021.

10.6 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexures

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
Bankhlafata Dogawa																
0.000	1.000								G		ES	F	F	ULD	F	
1.000	2.000								G		ES	F	F	ULD/LD	F	
2.000	3.000								G		ES	F	F	ULD/LD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G		ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD/LD	F	
6.000	7.000								G		ES	F	F	ULD	F	
7.000	8.000								G		ES	F	F	ULD/LD	F	
8.000	9.000								G		ES	F	F	ULD	F	
9.000	10.000								G		ES	F	F	ULD	F	
10.000	11.000								G		ES	F	F	ULD/LD	F	
11.000	12.000								G		ES	F	F	ULD/LD	F	
12.000	13.000								G		ES	F	F	ULD	F	
13.000	14.000								G		ES	F	F	ULD	F	
14.000	15.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
15.000	16.000								G		ES	F	F	ULD	F	
16.000	17.000								G		ES	F	F	ULD	F	
17.000	18.000								G		ES	F	F	ULD	F	
18.000	19.000								G		ES	F	F	ULD	F	
19.000	20.000								G		ES	F	F	ULD/LD	F	
20.000	21.000								G		ES	F	F	ULD	F	
21.000	22.000								G		ES	F	F	ULD	F	
22.000	23.000								G		ES	F	F	ULD	F	
23.000	23.670								G		ES	F	F	ULD/LD	F	
Mundi To ThermalPower plant																
0.000	1.000								G	0.5	ES	F	F	ULD	F	
1.000	2.000								G		ES	F	F	ULD	F	
2.000	3.000								G		ES	F	F	ULD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	4.810								G		ES	F	F	ULD	F	
Shingaji Bridge Road																
0.000	1.000								G	0.5	ES	F	F	ULD/LD	F	
1.000	2.000								G	1	ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
2.000	3.000								G		ES	F	F	ULD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G	1	ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD/LD	F	
6.000	7.000								G	0.5	ES	F	F	ULD/LD	F	
7.000	8.000								G		ES	F	F	ULD	F	
8.000	8.490								G					ULD	F	
Mundi Atoot section																
0.000	1.000								G					ULD/LD	F	
1.000	2.000								G		ES	F	F	ULD	F	
2.000	3.000								G		ES	F	F	ULD/LD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G		ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD	F	
6.000	7.000								G		ES	F	F	ULD/LD	F	
7.000	8.000								G		ES	F	F	ULD/LD	F	
8.000	9.000								G		ES	F	F	ULD	F	
9.000	10.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
10.000	11.000								G		ES	F	F	ULD/LD	F	
11.000	12.000								G		ES	F	F	ULD	F	
12.000	13.000								G		ES	F	F	ULD	F	
13.000	14.000								G		ES	F	F	ULD	F	
14.000	15.000								G		ES	F	F	ULD	F	
15.000	16.000								G		ES	F	F	ULD	F	
16.000	17.000								G		ES	F	F	ULD/LD	F	
17.000	18.000								G	0.5	ES	F	F	ULD	F	
18.000	19.000								G		ES	F	F	ULD/LD	F	
19.000	20.000								G	0.5	ES	F	F	ULD/LD	F	
20.000	21.000								G	0.5	ES	F	F	ULD	F	
21.000	22.000								G		ES	F	F	ULD/LD	F	
22.000	23.000								G	1	ES	F	F	ULD	F	
23.000	24.000								G	1	ES	F	F	ULD	F	
24.000	25.000								G	0.5	ES	F	F	ULD/LD	F	
25.000	26.000								G				F	ULD/LD	F	
26.000	27.000								G		ES	F	F	ULD	F	
27.000	28.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
28.000	28.430								G		ES	F	F	ULD	F	

Annexure 2: Condition of Bridges

S.No.	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
Bhamkalfata-Dogawa road										
1	0+533	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	-
2	2+000	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
3	2+781	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
4	6+973	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	10+459	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
6	12+193	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
7	14+054	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
Mundi-Atoot Road										
8	2+513	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
9	6+650	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
10	16+154	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
11	17+098	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
12	18+486	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
Mundi-Beed road -Power plant										
13	1+300	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good

Annexure 3: Condition of Culverts

Box/Slab Culverts

S.No.	Chainage	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	2.781	Good	Good	Fair	Fair	Fair
2	18.01	Good	Good	Fair	Fair	Fair
3	18.631	Good	Good	Fair	Fair	Fair
4	2.937	Good	Good	Fair	Fair	Fair
5	3.387	Good	Good	Fair	Fair	Fair
6	3.424	Good	Good	Fair	Fair	Fair
7	6.18	Good	Good	Fair	Fair	Fair
8	6.726	Good	Good	Fair	Fair	Fair
9	17.866	Good	Good	Fair	Fair	Fair
10	18.701	Good	Good	Fair	Fair	Fair
11	25.23	Good	Good	Fair	Fair	Fair
12	27.369	Good	Good	Fair	Fair	Fair

Hume Pipe Culverts

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0.448	Good	Fair	Fair	Fair
2	0.919	Good	Fair	Fair	Fair
3	1.318	Good	Fair	Fair	Fair
4	2.463	Good	Fair	Fair	Fair
5	4.518	Good	Fair	Fair	Fair
6	5.709	Good	Fair	Fair	Fair
7	6.015	Good	Fair	Fair	Fair
8	7.277	Good	Fair	Fair	Fair
9	8.112	Good	Fair	Fair	Fair
10	8.309	Good	Fair	Fair	Fair
11	8.891	Good	Fair	Fair	Fair
12	9.2	Good	Fair	Fair	Fair
13	10.2	Good	Fair	Fair	Fair
14	10.809	Good	Fair	Fair	Fair
15	11.304	Good	Fair	Fair	Fair
16	12.743	Good	Fair	Fair	Fair
17	12.886	Good	Fair	Fair	Fair
18	13.757	Good	Fair	Fair	Fair
19	14.054	Good	Fair	Fair	Fair
20	14.229	Good	Fair	Fair	Fair
21		Good	Fair	Fair	Fair

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
22	16.115	Good	Fair	Fair	Fair
23	17.212	Good	Fair	Fair	Fair
24	19.492	Good	Fair	Fair	Fair
25	20.504	Good	Fair	Fair	Fair
26	22.7	Good	Fair	Fair	Fair
27	0.145	Good	Fair	Fair	Fair
28	1.398	Good	Fair	Fair	Fair
29	1.604	Good	Fair	Fair	Fair
30	1.754	Good	Fair	Fair	Fair
31	2.331	Good	Fair	Fair	Fair
32	2.721	Good	Fair	Fair	Fair
33	2.894	Good	Fair	Fair	Fair
34	3.526	Good	Fair	Fair	Fair
35	3.626	Good	Fair	Fair	Fair
36	4.026	Good	Fair	Fair	Fair
37	4.206	Good	Fair	Fair	Fair
38	4.359	Good	Fair	Fair	Fair
39	4.48	Good	Fair	Fair	Fair
40	4.581	Good	Fair	Fair	Fair
41	4.73	Good	Fair	Fair	Fair
42	0.384	Good	Fair	Fair	Fair
43	0.599	Good	Fair	Fair	Fair
44	1.566	Good	Fair	Fair	Fair
45	1.743	Good	Fair	Fair	Fair
46	1.964	Good	Fair	Fair	Fair
47	2.618	Good	-	Fair	Fair
48	2.809	Good	Good	Fair	Fair
49	3.177	Good	-	Fair	Fair
50	3.24	Good	Good	Fair	Fair
51	3.598	Good	Good	Fair	Fair
52	3.694	Good	Good	Fair	Fair
53	3.802	Good	Good	Fair	Fair
54	4.018	Good	Good	Fair	Fair
55	4.142	Good	Good	Fair	Fair
56	4.406	Good	Good	Fair	Fair
57	4.578	Good	Good	Fair	Fair
58	4.743	Good	Good	Fair	Fair
59	4.995	Good	Good	Fair	Fair
60	5.14	Good	Good	Fair	Fair

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
61	5.529	Good	Good	Fair	Fair
62	5.623	Good	Good	Fair	Fair
63	5.831	Good	Good	Fair	Fair
64	6.005	Good	Good	Fair	Fair
65	6.833	Good	Good	Fair	Fair
66	6.907	Good	Good	Fair	Fair
67	7.373	Good	Good	Fair	Fair
68	8.02	Good	Good	Fair	Fair
69	0.396	Good	Good	Fair	Fair
70	0.809	Good	Good	Fair	Fair
71	1.921	Good	Good	Fair	Fair
72	2.948	Good	Good	Fair	Fair
73	3.346	Good	Good	Fair	Fair
74	3.437	Good	Good	Fair	Fair
75	7.124	Good	Good	Fair	Fair
76	8.492	Good	Good	Fair	Fair
77	8.608	Good	Good	Fair	Fair
78	9.524	Good	Good	Fair	Fair
79	9.99	Good	Good	Fair	Fair
80	10.366	Good	Good	Fair	Fair
81	10.758	Good	Good	Fair	Fair
82	11.124	Good	Good	Fair	Fair
83	11.466	Good	Good	Fair	Fair
84	11.581	Good	Good	Fair	Fair
85	12.176	Good	Good	Fair	Fair
86	12.608	Good	Good	Fair	Fair
87	14.067	Good	Good	Fair	Fair
88	15.251	Good	Good	Fair	Fair
89	16.763	Good	Good	Fair	Fair
90	17.579	Good	Good	Fair	Fair
91	19.52	Good	Good	Fair	Fair
92	21.08	Good	Good	Fair	Fair
93	23.937	Good	Good	Fair	Fair
94	25.413	Good	Good	Fair	Fair
95	26.092	Good	Good	Fair	Fair
96	21.08	Good	Good	Fair	Fair

Annexure 4: Operation & Maintenance Cost

Routine Maintenance cost for 1 year

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	65.4	12	4	350	10,98,720	04 nos of Labour
2	ROW Cleaning	Half yearly	Km	32.7	2	5	350	1,14,450	5 Nos of labour per KM (50% of the Project length)
3	Cleaning of Culverts	Half yearly	Nos	108	2	2	650	2,80,800	3 nos of Labour along with JCB or Excavator
4	Road Furniture Cleaning	Quarterly	Km	65.4	4	2	350	1,83,120	02 nos of Labour
5	Maintenance of Bus shelters	Monthly	Nos	48	6	2	350	2,01,600	2 nos/ Bus shelter/month
6	Bridges	Half yearly	Nos	13	2	2	350	18,200	02 nos of Labour for removal of vegetation/Structure
								18,96,890	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	10000	10,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
								10,000	
								19,06,890.00	

Incidental cost for 1 year

S.No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	5036	516	25,98,576	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	1	1	534	168	89,712	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	981	225	6,62,175	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	65.4	4	16	2250	1,44,000	5 % of total stones per year (unable to understand the backup)
Total amount for 1 Year								**37,74,463**	

Operational Expenses

S.No.	PARTICULARS	Amount
1	**Stationary**	₹ 10,000
	Total Amount	**₹ 10,000**

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
Major Maintenance - Highway	01-04-2021	11,34,24,423	0.20	3.0%	11,41,04,970	11.41
Major Maintenance - Highway	01-04-2027	5,67,12,212	6.20	3.0%	6,72,60,683	6.73
Major Maintenance - Highway	01-04-2028	5,67,12,212	7.20	3.0%	6,89,62,049	6.90
				Total	₹ 25,03,27,702	25.04

Major maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	4,74,810.00	14.00	66,47,340	4,74,810.00	14.00	66,47,340
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a	Cum	10,683.23	7,480.00	7,99,10,523	10,683.23	7,480.00	7,99,10,523

	hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.							
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	-	6,800.00		-	6,800.00	
4	Micro surfacing	Sqm	1,18,702.50	160.00	1,89,92,400	1,18,702.50	160.00	1,89,92,400
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**10,55,50,263**			**10,55,50,263**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref to	Sqm	15,260.00	516.00	78,74,160	15,260.00	516.00	78,74,160

	Technical specification 803.							
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
				-	**78,74,160**		-	**78,74,160**
	Grand Total				**11,34,24,423**			**11,34,24,423**

Annexure 5 : Letter of Acceptance

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2766198, 203, 215, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in

MPRDC

No. MPRDC/BOT/MDR/P-I/2012/ 11030
Bhopal, dated 13 December, 2012

M/s Dilip Buildcon Ltd.,
E-5/99, Arera Colony,
Bhopal
Fax: 4247574

Sub: **Development of Bamkhalfata-Dogawa-via-Borawa-Sarvadevala, Punasa-Mundi-Singhaji (Thermal Power Plant Road, Singhaji Bridge Approach Road & Mundi-Devala-Khutala-Attot NVDA Major District Roads on BOT basis under Package-I.**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of Bamkhlafata-Dogawa-via-Borawa-Sarvardevala, Punasa-Mundi-Singhanji & Beed-Mundi-Davala-Khutala-Attoot NVDA Major District Roads (Package-I) on BOT (Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. **9.90 crores (Rupees nine crores ninety lacs only)** as Annuity Amount payable in terms of Clause 27 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA**

(Arun Paliwal)
Dy General Manager

Connecting People Through quality infrastructure

Annexure 6: Provisional Completion Certificate

VAIDYA ORGANISATION
INFRASTRUCTURE DEVELOPMENT CONSULTANT

Letter No. VO/TL/DBL-2/78 Date:-31/03/2014

To,

M/s DBL Bamkhalafata - Dogawa Toll ways Ltd.
E-5/99 Arera Colony
Bhopal (M.P.)

PROVISIONAL CERTIFICATE

1. I Team Leader Vaidya Organisation Indore, acting as Independent Engineer, under and in accordance with the concession agreement dated 28.01.2013 (The "Agreement") for development of the Development of Bamkhalfata - Dogawa - via Borawa - Sarvardevala,Punasa–Kundi - Singhaji (Thermal Power Plant) & Singhaji Bridge ApproachRoad,Mundi– Devala – Khutala – Attot NVDA" (3 MDRs) on BOT (Annuity) Basis Package -1 (Total length 65.40Km) of MDR the "Project Highway" on build, operate and transfer (BOT) basis, through M/s DBL Bamkhalafata - Dogawa Toll ways Ltd Bhopal hereby certify that the test specified in Article 14 and Schedule-I of the agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
2. Construction works that were found to be incomplete and/ or deficient have been specified in the punch list appended hereto, and the Concessionaire has agreed and accepted that it shall complete and /or rectify all such works in the time and manner set forth in the agreement. (Some of the incomplete works have been delayed as a result of reason attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the Concessionaire,). I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.
3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this 31day of March 2014.

ACCEPTED, SIGNED, SEALED AND DELIVERED
For and on behalf of
CONCESSIONAIRE by;

A.M. Qureshi
M/s DBL Bamkhalefata - Dogawa Toll ways Ltd Bhopal

SIGNED, SEALED AND DELIVERED
For and on behalf of
INDEPENDENT ENGINEER by:

P. C. Agrawal
Team Leader
Indore Package

Annexure 7: Completion Certificate

VAIDYA ORGANISATION
INFRASTRUCTURE DEVELOPMENT CONSULTANT

TL Office : 302, Sheba Complex, Raga Squre, Indore (M.P.), Tel/Fax : 0731 4005147
Mob. : 9752958337, E-mail : vaidya.mpdc@gmail.com
H. Off. : 311, Indraprasth Tower, 6/1, M.G. Road, Indore (M.P.) Tel/Fax : 07314050650
Mob. : 08062-80650, Email : vaidyamc@yahoo.co.uk

SCHEDULE –J
(See Clauses 14.2 & 14.3)

COMPLETION CERTIFICATE

1. I **Poonam chand Agrawal** Team Leader **Vaidya Organisation Indore,** acting as Independent Engineer, under and in accordance with the Concession Agreement dated 28.01.2013 (the "Agreement"). For intermediate/Two laning of the "Bamkhalfata-Dogawa-via Borawa-Sarvardevala, Punasa-Mundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA" **(3 MDRs) on BOT (Annuity) Basis Package -1** (Total length **65.40Km**) of Major District Road (the "MDR") on build, operate and transfer (BOT) basis, through **M/s DBL Bamkhalafata - Dogawa Toll ways Ltd. Bhopal** hereby certify that the tests specified in Article 14 and Schedule-I of the agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliable placed in commercial services of the Users thereof.
2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit entry in to commercial operation on this the first day of July, 2014.

SIGNED, SEALED AND
DELIEVERD
For and on behalf of
INDEPENDENT ENGINEER by;

Poonam Chand Agrawal
Team Leader
Indore Package

Annexure 8: Insurance Details

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001991

जारीकर्ता कार्यालय/Issuing Office

कार्यालय कोड /Office Code: 321300

कार्यालय पता /Office Address: BHOPAL DIVISION II B-6, Indrapuri, B.H.E.L, Bhopal, Madhya Pradesh - 462022.
State Code: 23, Madhya Pradesh
GSTIN: 23AAACN3967E1ZB
Contact Number: 755 2682622
eMail: 321300@nic.co.in
Mobile Number

व्यवसाय सहयोग /Business Source: 910355

बिक्रय चैनल कोड/Sales Channel Code: 91035500000001

नाम /Name: Aspire Insurance Brokers Pvt Ltd - I/O Contact Number: 8261914910

सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email: customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL BANKHALAFATA DOGAWA TOLLWAYS
पता/ Address: PLOT NO 5, INSIDE GOVIND NARAYAN SING GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL-462016, City BHOPAL, District: BHOPAL, State: MADHYA PRADESH, P.N: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701551843
फोन /Phone:
ई-मेल /E-Mail:

पैन /PAN: AAECD5088L

पॉलिसी: 27/03/2020 से 00:00 से 26/03/2021 को मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 10,38,196.00	कवर नोट संख्या और तारीख/ Cover Note Number and Date	NA
CGST	₹ 93,438.00		
SGST/UTGST	₹ 93,438.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तारीख/Proposal Number and Date	8800200327086542 Dt. 27/03/2020
कम जीएसटी_टीडीएस / Less GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तारीख/Receipt Number and Date	321300811910307565 Dt. 27/03/2020
कुल /Total Amount	₹ 12,25,072.00	पिछली पॉलिसी संख्या और समाप्ति तारीख/ Previous Policy Number and Expiry Date	NA

(Rupees Twelve Lakh Twenty Five Thousand Seventy Two Only.)
Location:Bankhalfata-Dogawa-Via-Borawa-Sarvardevla, Punasa-Mundi-Singhaji (Thermal Power Plant) and Singhaji Bridge approach Road, Mundi-Devla-Khutla-Atoot NVDA Road, Madhya Pradesh Nimar - East, Khandwa - M P, 450001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone II	98,64,80,000.00	1,00,000.00
2	Roads	Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone III	5,16,20,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable:Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause. Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1 Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportation Tunnels
4.No Coverage for Marine Vessel Impact Damage
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Development of Bankhalfata Dogawa Via-Borawa-Sarvardevla, Punasa-Mundi-Singhaji (Thermal Power Plant) and Singhaji Bridge approach Road, Mundi-Devla-Khutla-Atoot NVDA Road on BOT (Annuity) Basis Packaged.

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Page no: 1

INSURANCE

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Annexure 9: Change of Scope

CIN : U45203MP2004SGC020793

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.

(Govt. of M.P. Undertaking)
45-A, Arera Hills, Bhopal-462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPABX), 0755-2550985, Fax : 91-755-2572643
Website : www.mprdc.nic.in

No...../MPRDC/MDR/2014 Bhopal, dated : /12/14

To,

Team Leader,
M/s Vaidya Organization
31, Indraprasth Tower,
6 MG Road, **Indore**
Fax:-0731 4050850

Sub:- Developement of (i) Bankhlafata-Dogawa via Borawa -Sarvardevala Road (length 23.67 km) (ii) Punasa-Mundi-Singhaji(Thermal Power Plant)Road &Singhaji Bridge Approach Road (Length 13.30 km) (iii) Mundi -Devala-Khutala-Atoot NVDA (Length 28.43 km) (BOT Annuity basis) - Change of Scope Proposal

Ref: Your letter no. VO/TL/CE-RDC/80 dated 16.10.2014.

Please find enclosed the Minutes of meeting of Advisory Committee of its meeting dated 11.11.2014 and 24.11.2014 the change of scope for the work of (i) Bankhlafata-Dogawa via Borawa -Sarvardevala Road (length 23.67 km) (ii) Punasa-Mundi-Singhaji(Thermal Power Plant)Road &Singhaji Bridge Approach Road (Length 13.30 km) (iii) Mundi -Devala-Khutala-Atoot NVDA (Length 28.43 km) (BOT Annuity basis).

In principle approval of change of scope as per minutes of Advisory Committee (enclosed) are hereby granted with the instructions to submit Financial implication as per provision of Concession Agreement within 15 days time.

Encl: Minutes of meeting

Chief Engineer (MDR)
MPRDC Bhopal

End.No. 15579/MPRDC/MDR/2014 Bhopal, dated : 2 /12/14

Copy to :-

1. General Manager, MPRDC, Indore
2. General Manager (Fin.), MPRDC, Bhopal.
3. Divisional Manager, MPRDC, Indore-I
4. M/s DBL Bankhalfata Tollways Ltd. Bhopal with the instruction to submit financial implication as per minutes of meeting through Team Leader, Divisional Manager and General Manager MPRDC Indore within 15 days.

Encl: Minutes of meeting

Kumar 11/12/14

Chief Engineer (MDR)
MPRDC Bhopal

Innovative Doable Thought quality infrastructure

MINUTES OF MEETING

Meeting of advisory committee of MPRDC for change of scope for (1) Bankhalata-Dogawa-Via-Borawa-Savardevala (2) Mundi-Singhaji (Thermal Po Plant) and Singhaji Bridge Approach Road (3) Mundi-Devala-Khutala-Atoot NVDA. Road MDR on Annuity Basis has been held in the office of MPRDC on d 11.11.2014 & 24.11.2014. Following officials were present in the meeting:-

1. Shri. A.S. Chendke , Technical Advisor, MPRDC
2. Shri Narendra Kumar, Chief Engineer (MDR)
3. Shri Alok Chaturvedi, General Manager (MDR)
4. Dr. Arun Paliwal, General Manager (Finance)
5. Shri. B.C.Tentawal, Divisional Manager, (Indore-1)
6. Shri Anil Shrivastava, AGM (MDR)
7. Shri P.C.Agarwal, Team Leader, M/s Vaidya Organisation, Indore.
8. Shri Nitin Shrivastava, Concessionaire Representative

The change of scope for above packages of MDR on BOT Annuity basis has been recommended by Independent Engineer vides its letter no. VOFTL/C RDC/80 dated 16.10.2014. These have been discussed in meeting as below.

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Change of Scope for Road Works

Name of Road: - Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Name of Village / Town	As per Schedule B				As Constructed by Concessionaire on Site				Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.		
1	2	3	4	5	6	7	8	9	10	11
Raipura	1+300	1+600	0.300	12.000	0+000 /1+300	0+300 /1+600	0.300	10.000	An Existing road from chaingae 1 + 300 to 1 + 600 was proposed with Rigid Pavement 15 m width, but Bypass was constructed with Flexible Pavement at Raipura village. Alternative this regards can be adjusted against lesser Length of Flexible Pavement at Punasa-Mundi-Singhaji (Thermal Power Plant) Road.Change from rigid to flexible pavement. Recommended to adjust from additional rigid pavement length constructed at Thermal Power Plant Road. Lesser width is chargeable as negative variation.	Committee agreed as recommended by IE
Sonkhedi	2+150	2+350	0.200	12.000	2+140	2+340	0.200	10.000	Width attempted is less than 15mtr. Lesser work is chargeable.	
Sangawi	5+700	5+900	0.200	12.000	5+660	5+860	0.200	10.000	Width attempted is less than 15mtr. Lesser work is chargeable.	Committee agreed as recommended by IE

Page 2 of 1

Name of Road: - Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Name of Road: - Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Construction of Drain in built up area

Sr no.	Particular	Provision of drain as per CA	Construction of drain as per actual	Reason and recommendation of IE	Decision of Committee
1	Drains in built up area	As per CA length of drains in built up area is 2x1822 =3644mtr	Actual length of drains to be measured	It is recommended to consider difference in length and size to be as per schedule B and as per work done to consider as change of scope.	Committee agreed as recommended by IE

Name of Road: - Mundi-Singhaji (Thermal Power Plant)

Name of Village/Town	As per Schedule B			As Constructed by Concessionaire on Site			Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	From (Km)	To (Km)	Length (Km)		
1	2	3	4	5	6	7	8	9
	1.Mundi-Thermal Power Plant Two lane with Hard Shoulder proposed in flexible Pavement was as following-			1.Mundi-Thermal Power Plant Two lane with Hard Shoulder Actual Construction in Rigid Pavement was as following-				
	4400	4800	400	4400	4805	405	Rigid pavement constructed as following- 1. The approach portion of Thermal Power Plant (405mtr Length). Plant authority demand rigid pavement. The proposal for same was forwarded vide this office memo no. 37 dt. 06.12.13. (Copy attached) 2. The concessionaire opt work of rigid pavement intimated vide this office memo no. 42 dt. 04.03.14 (copy attached) 3. The CC pavement as below- 7mtr wide PQC. 2mtr wide earthen shoulder on both sides. Difference of cost is adjustable against lesser work at other locations of the package.	Committee agreed as recommended by IE

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posed 15 m width,
structed at Utawad
provision

Committee agreed as recommended by IE

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Km. The
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complete
age, It is
ence in
increased
15mtr.

Committee agreed as recommended by IE

15 + 250
n width,
ted at
area is
within
against

Committee agreed as recommended by IE

CA is

Committee agreed as recommended by IE

of 16

Page 3 of 16

Name of Road: - Mundi-Devala-Khutala-Atoot NVDA.

Name of Village/Town	As per Schedule B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.		
1	2	3	4	5	6	7	8	9	10	11
Mundi	0+000	0+350	0.350	12.000	0+000	0+350	0.350	10.000	Construction of road in built up stretches as per available width . it is recommended to considered lesser work is chargeable	Committee agreed as recommended by IE
Chichli Khurd	2+600	2+800	0.200	12.000	2+600	2+750	0.150	10.000		
Bamori	6+750	7+100	0.350	12.000	6+740	7+100	0.360	10.000		
Jalawa	10+400	11+000	0.600	12.000	10+350	10+950	0.600	10.000		
Dewala	16+200	16+400	0.200	12.000	16+130	16+330	0.200	10.000		
Khutala	18+630	19+200	0.570	12.000	18+600	19+100	0.500	10.000		
Dood	21+300	22+000	0.700	12.000	21+300	22+000	0.700	10.000		
Atoot	24+900	25+580	0.680	12.000	24+860	25+370	0.510	10.000		
Atoot	25+700	25+900	0.200	12.000	25+370	25+581	0.211	10.000		
Atoot					25+641	25+890	0.249	10.000		
Atoot					25+970	26+000	0.300	10.000		
Total			3.850				4.130			

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Construction of Drain in built up area

Sr no.	Particular	Provision of drain as per CA	Construction of drain as per actual	Reason and recommendation of IE	Decision of Committee
1	Drains in built up area	As per CA length of drains in built up area is 2x3850 =7700mtr	Actual length of drains to be measured	It is recommended to consider difference in length and size to be as per schedule B and as per work done to consider as change of scope	Committee agreed as recommended by IE

Change of Scope Structure
Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
1	02+456 (Existing Chainage) (HPC)__1x0.40.	02+463 (Proposed chainage) Reconstruction (HPC)_1x1.2.	02+484 (P & P Chainage) Retained (HPC). Width 10mtr.	This retained culvert adjusted against additional culvert at ch. 11+749 (S no 4) No variation is proposed.	Committee agreed as recommended by IE
2	06+015 (Existing Chainage) (HPC) __3x1.0.	06+015 (Proposed chainage) Reconstruction (HPC) _3x1.2.	06+015 (P & P Chainage) Retained (HPC).	Proposed reconstruction not done. Negative variation recommended.	Committee agreed as recommended by IE
3	10+200 (Existing Chainage) (HPC)__1x0.40.	10+413 (Proposed chainage) Reconstruction (HPC) _1x1.2.	10+413 (P & P Chainage) Retained (HPC).	This retained culvert adjusted against additional culvert at ch. 12+414 (S no 5. No variation is proposed.	Committee agreed as recommended by IE
4	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	11+749 (P & P Chainage) New Construction (HPC)__1x1.2	This additional culvert adjusted against retained culvert at ch. 2+484 (S no 1). No variation is proposed.	Committee agreed as recommended by IE
5	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	12+414 (P & P Chainage) New Construction (HPC)__1x1.2	This additional culvert adjusted against retained culvert at ch. 10+413(S no 3). No variation is proposed.	Committee agreed as recommended by IE

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Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

6	12+743 (Existing Chainage) (HPC)__1x1.0.	12+742 (Proposed chainage) Widening (HPC) _1x1.0.	12+742 (Proposed chainage) Reconstruction (HPC) _1X1.2.	Proposed widening changed to reconstruction due to poor condition of existing structure. Positive variation recommended.	Committee agreed as recommended by IE
7	12+924 (Existing Chainage) (HPC)__1x1.0.	12+886 (Proposed chainage) Widening (HPC) _1x1.0. Existing width 11.37mtr.	12+886 (P & P Chainage) Retained (HPC).	Proposed widening not done. Negative variation recommended.	Committee agreed as recommended by IE
8	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	12+996 (P & P Chainage) New Construction (HPC)__1x1.2	Additional CD not payable. No variation is proposed.	Committee agreed as recommended by IE
9	14+095 (Existing Chainage) (HPC)__4x1.0. Causeway.	14+095 (Existing Chainage) (HPC)__5x1.2.	Schedule Mistake. Not Constructed.	Negative variation recommended. No construct on needed as minor brdige already constructed.	Committee agreed as recommended by IE
10	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	14+490 (P & P Chainage) New Construction (HPC)__1x1.2	No variation proposed as per note given in schedule B	Committee agreed as recommended by IE
11	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	14+976 (P & P Chainage) New Construction (HPC)__1x1.2	New Construction adjust against at retained CD at ch. 4+090 on Thermal Power Plant (S. No. 3). No variation proposed.	Committee agreed as recommended by IE
12	17+250 (Existing Chainage) (HPC)__1x1.0.	17+212 (Proposed chainage) Widening (HPC) _1x1.0.	16+968 (Proposed Chainage) New Construction (HPC).	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE

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Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

20	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	23+520 (Proposed chainage) New Construction (HPC) _1X1.2.	No variation proposed as per note given in schedule B..	Committee agreed as recommended by IE

Change of Scope Structure
Mundi-Thermal Power Road Project.

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decission of committee
1	03+203 (Existing Chainage) (HPC)__4x1.0.	01+398 (Proposed chainage) Reconstruction (HPC) _2x1.2.	Schedule Mistake Not Constructed.	Not Constructed. Adjusted against CD at ch. 29+069 (S no 15). Bamkhalfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
2	03+054 (Existing Chainage) (HPC)__1x1.0.	01+604 (Proposed chainage) Reconstruction (HPC) _2x1.2.	01+597 (Proposed chainage) Reconstruction (BC) _1x4.0.	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE
3	04+090 HPC (Proposed Chainage)	04+090 (Proposed chainage) New Construction (HPC) _1x1.2.	04+090 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 14+976 (S no 11).Bamkhalfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
4	There was no structure at existing chainage.	04+480 (Proposed chainage) New Construction (HPC) _1x1.2.	04+480 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 17+840 (S no 13).Bamkhalfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
5	There was no structure at existing chainage.	04+581 (Proposed chainage) New Construction (HPC) _1x1.2.	04+581 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 18+180 (S no 14). Bamkhalfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE

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6	There was no structure at existing chainage.	04+730 (Proposed chainage) New Construction (HPC) _1x1.2.	04+730 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 19+250 (S no 16). Bamkhalfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE

Change of Scope Structure
Singhaji Bridge Approach Raod

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
1	00+000 (Existing Chainage) (HPC)__1x0.30.	0+000 (Proposed chainage) Reconstruction (HPC) _2x1.2.	00+326 (P & P Chainage) Retained (HPC).	Retained culvert adjusted with add tional culvert at ch. 4+850 (Sr. No. 2) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
2	There was no structure at existing chainage.	There was a difined Nallah at this Chainage but no CD structure proposed.	00+523 (P & P Chainage) Widening (HPC) 1x1.0.	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE
3	00+385 Slab Culvert	00+384 (Proposed chainage) Reconstruction (HPC) _2x1.2.	00+607 (P & P Chainage) Retained (BC).	Retained culvert adjusted against additional culvert at ch. 10+116 (Sr. No. 3) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
4	01+963 (Existing Chainage) (HPC)__1x1.00.	01+963 (Proposed chainage) Reconstruction (HPC) _2x1.2.	02+068 (P & P Chainage) Retained (HPC) 1x1.0.	Retained culvert adjusted against additional culvert at ch. 16+025 (Sr. No. 7) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
5		Ch. 02+947 New construction HPC _1x1.2	HPC Not constructed	Negative variation is recommended	Committee agreed as recommended by IE

Change of Scope Structure
Mundi-Atoot Road Project.

19	27+369 (Existing Chainage) (HPC)__1x1.0.	27+322 (Proposed Chainage) Reconstruction (SC)__1x1.40	27+322 (Proposed chainage) Reconstruction (HPC) _1X1.2.	No variation proposed as per note given in schedule B..	Committee agreed as recommended by IE
20	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	28+360 (P & P Chainage) New Construction (HPC)__1x1.2	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE

In-principle approval under change of scope is recommended for above works as per remarks of last column. Further it has been instructed to Independe Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively.

(Nitin Shrivastava) Concessionaire Representative	(P.C.Agarwal) Team Leader M/s Vaidya Organisation, Indore.	(Anil Shrivastava) AGM (MDR) MPRDC Bhopal	(Shri. B.C.Tentawal) Divisional Manager Indore-I	(Alok Chaturvedi) GM (MDR.) MPRDC Bhopal	(Arun Paliwal) GM (Finance) MPRDC ,Bhopal	(Mahendra Kumar) Chief Engineer MPRDC Bhopal	(A.S. Chendke) Technical Advisor MPRDC Bhopal

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SHREM FINANCIAL PRIVATE LIMITED

Development of Jaora-Piplodha- Jalandharkheda & Piploda-Sailana Road, Raipuriya-Petlabad-Bamniya Road, Jawad-Khoh Road & Soyat-Pidawa Road (MDR Under Package-IV) in the State of Madhya Pradesh on BOT (Annuity) Basis.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Jaora-Piplodha- Jalandharkheda & Piploda-Sailana Road, Raipuriya-Petlabad-Bamniya Road, Jawad-Khoh Road & Soyat-Pidawa Road (MDR Under Package-IV) in the State of Madhya Pradesh on BOT (Annuity) Basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Jaora-Piploda	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
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DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL JAORA – SAILANA TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Jaora-Sailana Tollways Limited. (herein after referred to as the "Concessionaire") had augmented the existing road into two lane undivided carriageway from (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (42.27 Kms.) (ii) Raipururiya-Petlabad-Bamniya (18.18 Kms.) (iii) Jawad-Khoh (21.07 Kms.) (iv) Soyat-Pidawa (Km. 6.25 Kms.) with total length of 87.77 Kms. in the State by intermediate-laning/two laning on Design, build, finance, operate & transfer BOT (Annuity) basis in accordance with the terms and conditions of a concession Agreement executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDC") on 24.12.2012.

Construction, operation & maintenance of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31(ii) Raipururiya-Petlabad-Bamniya(iii) Jawad-Khoh (iv) Soyat-Pidawa - SH-27 on BOT (Annuity) basis. Project location map is provided at Figure 1.1.

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL JAORA-SAILANA TOLLWAYS LIMITED vide agreement dated 26 March 2018.

SHREM FINANCIAL PRIVATE LIMITED appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements.

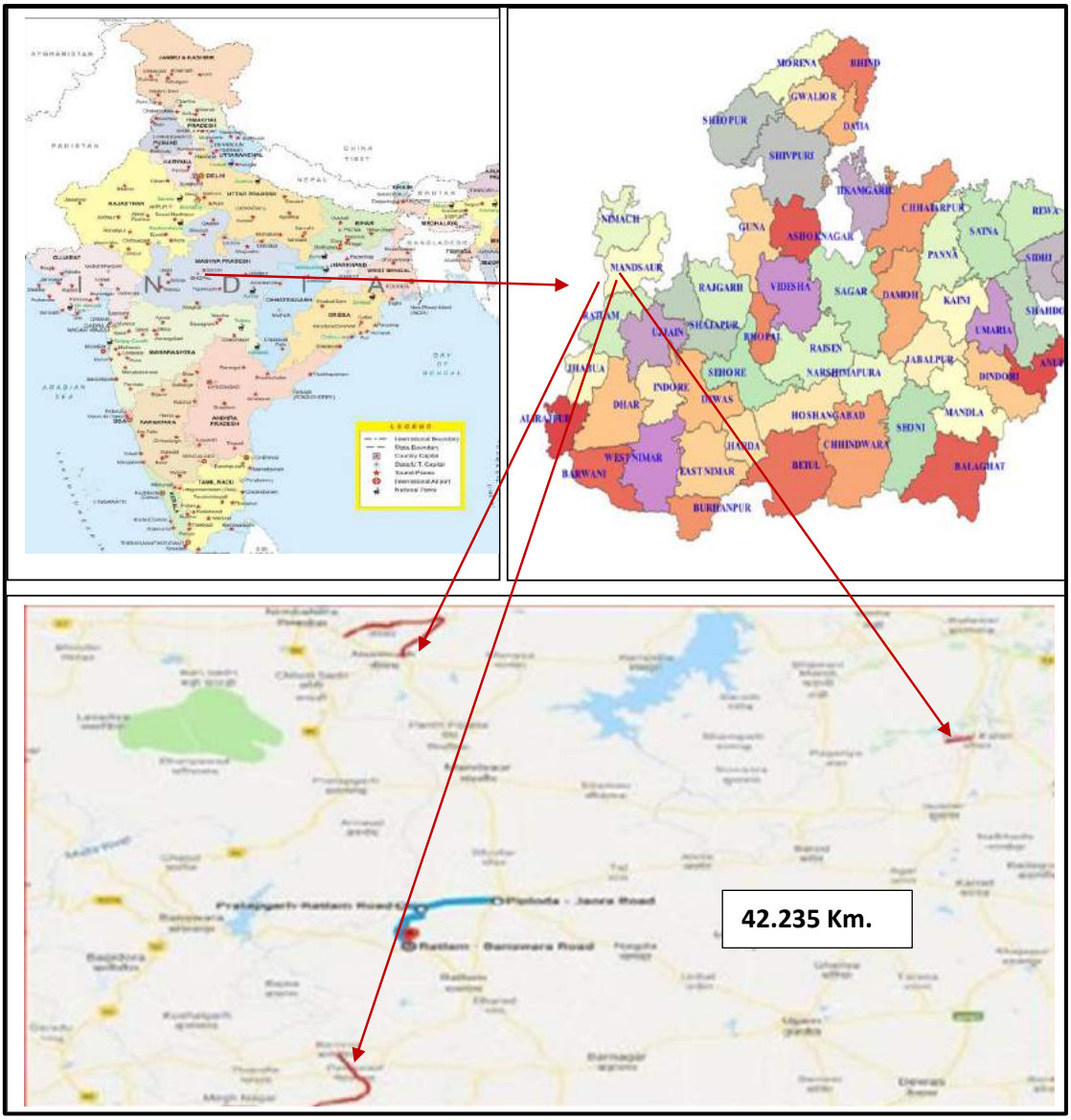


Figure 1.1: Project Location Map

1.2 Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Construction, operation and maintenance of four major district roads under Package-IV comprising of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (42.235 Kms.) (ii) Raipururiya-Petlabad-Bamniya (18.18 Kms.) (iii) Jawad-Khoh (21.07 Kms.) (iv) Soyat-Pidawa (Km. 6.25Kms.) (Total Length 87.77 Kms.) in the state of Madhya Pradesh by Intermediate-Laning/Two Laning on Design, Build, Finance, Operate and Transfer BOT (Annuity) basis
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation

S. No.	Particulars	Details
		Limited
4	Name of the Concessionaire	DBL Jaora-Sailana Tollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Design Length as per Site	Jaora-Piplodha-Jalandharkheda & Piploda-Sailana: 42.235 Kms. Raipururiya-Petlabad-Bamniya: 18.400 Kms. Jawad-Khoh : 21.030 Kms. Soyat-Pidawa: 6.300 Kms. **Total Length 87.965Kms.**
7	Project Lane Configuration	4 and 2 Lane
8	EPC Cost	114.41 Cr
9	Nature of contract	BOT (Annuity) basis
10	Concession Period	15 years from the Appointed date
11	Letter of Award Date	09-11-2012
12	Signing of Agreement	24-12-2012
13	Appointed date	29-06-2013
14	Concession end date	28-06-2028
14	Construction Period	730 days from the Appointed date.
15	Schedule Completion Date	28-06-2015
16	Date of issuance of Provisional Certificate (Commercial Operation Date)	09-05-2014
17	Date of issuance of Completion Certificate	14.10.2014
18	Annuity Amount (every six months)	Rs.12.06 Crores
19	Total Number of Annuities payable	26 Nos.
20	First Annuity Payment Received Date	17.12.2014
21	Total Number of Annuity Paid	12

1.3 Scope of Technical Consultant:

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.

- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features described in the following table to be developed as per schedule B and Schedule C including Change of scope.

Table 2.1: Salient Features

(i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31				
S. No.	**Particulars**	**As per CA**	**As per COS**	**As per Site**
1	Total Project Length	42.270 Kms.	(-)0.035 Kms.	42.235 Kms.
2	Rigid Pavement	2.622 Kms.	--	2.622 Kms.
3	Length of 2-Lane road	42.270 Kms.	(-)0.035 Kms.	42.235 Kms.
4	Length of 4-Lane road	--	--	--
5	Bypass/ Realignment	0.00 Km./0.995 Kms.	--	0.00 Km./0.995 Kms.
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	36	--	36
8	Truck Lay Bays	--	--	--
9	Major Junction	02	--	02
10	Minor Junctions	14	--	14
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	05	--	04
14	Pipe Culverts Slab/Box Culverts Total Culverts	31 24 55	-- -- --	35 17 52
(ii) Bamniya-Petlabad-Raipururiya				
S. No.	**Particulars**	**As per CA**	**As per COS**	**As per Site**
1	Total Project Length	18.177 Kms.	(+)0.223 Kms.	18.400 Kms.
2	Rigid Pavement	--	--	--
3	Length of 2-Lane road	17.460 Kms.	--	17.460 Kms.
4	Length of 4-Lane road	0.940 Kms.	--	0.940 Kms.
5	Bypass/ Realignment	0.000Kms. /0.770 Kms.	--	0.000 Km./0.770 Kms.
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	18	--	18
8	Truck Lay Bays	--	--	--
9	Major Junction	01	--	01
10	Minor Junctions	10	--	10
11	ROB	--	--	--
12	Major Bridges	00	--	--
13	Minor Bridges	03	--	03
14	Pipe Culverts	39	--	33*

	Slab/Box Culverts Total Culverts	09 48	-- --	09* 42
(iii) Neemuch –Jawad - Khoh - Nayagaon				
S. No.	**Particulars**	**As per CA**	**As per COS**	**As per Site**
1	Total Project Length	21.070 Kms.	(-) 0.040 Kms.	21.030 Kms.
2	Rigid Pavement	Nil	--	
3	Length of 2-Lane road	19.530 Kms.	--	19.530 Kms.
4	Length of 4-Lane road	1.500 Kms.	--	1.500 Kms.
5	Bypass/ Realignment	--	--	
6	Toll Plaza	--	--	-
7	Bus Bays / Bus Shelters	10	--	10
8	Truck Lay Bays	--	--	-
9	Major Junction	02	--	02
10	Minor Junctions	11	--	11
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	03	--	03
14	Pipe Culverts Slab/Box Culverts Total Culverts	06 10 16	-- -- --	12* 07* 19
(iv) Soyat-Pidawa - SH-27				
S. No.	**Particulars**	**As per CA**	**As per COS***	**As per Site**
1	Total Project Length	6.255 Kms.	(+) 0.045 Kms.	6.300 Kms.
2	Rigid Pavement	Nil	--	
3	Length of 2-Lane road	6.300 Kms.	--	6.300 Kms.
4	Length of 4-Lane road	--	--	--
5	Bypass/ Realignment	0.000 Kms. /0.450 Kms.	--	
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	01	--	01
8	Truck Lay Bays	00	--	00
9	Major Junction	00	--	00
10	Minor Junctions	01	--	01
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	00	--	00
14	Pipe Culverts Slab/Box Culverts Total Culverts	09 00 09	-- -- --	09 00 09

* 10 MNB, 89 HPC and 33 slab culverts are constructed as per site requirement along the full length of the project road .

Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the following Typical Cross Section Schedule during the Construction.

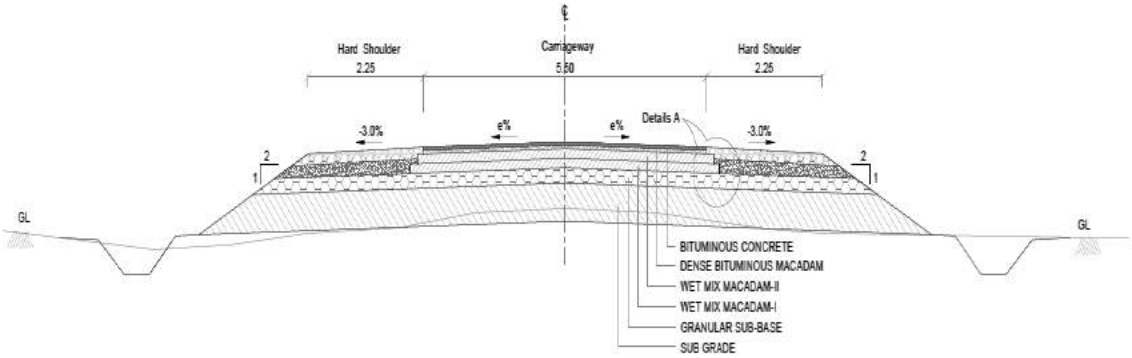


Figure 2.1: TCS 2.1 of Schedule D
Two Laning with Granular Shoulder. (Cross Section in Open Areas & Rural Areas)

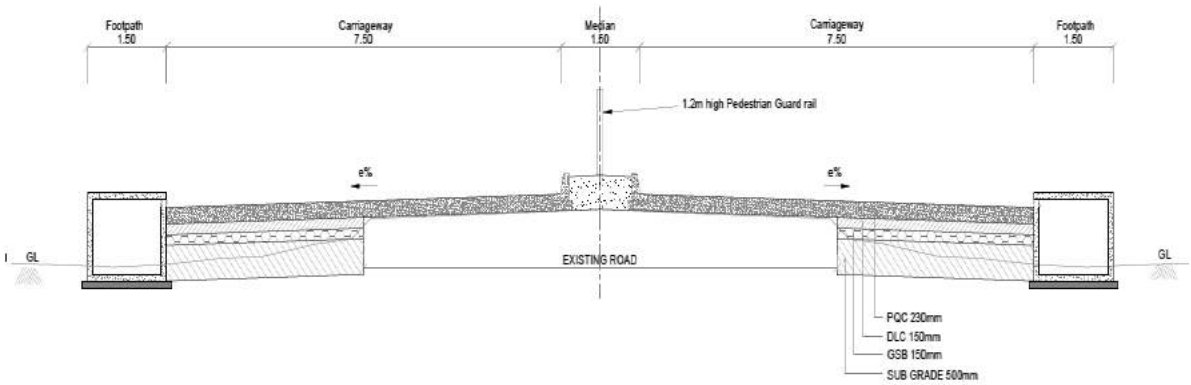


Figure 2.2: TCS 2.2 of Schedule D
Widening to 4 Lane divided Carriageway with footpath Built up area.

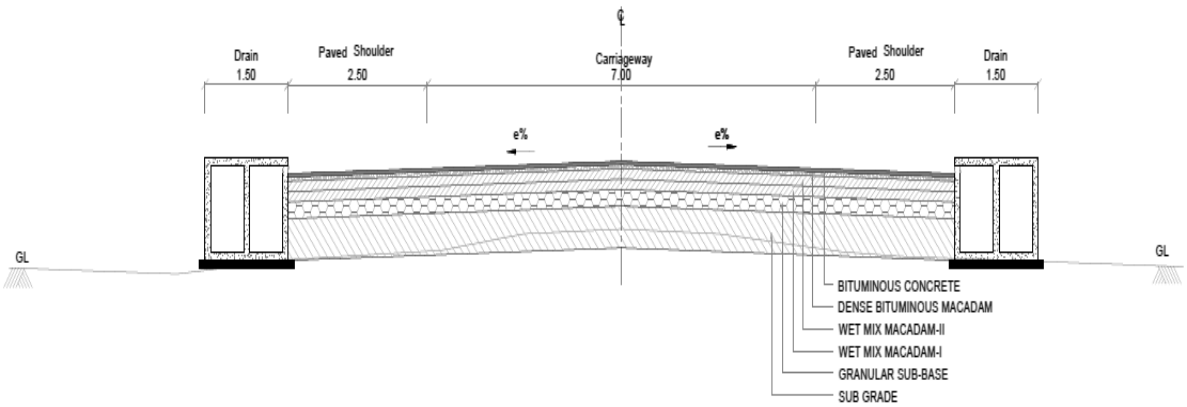


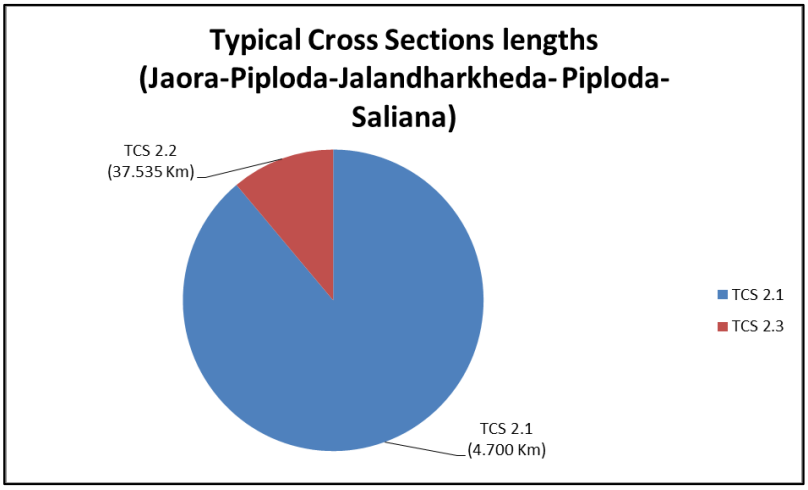
Figure 2.3: TCS 2.3 of Schedule D
The Carriageway shall be 7.0 m with Paved shoulder (In Built up Areas)

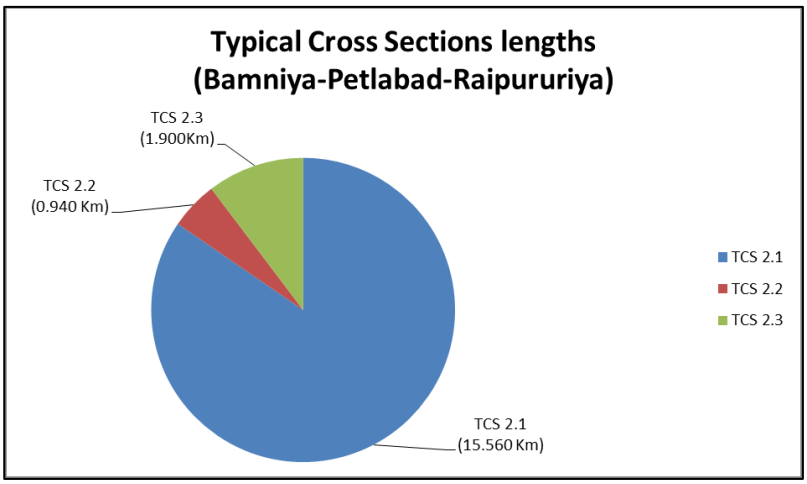
TCS Schedule is provided below.

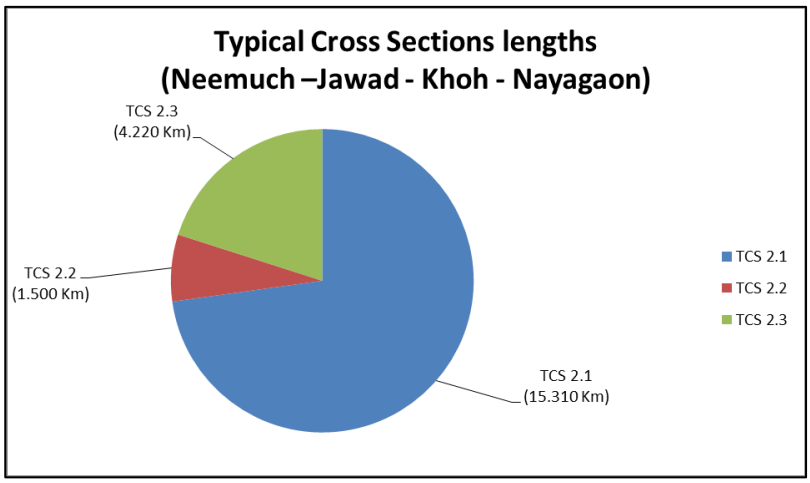
Table 2.2: TCS Schedule

Jaora-Piploda-Jalandharkheda				
S. No.	**From (Km.)**	**To (Km.)**	**length (m)**	**Type of TCS**
1.	0+000	0+600	600	TCS.2.3 of Schedule D of CA
2.	0+600	17+100	16500	TCS.2.1 of Schedule D of CA
3.	17+100	17+900	800	TCS.2.3 of Schedule D of CA
4.	17+900	22+235	4335	TCS.2.1 of Schedule D of CA
Piploda-Saliana				
S. No.	**From (Km.)**	**To (Km.)**	**length (m)**	**Type of TCS**
1.	0+000	6+000	6000	TCS.2.1 of Schedule D of CA
2.	6+000	6+750	750	TCS.2.3 of Schedule D of CA
3.	6+750	10+200	3450	TCS.2.1 of Schedule D of CA
4.	10+200	10+550	350	TCS.2.3 of Schedule D of CA
5.	10+550	14+100	3550	TCS.2.1 of Schedule D of CA
6.	14+100	14+500	400	TCS.2.3 of Schedule D of CA
7.	14+500	18+200	3700	TCS.2.1 of Schedule D of CA
8.	18+200	18+322	122	TCS.2.3 of Schedule D of CA
9.	18+322	20+000	1678	TCS.2.3 of Schedule D of CA
Bamniya-Petlabad-Raipururiya				
S. No.	**From (Km.)**	**To (Km.)**	**length (m)**	**Type of TCS**
1.	0+000	0+700	700	TCS.2.3 of Schedule D of CA
2.	0+700	10+080	9380	TCS.2.1 of Schedule D of CA
3.	10+080	11+020	940	TCS.2.2 of Schedule D of CA
4.	11+020	16+800	5780	TCS.2.1 of Schedule D of CA
5.	16+800	17+100	300	TCS.2.3 of Schedule D of CA
6.	17+100	17+500	400	TCS.2.1 of Schedule D of CA
7.	17+500	18+400	900	TCS.2.3 of Schedule D of CA
Neemuch –Jawad - Khoh - Nayagaon				
S. No.	**From (Km.)**	**To (Km.)**	**length (m)**	**Type of TCS**
1.	0+000	3+520	3520	TCS.2.1 of Schedule D of CA
2.	3+520	3+880	360	TCS.2.3 of Schedule D of CA
3.	3+880	8+800	4920	TCS.2.1 of Schedule D of CA
4.	8+800	10+300	1500	TCS.2.2 of Schedule D of CA
5.	10+300	11+210	910	TCS.2.3 of Schedule D of CA
6.	11+210	15+300	4090	TCS.2.1 of Schedule D of CA
7.	15+300	17+930	2630	TCS.2.3 of Schedule D of CA
8.	17+930	20+710	2780	TCS.2.1 of Schedule D of CA
9.	20+710	21+030	320	TCS.2.3 of Schedule D of CA

Soyat-Pidawa - SH-27				
S No	**From (Km.)**	**To (Km.)**	**Length (m)**	**Type of TCS**
1.	0+000	1+000	1000	TCS.2.3 of Schedule D of CA
2.	1+000	6+300	5300	TCS.2.1 of Schedule D of CA


Typical Cross Sections lengths
(Jaora-Piploda-Jalandharkheda- Piploda-Saliana)
TCS 2.2
(37.535 Km)
TCS 2.1
(4.700 Km)
TCS 2.1
TCS 2.3


Typical Cross Sections lengths
(Bamniya-Petlabad-Raipururiya)
TCS 2.3
(1.900Km)
TCS 2.2
(0.940 Km)
TCS 2.1
(15.560 Km)
TCS 2.1
TCS 2.2
TCS 2.3


Typical Cross Sections lengths
(Neemuch –Jawad - Khoh - Nayagaon)
TCS 2.3
(4.220 Km)
TCS 2.2
(1.500 Km)
TCS 2.1
(15.310 Km)
TCS 2.1
TCS 2.2
TCS 2.3

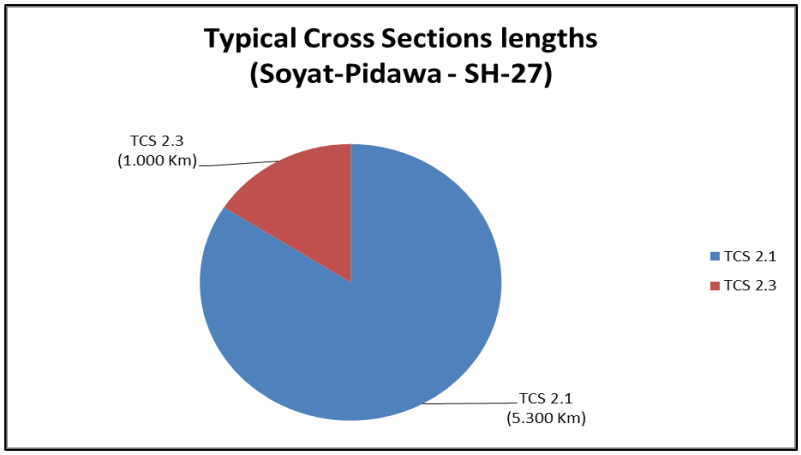


Figure 2.4: Pictorial Diagram of TCS Lengths

2.2 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from road side community on the Carriageway, RCC side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.3 Service Roads:

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.4 Bypass/Realignment:

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of CA.

2.5 Intersections:

As per Schedule B of the Concession Agreement Major Junctions and Minor Junctions are developed. Details are given below.

Table 2.3: Summary of Major Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
Jaora- Piploda			
1	0+000	X	SH-31
Piploda - Sailana			
1	18+322	T	Village Road
Bamniya-Petlabad-Raipururiya			
1	0+000	T	Ratlam
Neemuch - Jawad			
1	0+000	X	SH-31
Jawad Nayagaon			
1	21+070	X	SH-31

Table 2.4: Summary of Minor Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
Jaora - Piploda			
1	1+530	T	Village Road
2	2+700	T	Village Road
3	4+050	T	Village Road
4	6+580	T	Village Road
5	6+800	T	Village Road
6	9+300	T	Village Road
7	12+050	T	Village Road
8	15+300	T	Village Road
9	17+100	T	Village Road
Sailana Jn - Jalandharkheda			
1	19+700	X	Village Road
Piploda - Sailana			
1	4+020	X	Village Road
2	6+400	X	Village Road
3	12+300	T	Village Road
4	14+300	T	Village Road
Bamniya-Petlabad-Raipururiya			
1	4+800	T	Kalsadiya
2	6+600	T	Asaliya
3	6+980	T	Kesarpura
4	7+200	T	Dulakhedi
5	10+030	T	Badavana
6	10+800	X	Moivagal and Petlabad
7	15+150	T	Suwrpaa
8	16+580	T	Village
9	17+200	T	Raipuriya
10	17+800	T	Jhabua
Neemuch - Jawad			
1	3+780	T	Village Road
2	7+200	T	Village Road
3	9+200	X	Village Road
4	10+100	T	Village Road
Jawad - Nayagaon			
1	10+450	T	Village Road
2	11+223	X	Village Road
3	15+470	X	Village Road
4	15+900	X	Village Road
5	16+400	T	Village Road
6	20+645	T	Village Road
7	20+700	X	Village Road
Soyat Pidawa			
1	0+000	T	Village Road

2.6 Grade Separated Structures and underpasses:

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.7 Road Over Bridge:

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.8 Summary of the Pavement and carriageway details:

Summary of Pavement Details is given below:

Table 2.5: Summary of Pavement and carriageway details

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana				
S. No.	**Description**	**Flexible (Kms.)**	**Rigid (Kms.)**	**TCS Type**
1	2 Lane with Earthen shoulder	22.235	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	17.378	2.622	Fig 2.3 of Schedule D
3	4 Lane	---	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	42.235	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	42.235	---	
9	Total Length of the Project	42.235	---	

Bamniya-Petlabad -Raipururiya				
S. No.	**Description**	**Flexible (Kms.)**	**Rigid (Kms.)**	**TCS Type**
1	2 Lane with Earthen shoulder	15.560	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	1.900	---	Fig 2.3 of Schedule D
3	4 Lane	0.940	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	18.400	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	---	---	
9	Length of Stretch in the Project	18.400		

Neemuch –Jawad - Khoh - Nayagaon				
S. No.	**Description**	**Flexible (Kms.)**	**Rigid (Kms.)**	**TCS Type**
1	2 Lane with Earthen shoulder	15.310	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	4.220	---	Fig 2.3 of Schedule D
3	4 Lane	1.500	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	21.030	---	
Type of Alignment				

Neemuch –Jawad - Khoh - Nayagaon				
S. No.	**Description**	**Flexible (Kms.)**	**Rigid (Kms.)**	**TCS Type**
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	21.030	---	
9	Length of Stretch in the Project	21.030	---	

Soyat-Pidawa - SH-27				
S. No.	**Description**	**Flexible (Kms.)**	**Rigid (Kms.)**	**TCS Type**
1	2 Lane with Earthen shoulder	5.3	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	1	---	Fig 2.3 of Schedule D
3	4 Lane	---	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	6.300	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	6.300	---	
9	Length of Stretch in the Project	6.300		

2.9 Summary of Structures:

Table 2.6: Summary of Structures

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana					
S. No.	**Description**	**Major Bridges**	**Minor Bridges**	**Hume Pipe Culverts**	**Box/Slab Culverts**
1	Retained	--	--	18	--
2	Widening	--	3	--	13
3	Reconstruction	--	1	07	11
4	New	--	--	4	--
5	Improvement	--	1	2	--
Total		**0**	**05**	**31**	**24**

Bamniya-Petlabad -Raipururiya					
S. No.	**Description**	**Major Bridges**	**Minor Bridges**	**Hume Pipe Culverts**	**Box/Slab Culverts**
1	Retained	--	--	06	01
2	Widening	--	--	03	--
3	Reconstruction	--	01	25	07
4	New	--	--	04	--
5	Improvement	--	02	01	01
Total		**--**	**03**	**39**	**09**

Neemuch –Jawad - Khoh - Nayagaon					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	01	--	--
2	Widening	--	--	01	--
3	Reconstruction	--	01	04	10
4	New	--	--	01	--
5	Improvement	--	1	--	--
Total		**--**	**03**	**06**	**10**

Soyat-Pidawa - SH-27					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	--	01	--
2	Widening	--	--	--	--
3	Reconstruction	--	--	--	--
4	New	--	--	08	--
5	Improvement	--	--	--	--
Total		**--**	**--**	**09**	**--**

2.10 Toll Plazas:

As per Schedule C provisions of the Concession Agreement, No Toll Plazas are provided.

2.11 Bus shelters:

As per the provisions of Schedule C of the Concession Agreement bus shelters are provided at the locations given below.

Table 2-6: List of Bus shelters

Jaora- Piploda			
S. No.	Chainage (Km.)	Side	Location
1	0+000	LHS	Jaora
2	0+100	RHS	Jaora
3	1+560	LHS	Borda
4	1+610	RHS	Borda
5	2+700	LHS	Hariyakh
6	2+750	RHS	Hariyakh
7	4+000	LHS	Akyader
8	4+100	RHS	Akyader
9	6+690	LHS	Barkhera
10	6+820	RHS	Barkhera
11	9+200	LHS	Sukheda
12	9+260	RHS	Sukheda
13	11+300	LHS	Havnara
14	11+340	RHS	Havnara
15	15+250	LHS	Rakoda

Jaora- Piploda			
S. No.	**Chainage (Km.)**	**Side**	**Location**
16	15+350	RHS	Rakoda
17	17+200	LHS	Piploda
18	17+200	RHS	Piploda
Piploda – Sailana Jn.			
S. No.	**Chainage (Km.)**	**Side**	**Location**
1	18+600	LHS	Sailana
2	18+750	RHS	Sailana
Sailana Jn. - Jalandharkheda			
1	19+650	LHS	Khedavad
2	19+800	RHS	Khedavad
3	23+650	LHS	Kamlakha
4	23+750	RHS	Kamlakha
Piploda - Sailana			
S. No.	**Chainage (Km.)**	**Side**	**Location**
1	0+050	LHS	Sailana
2	0+100	RHS	Sailana
3	4+040	LHS	Baroda
4	4+100	RHS	Baroda
5	6+420	LHS	Sherpur
6	6+480	RHS	Sherpur
7	10+450	LHS	Amba
8	10+450	RHS	Amba
9	14+300	LHS	Pahadibg
10	14+400	RHS	Pahadibg
11	18+180	LHS	Saliana
12	18+250	RHS	Saliana

Bamniya-Petlabad-Raipururiya			
S. No.	**Chainage (Km.)**	**Side**	**Location**
1	0.05	LHS	Bamania
2	0.1	RHS	Bamania
3	0.4	LHS	Bamania Vilage
4	0.5	RHS	Bamania Vilage
5	4.75	LHS	Kalsadlya
6	4.85	RHS	Kalsadlya
7	6.9	LHS	Kesarpura
8	7.25	RHS	Kesarpura
9	9.97	LHS	Badvana
10	10.15	RHS	Badvana
11	10.7	LHS	Petlavad
12	10.7	RHS	Petlavad

Bamniya-Petlabad-Raipururiya			
S. No.	**Chainage (Km.)**	**Side**	**Location**
13	15.1	LHS	Suwrpada
14	15.17	RHS	Suwrpada
15	16.8	LHS	Raipuria Village
16	16.94	RHS	Raipuria Village
17	17.75	LHS	Jhabua
18	17.85	RHS	Jhabua

Neemuch - Jawad			
S. No.	**Chainage (Km.)**	**Side**	**Location**
1	3+650	LHS	Jaora
2	3+760	RHS	Jaora
Jawad Nayagaon			
S. No.	**Chainage (Km.)**	**SIDE**	**Location**
1	11+300	LHS	Jawad
2	11+300	RHS	Jawad
3	15+580	LHS	Khor
4	15+580	RHS	Khor
5	17+010	LHS	Cement Factory
6	17+060	LHS	Cement Factory
7	20+700	LHS	Nayagaon
8	20+800	RHS	Nayagaon
Soyat Pidawa			
S. No.	**Chainage (Km.)**	**Side**	**Location**
1	0+200	LHS	Near Soyat Village

Figure 2.5: Representative Bus shelter at Km. 2+750 of Jaora-Piplodha-Jalandharkheda

2.12 Other Project Facilities Provided as per Schedule C

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic Safety Devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of the Concession Agreement.
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and being maintained.

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in Table 3.1 and few representative photographs are given below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain, Rolling and Hilly
2	Land Use	predominantly Agriculture
3	Four lane length	2.440 Kms.
4	Two Lane length	85.525 Kms.
5	Earthen shoulder	1.0 (m) to 1.5 (m) Width on site
6	Bypasses	Nil
7	Junctions	41 Nos.
8	Toll Plaza	Nil
9	Sign boards	Sign boards are provided as per highway requirements
10	Road Markings	Lane markings are provided as per highway requirements
11	Bus Bays /shelters	65 Nos.
12	Street Lighting	Highway lightings are provided as per highway requirements
13	Avenue plantation	Provided along the Project road

Km. 0+000 of Neemuch-Jawad Khon-Nayagaon

Km. 12+100 of Neemuch-Jawad Khon-Nayagaon

Km. 8+600 of Neemuch-Jawad Khon-Nayagaon

Km. 3+600 of Soyat-Pidawa

Figure 3.1: Existing Road Features

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey methodology

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 3.3: Pavement condition summary

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana			
From (Km.)	**To (Km.)**	**Length (Km.)**	**Condition**
0+000	42+235	42.235	Good
Raipururiya-Petlabad-Bamniya			
From (Km.)	**To (Km.)**	**Length (Km.)**	**Condition**
0+000	18+400	18.400	Good
Neemuch –Jawad - Khoh - Nayagaon			
From (Km.)	**To (Km.)**	**Length (Km.)**	**Condition**
0+000	21+030	21.030	Good
Soyat-Pidawa			
From (Km.)	**To (Km.)**	**Length (Km.)**	**Condition**
0+000	6+300	6.300	Good

Km. 4+400 of Jaora Piplodha-Jalandharkheda

Km. 3+400 of Neemuch-Jawad-Khon-Nayagaon

Km. 13+000 of Neemuch-Jawad-Khon-Nayagaon

Km. 18+800 of Bamniya-Petlabad- Raipuriya

Figure 3.2: Representative photos for Pavement Condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Condition of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The List of structures along the project road is given below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
Jaora-Piploda		
1	Minor Bridge	2
2	Slab / Box Culverts	8
3	Pipe culverts	26
Piploda-Sailana		
1	Minor Bridge	2
2	Slab / Box Culverts	9
3	Pipe culverts	9
Neemuch-Nayagaon		
1	Minor Bridge	3
2	Slab / Box Culverts	7
3	Pipe culverts	12
Soyat-Pirawa road		
1	Pipe culverts	9
Bamaniya –Raipurlya road		
1	Minor Bridge	3
2	Slab / Box Culverts	9
3	Pipe culverts	33

There are 10 minor bridges in all stretches. In which some are RCC solid slab structures supported on conventional wall type abutment or piers resting on open foundations. Some are RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types' viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Minor Bridges

There are 10 minor bridges in all stretches.

In Jaora-Piploda road, the type of superstructure for minor bridges at Ch.: 16+250 is RCC box cell structure and 19+115 is RCC solid slab. For minor bridge at Ch.; 19+115 the substructures are of PCC conventional wall type resting on open foundations.

In Piploda-Sailana road, the type of superstructure for minor bridges at Ch.: 13+914 and 14+720 is RCC solid slab and the substructure is of PCC conventional wall type resting on open foundations.

In Neemuch-Nayagaon road, the type of superstructure for minor bridges at Ch.: 11+466 and 20+535 is RCC box cell structure and for minor bridge at Ch: 19+656 is RCC solid slab. For minor bridge at Ch.; 19+656 the substructures are of CR masonry conventional wall type resting on open foundations.

In Bamaniya–Raipurlya road, the type of superstructure for minor bridges at Ch.: 0+884 and 3+809 is RCC box cell structure and for minor bridge at Ch: 6+840 is RCC solid slab. For minor bridge at Ch.; 19+656 the substructures are of RCC conventional wall type resting on open foundations.

Table 4.2: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
Jaora – Piploda Road				
1	16+250	3 x 5.2	15.6	It is RCC box type minor bridge with RCC Crash barrier.
2	19+115	3 x 9.0	27.0	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC crash barrier.
Piploda – Sailana Road				
1	13+914	3 x 6.0	18.0	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with masonry parapet wall.
2	14+720	4 x 5.4	21.6	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with masonry parapet wall.
Neemuch – Nayagaon Road				
1	11+466	3 x 6.0	18.0	It is RCC box type minor bridge with RCC crash barrier.
2	19+656	4 x 5.4	21.6	MNB has RCC solid slab superstructure supported on CR masonry wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC posts.
3	20+535	3 x 5.0	15.0	It is RCC box type minor bridge with With RCC crash barrir.
Bamaniya – Raipurlya Road				
1	0+884	3 x 6.0	18.0	It is RCC box type minor bridge with with RCC crash barrier.
2	3+809	2 x 6.1	12.2	It is RCC box type minor bridge with with RCC crash barrier.
3	6+840	3 x 11.4	34.2	MNB has RCC solid slab superstructure supported on conventional RCC wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC crash barrier.

Km. 0+884 of Bamniya-Raipuriya

Km. 3+809 of Bamaniya-Raipuriya

Figure 4.1: Representative photos for minor bridges

4.4 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.4.1. General Description of the Slab/Box Culverts

There are 8 slab/box culverts in Jaora-Piploda road and 9 slab/box culverts in Piploda-Sailana road. There are 7 slab/box culverts in Neemuch-Nayagaon road and 9 slab/box culverts in Bamaniya Raipurlya road. The details of the slab/box culverts are given below.

Table 4.3: List of Slab/Box Culverts

S. No.	Chainage	Span (m)	Vent Size (m)
Jaora-Piploda road			
1	0+772	1 x 3.8	2.50
2	19+263	1 x 3.1	2.60
3	19+580	1 x 5.9	4.00
4	20+205	1 x 2.4	2.00
5	21+795	1 x 4.4	2.00
6	22+780	1 x 5.0	2.00
7	23+230	1 x 4.4	3.00
8	23+960	1 x 2.4	2.00
Piploda-Sailana road			
1	1+900	1 x 4.4	2.50
2	8+350	1 x 2.4	2.00
3	8+800	1 x 2.4	2.00
4	10+100	1 x 1.5	0.80
5	10+990	1 x 1.5	3.00
6	13+100	1 x 2.4	2.50
7	15+840	1 x 4.4	2.50
8	16+503	1 x 4.4	2.50
9	17+206	1 x 4.0	2.50

S. No.	Chainage	Span (m)	Vent Size (m)
Neemuch-Nayagaon road			
1	5+840	1 x 3.4	2.50
2	10+200	1 x 6.4	2.10
3	11+760	1 x 3.4	2.00
4	12+365	1 x 5.4	3.50
5	13+960	1 x 3.4	2.10
6	16+760	1 x 5.4	3.50
7	20+720	2 x 2.7	2.00
Bamaniya Raipurlya road			
1	5+060	1 x 3	1.90
2	5+780	1 x 6	3.80
3	9+280	1 x 4.6	2.50
4	11+580	1 x 5	4.00
5	13+300	1 x 3.7	3.00
6	14+204	1 x 5.4	3.00
7	15+380	1 x 3.4	6.50
8	16+215	1 x 5.4	4.50
9	16+483	1 x 5.4	4.50

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 12+365 of Neemuch-Nayagaon

Km. 5+840 of Neemuch-Nayagaon

Km. 14+204 of Bamaniya-Raipuriya

Km. 13+960 of Neemuch-Navagaon

Figure 4.2: Representative photos of Box/Slab culverts

4.4.2. General description of the Pipe Culverts

There are 26 Pipe culverts along Jaora-Piploda road and 9 Pipe culverts along Piploda-Sailana road.

There are 12 Pipe culverts along Neemuch-Nayagaon road.

There are 9 Pipe culverts (7 Single row pipe culverts, 1 double row pipe culverts and 1 five row pipe culvert) along Soyat-Pirawa road.

There are 33 Pipe culverts along Bamaniya -Raipurlya road. The details of the culverts are below.

Table 4.4: List of Pipe Culverts

S. No.	Chainage	Span
Bamaniya -Raipurlya road		
1	0+250	1 x 1.2
2	1+150	1 x 1.2
3	1+180	1 x 1.2
4	1+349	1 x 1.2
5	1+893	1 x 1.2
6	2+350	1 x 1.2
7	2+520	1 x 1.2
8	3+985	1 x 1.2
9	6+285	1 x 1.2
10	6+542	1 x 1.2
11	7+920	1 x 1.2
12	8+720	1 x 1.2
13	8+980	1 x 1.2
14	9+470	1 x 1.2
15	12+500	1 x 1.2
16	13+350	1 x 1.2
17	14+720	1 x 1.2
18	4+180	2 x 1.2
19	5+190	2 x 1.2
20	7+120	2 x 1.2
21	7+598	2 x 1.2
22	7+800	2 x 1.2
23	8+010	2 x 1.2
24	11+050	2 x 1.2
25	11+520	2 x 1.2
26	12+100	2 x 1.2
27	12+240	2 x 1.2
28	13+700	2 x 1.2
29	13+930	2 x 1.2
30	15+600	2 x 1.2

S. No.	Chainage	Span
Jaora-Piploda road		
1	1+300	1 x 1.2
2	3+380	1 x 1.2
3	4+802	1 x 1.2
4	5+400	1 x 1.0
5	6+322	1 x 1.0
6	6+500	1 x 1.0
7	6+800	1 x 1.2
8	9+565	1 x 1.2
9	10+300	1 x 1.2
10	14+500	1 x 1.2
11	18+200	1 x 1.2
12	19+100	1 x 1.2
13	0+800	2 x 1.2
14	7+080	2 x 1.2
15	9+990	2 x 1.2
16	12+500	2 x 1.2
17	15+050	2 x 1.2
18	17+800	2 x 1.2
19	18+300	2 x 1.2
20	19+800	2 x 1.2
21	23+940	2 x 1.0
22	11+200	3 x 1.2
23	11+400	3 x 1.2
24	14+670	3 x 1.2
25	14+800	3 x 1.2
26	18+450	3 x 1.2

S. No.	Chainage	Span
Piploda-Sailana road		
1	7+400	1 x 1.2
2	0+400	2 x 1.2
3	0+580	2 x 1.2
4	4+057	2 x 1.2
5	5+355	2 x 1.2
6	6+605	2 x 1.2
7	11+400	2 x 1.0
8	15+410	2 x 1.2
9	17+800	2 x 1.2
Neemuch-Nayagaon road		
1	1+042	1 x 1.2
2	1+750	1 x 1.2
3	2+300	1 x 1.2
4	3+340	1 x 1.2
5	8+890	1 x 1.0
6	10+980	1 x 1.2
7	14+350	1x1.2
8	16+900	1x1.2
9	2+430	2 x 1.2
10	4+080	2 x 1.2
11	5+200	2 x 1.2
12	7+680	4 x 0.9
Soyat-Pirawa road		
1	1+720	1 x 1.20
2	2+555	1 x 1.20
3	3+016	1 x 1.20
4	4+326	1 x 1.20
5	4+746	1 x 1.20
6	5+326	1 x 1.20
7	5+556	1 x 1.20

S. No.	Chainage	Span
31	15+820	2 x 1.2
32	1+970	3 x 1.2
33	3+385	3 x 1.2

S. No.	Chainage	Span

S. No.	Chainage	Span
8	0+679	2 x 1.2
9	4+026	5 x 1.2

4.4.3. Condition of the Pipe Culverts*:*

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 5+190 of Bamaniya-Raipurlya

Km. 4+326 of Soyat-Pidawa

Figure 4.3: Representative photos of Pipe Culvert

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade as such no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given. Also Jaora-Piploda-Jalndharkheda section was considered as Homogeneous section (HS-1) and Neemuch-Jawad-Khor-Nayagaon as HS-II.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	HS-I Parameters	HS-II Parameters
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	15 years	15 years
3	Design Traffic* (MSA)	1.67 MSA actual 10MSA Adopted	8.38 MSA actual 10MSA Adopted
4	Surface course (BC)	40 (mm)	40 (mm)
5	Binder course (DBM)	50 (mm)	50 (mm)
6	Base course (WMM)	250 (mm)	250 (mm)
7	Sub Base course (GSB)	200 (mm)	200 (mm)

5.3 Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”.

Based on the above actual traffic during design phase, MSA estimated at 15 years are 1.67, 8.38 of HS-1 and HS-2 respectively.

Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic 10 MSA for a design life of 15 years for Bituminous layers and granular layers (up to end of year 2028) for HS-I and HS-II, whereas the actual traffic is 1.67 MSA and 8.38 MSA for 15 years for HS-I and HS-2 respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed on or before 2020 (Completed recently) and next MM is scheduled in 2028.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Details of Road Furniture

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs Village sign boards Information Boards Other Sign Boards Gantry Sign Boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
2	Road Marking	Studs & Lane marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

During the site visit it is observed that all Safety items are provided as shown in the following table

Km. 6+800 of Neemuch-Jawad-Khon

Km. 8+600 of Neemuch-Jawad-Khon

Km. 21+070 of Neemuch-Jawad-Khon

Km. 0+800 of Bamniya-Petlabad-Raipuriya

Km. 0+800 of Soyat-Pidawa

Km. 1+700 of Soyat-Pidawa

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

CHAPTER 7. OPERATION AND MAINTENANCE

7.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines.

7.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

7.3 Operations

7.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

- Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
- Carrying out preventive and periodic maintenance of the Project road;
- Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs;
- Functioning of the lighting system;
- Functioning of the Patrolling System

- Functioning of rescue and medical aid services
- Ambulance as and when required
- Functioning of the Project Facilities
- Administrative, Operational and Maintenance Base Camp
- Truck Lay byes
- Pickup Bus stops / Bus Bays
- Protection of the environment and provision of equipment and materials therefor;
- Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
- Complying with Safety Requirements in accordance with Article 18.

7.4 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

7.4.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

7.4.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

7.4.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 7.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Periodic Maintenance	Status of Periodic Maintenance
1st Periodic Maintenance	BC Overlay 2020	Completed
2nd Periodic Maintenance	BC Overlay 2028	Planed to execute

7.4.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include:

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

7.5 Review of Test Reports

7.5.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Oct - 2020. As per Schedule K of CA, if the stretch exceeds 3000mm in a Km. shall be rectified. No stretch exceeds the permissible limit.

7.5.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test Oct 2020. The test report has been verified and found within permissible limits as per IRC 81.

7.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 4.**

Table 7.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.621	0.242		0.00	**0.86**
2021	0.639	0.249		0.00	**0.89**
2022	0.659	0.257		0.00	**0.92**
2023	0.678	0.264		0.00	**0.94**
2024	0.699	0.272		0.00	**0.97**
2025	0.720	0.280		0.00	**1.00**
2026	0.741	0.289		0.00	**1.03**
2027	0.764	0.297	15.11	0.00	**16.17**
2028	0.786	0.306	15.11	0.00	**16.20**
2029	0.198	0.077		0.00	**0.27**
Total	**6.50**	**2.53**	**30.22**	**0.01**	**39.27**

CHAPTER 8. REVIEW OF CONCESSION AGREEMENT

8.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work, which includes the following.

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- Operation and maintenance of the Project road in accordance with the provisions of the Agreement;
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of the Agreement and matters incidental

8.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. A copy of LOA is enclosed at **Annexure-5.**

8.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

8.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfill its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Concession Agreement

8.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement.

- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 20% of the Total Project Cost.

8.5.1. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

8.6 Provisional Completion Certificate (Clause 14.3)

- Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA.

A copy of PCOD enclosed at **ANNEXURE-6.**

8.7 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

A copy of CC enclosed at **ANNEXURE-7.**

8.8 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDCL. Details are given in **ANNEXURE 9.**

8.9 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

8.10 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

8.11 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

8.12 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

8.13 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

8.14 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

8.15 Annuity (Clause 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 12.06 Crores.

As per Clause 27.2.2, In case the COD is different from the Schedule Y, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date.

Table 8.1: Status of Annuity Payments

S. No.	Particulars	Paid on
1	1st Annuity	18-Dec-14
2	2nd Annuity	14-May-15
3	3rd Annuity	18-Nov-15
4	4th Annuity	13-May-16
5	5th Annuity	18-Nov-16
6	6th Annuity	17-May-17
7	7th Annuity	30-Nov-17
8	8th Annuity	29-May-18
9	9th Annuity	15-Nov-18
10	10th Annuity	21-May-19
11	11th Annuity	13-Nov-19
12	12th Annuity	22-May-20

The Authority is paying all the annuities regularly.

8.16 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

8.17 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 9. INSURANCE

9.1 General

As per clause 32.1, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks Copy of insurance is given **ANNEXURE 8.**

Table 9.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Policy
			From	To	
Civil Engineering Completed Risk	National Insurance Company Limited	3213004419 10001989	27.3.2020	26.3.2021	Road and Structure

CHAPTER 10. CONCLUSION

10.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

10.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

10.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

10.4 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

10.5 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time-to-time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2028.

10.6 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
(i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31																
0+000	1+000								G		P+E	F	Fair	LD	F	
1+000	2+000								G		E	F	Fair	ULD	PF	
2+000	3+000								G		E	F	Fair	ULD	PF	
3+000	4+000								G		E	F	Fair	ULD	PF	
4+000	5+000								G		E	F	Fair	ULD	PF	
5+000	6+000								G		E	F	Fair	ULD	PF	
6+000	7+000								G		E	F	Fair	ULD	PF	
7+000	8+000								G		E	F	Fair	ULD	PF	
8+000	9+000								G		E	F	Fair	ULD	PF	
9+000	10+000								G		E	F	Fair	ULD	PF	
10+000	11+000								G		E	F	Fair	ULD	PF	
11+000	12+000								G		E	F	Fair	ULD	PF	
12+000	13+000								G		E	F	Fair	ULD	PF	
13+000	14+000								G		E	F	Fair	ULD	PF	
14+000	15+000								G		E	F	Fair	ULD	PF	
15+000	16+000								G		E	F	Fair	ULD	PF	
16+000	17+000								G		P+E	F	Fair	LD	F	
17+000	18+000								G		P+E	F	Fair	LD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
18+000	19+000								G		E	F	Fair	ULD	PF	
19+000	20+000								G		E	F	Fair	ULD	PF	
20+000	21+000								G		E	F	Fair	ULD	PF	
21+000	22+000								G		E	F	Fair	ULD	PF	
22+000	23+000								G		E	F	Fair	ULD	PF	
23+000	24+000								G		E	F	Fair	ULD	PF	
24+000	25+000								G		E	F	Fair	ULD	PF	
25+000	26+000								G		E	F	Fair	ULD	PF	
26+000	27+000								G		E	F	Fair	ULD	PF	
27+000	28+000								G		E	F	Fair	ULD	PF	
28+000	29+000								G		E	F	Fair	ULD	PF	
29+000	30+000								G		E	F	Fair	ULD	PF	
30+000	31+000								G		E	F	Fair	ULD	PF	
31+000	32+000								G		E	F	Fair	ULD	PF	
32+000	33+000								G		E	F	Fair	ULD	PF	
33+000	34+000								G		E	F	Fair	ULD	PF	
34+000	35+000								G		E	F	Fair	ULD	PF	
35+000	36+000								G		E	F	Fair	ULD	PF	
36+000	37+000								G		E	F	Fair	ULD	PF	
37+000	38+000								G		E	F	Fair	ULD	PF	
38+000	39+000								G		E	F	Fair	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
39+000	40+000								G		E	F	Fair	ULD	PF	
40+000	41+000								G		E	F	Fair	ULD	PF	
41+000	42+000								G		P+E	F	Fair	LD	F	
42+000	42+270								G		P+E	F	Fair	LD	F	
(ii) Bamniya-Petlabad-Raipururiya																
0+000	1+000								G		P+E	F	Fair	LD	F	
1+000	2+000								G		E	F	Fair	ULD	PF	
2+000	3+000								G		E	F	Fair	ULD	PF	
3+000	4+000								G		E	F	Fair	ULD	PF	
4+000	5+000								G		E	F	Fair	ULD	PF	
5+000	6+000								G		E	F	Fair	ULD	PF	
6+000	7+000								G		E	F	Fair	ULD	PF	
7+000	8+000								G		E	F	Fair	ULD	PF	
8+000	9+000								G		E	F	Fair	ULD	PF	
9+000	10+000								G		P+E	F	Fair	LD	F	
10+000	11+000								G		E	F	Fair	ULD	PF	
11+000	12+000								G		E	F	Fair	ULD	PF	
12+000	13+000								G		E	F	Fair	ULD	PF	
13+000	14+000								G		E	F	Fair	ULD	PF	
14+000	15+000								G		E	F	Fair	ULD	PF	
15+000	16+000								G		E	F	Fair	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
16+000	17+000								G		P+E	F	Fair	LD	PF	
17+000	18+000								G		P+E	F	Fair	LD	PF	
18+000	18+180								G		P+E	F	Fair	LD	PF	
(iii) Neemuch –Jawad - Khoh - Nayagaon																
0+000	1+000								G		E	F	Good	ULD	PF	
1+000	2+000								G		E	F	Good	ULD	PF	
2+000	3+000								G		E	F	Good	ULD	PF	
3+000	4+000								G		E	F	Good	ULD	PF	
4+000	5+000								G		E	F	Good	ULD	PF	
5+000	6+000								G		E	F	Good	ULD	PF	
6+000	7+000								G		E	F	Good	ULD	PF	
7+000	8+000								G		E	F	Good	ULD	PF	
8+000	9+000								G		E	F	Good	ULD	PF	
9+000	10+000								G		P+E	F	Good	LD	PF	
10+000	11+000								G		P+E	F	Good	LD	PF	
11+000	12+000								G		E	F	Good	ULD	PF	
12+000	13+000								G		E	F	Good	ULD	PF	
13+000	14+000								G		E	F	Good	ULD	PF	
14+000	15+000								G		E	F	Good	ULD	PF	
15+000	16+000								G		E	F	Good	ULD	PF	
16+000	17+000								G		P+E	F	Good	LD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
17+000	18+000								G		P+E	F	Good	LD	F	
18+000	19+000								G		E	F	Good	ULD	PF	
19+000	20+000								G		E	F	Good	ULD	PF	
20+000	21+070								G		P+E	F	Good	LD	PF	
(iv) Soyat-Pidawa																
0+000	1+000								G		E	F	Good	LD	F	
1+000	2+000								G		E	F	Good	ULD	PF	
2+000	3+000								G		E	F	Good	ULD	PF	
3+000	4+000								G		E	F	Good	ULD	PF	
4+000	5+000								G		E	F	Good	ULD	PF	
5+000	6+000								G		E	F	Good	ULD	PF	
6+000	7+000								G		E	F	Good	ULD	PF	

Annexure 2: Condition of Structures

S. No.	Chainage	Type of Structure	Sub structure	Super structure	Crash barrier	Expansion Joint	Approach slabs	Drainage spouts	Approaches	Wearing coat	Toe wall
Jaora-Piploda Road											
1	16+250	Minor Bridge	Good	Good	Good	Fair	-		Good	Good	Good
2	19+115	Minor Bridge	Good	Good	Good	Fair	-		Good	Good	Good
Piploda -Sailana Road											
1	13+914	Minor Bridge	Good	Good		Fair	-		Good	Good	-
2	14+720	Minor Bridge	Good	Fair	-	Fair	-		Good	Good	-
Neemuch -Nayagaon Road											
1	11+466	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
2	19+656	Minor Bridge	Good	Good	-		-		Good	Good	-
3	20+535	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
Bamaniya - Raipurlya Road											
1	0+884	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	-
2	3+809	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
3	6+840	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good

Annexure 3: Condition of Box/Slab/Pipe Culverts

Box/Slab Culverts

S. No.	Chainage	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall	Remarks
Jaora - Piploda							
1	0+772	Good	Good		-	Good	
2	19+263	Good	Good		-	Good	
3	19+580	Good	Good		-	Good	
4	20+205	Good	Good		Good	Good	
5	21+795	Good	Good		-	Good	
6	22+780	Good	Good	Good	-	Good	
7	23+230	Good	Good	Good	Good	Good	
8	23+960	Good	Good	Fair	-	Good	
Piploda – Sailana							
1	1+900	Good	Good	Fair	-	Good	-
2	8+350	Good	Good	Fair	-	Good	-
3	8+800	Good	Good	Fair	-	Good	-
4	10+100	Good	Good		-	Good	-
5	10+990	Good			-	Good	
6	13+100	Good	Good		-	Good	-
7	15+840	Good	Good		-	Good	
8	16+503	Good	Good		-	Good	-
9	17+206	Good	Good		-	Good	
Neemuch - Jawad - Nayagaon							
1	5+840	Good	Good	Good	-	Good	-
2	10+200	Good	Good		-	Good	
3	11+760	Good	Good		-	Good	-
4	12+365	Good	Good		-	Good	-
5	13+960	Good	Good		-	Good	-
6	16+760	Good	Good	Good	-	Good	-
7	20+720	Good	Good	Good	-	Good	-
Bamaniya - Petlawad							
1	5+060	Good	Good		Good	Good	-
2	5+780	Good	Good		Good	Good	-
3	9+280	Good	Good		Good	Good	-
4	11+580	Good	Good		Good	Good	-
5	13+300	Good	Good		Good	Good	-
6	14+204	Good	Good		Good	Good	

S. No.	Chainage	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall	Remarks
7	15+380	Good	Good	Good	Good	Good	-
8	16+215	Good	Good	Good	Good	Good	-
9	16+483	Good	Good		Good	Good	-

Hume Pipe Culverts

S. No.	Chainage	Hume Pipe	Head wall
Jaora – Piploda			
1	0+800	Fair	Good
2	1+300	Fair	Good
3	3+380	Fair	Good
4	4+802	Fair	Good
5	5+400	Fair	Good
6	6+322	Fair	Good
7	6+500	Fair	Good
8	6+800	Fair	Good
9	7+080	Fair	Good
10	9+565	Fair	Good
11	9+990	Fair	Good
12	10+300	Fair	Good
13	11+200	Fair	Good
14	11+400	Fair	Good
15	12+500		
16	14+500	Good	Good
17	14+670	Good	Good
18	14+800	Good	Good
19	15+050	Good	Good
20	17+800	Good	Good
21	18+200	Good	Good
22	18+300	Good	Good
23	18+450	Good	Good
24	19+100	Good	Good
25	19+800	Good	Good
26	23+940	Good	Good
Piploda – Sailana			
1	0+400	Good	Good
2	0+580	Good	Good
3	4+057	Good	Good

S. No.	Chainage	Hume Pipe	Head wall
4	5+355		Good
5	6+605	Good	Good
6	7+400	Good	Good
7	11+400	Good	Good
8	15+410	Good	Good
9	17+800	Good	Good
Neemuch - Jawad - Nayagaon			
1	1+042	Good	Good
2	1+750	Good	Good
3	2+300	Good	Good
4	2+430	Good	Good
5	3+340	Good	Good
6	4+080	Good	Good
7	5+200	Good	Good
8	7+680	Good	Good
9	8+890	Good	Good
10	10+980	Good	Good
11	14+350	Good	Good
12	16+900	Good	poor
Soyat – Pirawa			
1	0+679	Good	Good
2	1+720	Good	Good
3	2+555	Good	Good
4	3+016	Good	Good
5	4+026	Good	Good
6	4+326	Good	Good
7	4+746	Good	Good
8	5+326	Good	Good
9	5+556	Good	Good
Bamaniya - Petlawad			
1	0+250	Good	Good
2	1+150	Good	Good
3	1+180	Good	Good
4	1+349	Good	Good
5	1+893	Good	Good
6	1+970	Good	Good
7	2+350	Good	Good
8	2+520	Good	Good

S. No.	Chainage	Hume Pipe	Head wall
9	3+385	Good	Good
10	3+985	Good	Good
11	4+180	Good	Good
12	5+190	Good	Good
13	6+285	Good	Good
14	6+542	Good	Good
15	7+120	Good	Good
16	7+598	Good	Good
17	7+800	Good	Good
18	7+920	Good	Good
19	8+010	Good	Good
20	8+720	Good	Good
21	8+980	Good	Good
22	9+470	Good	Good
23	11+050	Good	Good
24	11+520	Good	Good
25	12+100	Good	Good
26	12+240	Good	Good
27	12+500	Good	Good
28	13+350	Good	Good
29	13+700	Good	Good
30	13+930	Good	Good
31	14+720	Good	Good
32	15+600	Good	Good
33	15+820	Good	Good

Annexure 4: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item	Frequency	Unit	No.	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	87.965	12	4	350	1,477,812	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	27.12	24	4	350	911,232	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Kms.	27.12	52	1	1939	2,734,455	01 Nos of Labour
4	Watering in Avenue plants	Once in Week	Kms.	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Kms.	27.12	12	0	21000	-	02 Nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Kms.	43.9825	2	5	350	153,939	5 Nos of labour per Km. (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	127	2	2	650	330,200	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Kms.	87.965	4	2	350	246,302	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	65	6	2	350	273,000	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	0.00	6	60	350	-	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	11	2	2	350	15,400	02 Nos of Labour for removal of vegetation/Structure
								6,142,340	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12		200000	-	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance

S. No.	Item	Frequency	Unit	No.	Frequency per year	Quantity	Rate	Amount	Remarks
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	2.4	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Grass cutter	Monthly	Nos.	2.4	12	0	12000	1,464	(12000/year)
4	Bikes	Monthly	Nos.	2.4	12	0	2500	4,880	Per Supervisor/Per Month
5	Building Maintenance	Yearly			12			-	
6		Yearly	Nos.		12		5000	60,000	10000/month
								66,344	
								6,208,684.00	

Incidental cost for 1 year

S. No.	Item		Unit	No.	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	2,048.27	516	1,056,907	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	777	168	130,536	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1319.475	225	890,646	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			37.50	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (Km. Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	87.965	4	22.00	2250	198,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures	Yearly	Rmt.	0		0	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)

S. No.	Item		Unit	No.	Frequency	Quantity	Rate	Amount	Remarks
	constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.								
Total amount for 1 Year								**2,418,089**	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 0
2	Fuel for Generator & Vehicles	₹ 0
3	Electricity	₹ 0
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 0
6	Refurbishment of Toll Plaza Equipment	₹ 0
	Total Amount	**₹ 10,000**

Summary of Major/Periodic Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimataion	20-01-2021					
Major Maintenance - Highway	01-04-2021	16,47,43,158	0.20	3.0%	16,57,31,617	16.57
Major Maintenance - Highway	01-04-2028	16,47,43,158	6.20	3.0%	19,53,85,385	19.54
				Total	**₹ 36,11,17,002**	**36.11**

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 Kg. to 3.0 Kg./10 Sqm.	Sqm.	6,90,415.00	14.00	96,65,810	6,90,415.00	14.00	96,65,810
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying	Cum.	15,534.34	7,480.00	11,61,96,845	15,534.34	7,480.00	11,61,96,845

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.							
	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum.	-	6,800.00		-	6,800.00	
	Micro surfacing	Sqm.	1,72,603.75	160.00	2,76,16,600	1,72,603.75	160.00	2,76,16,600
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	2,097.60	250.00	5,24,400	2,097.60	250.00	5,24,400
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	1,311.00	130.00	1,70,430	1,311.00	130.00	1,70,430
	Total				**15,41,74,085**			**15,41,74,085**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt.	-	380.00		-	380.00	
2	Providing and laying lane markings of hot	Sqm.	20,482.70	516.00	1,05,69,073	20,482.70	516.00	1,05,69,073

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.							
3	Road Studs	Nos.	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**1,05,69,073**		-	**1,05,69,073**
	Grand Total				**16,47,43,158**			**16,47,43,158**

Annexure 5: Letter of Award

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/MDR/P-IV/2012/ 9539
Bhopal, dated 09 November, 2012

M/s Dilip Buildcon Ltd.
E-5/99, Arera Colony,
Bhopal
Fax: 4247574

Sub: **Regarding development of (i) Jaora-Piploda-Jalandharkheda & Piploda-Sailana (ii) Raipuria-Petlabad-Bamania (iii) Jawad-Khoh & (iv) Soyat-Pidawa Major District Road under Package-IV on BOT (Annuity) basis.**

In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of (i) Jaora-PiplodaJalandharkheda & Piploda-Sailana (ii) Raipuria-Petlabad-Bamania (iii) Jawad-Khoh & (iv) Soyat-Pidawa Major District Road under Package-IV on BOT (Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. **12.06 crores (Rupees twelve crores six lacs only)** as Annuity Amount payable in terms of Clause 27 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.

Yours faithfully

Encl: **Duplicate copy of LoA**

DILIP BUILDCON LIMITED BHOPAL

Arun Paliwal)
Dy .General Manager

Connecting People Through quality infrastructure

Annexure 6: Provisional Completion Certificate

TES

T E S

Theme Engineering Services Pvt. Ltd.

Mr.-191, Vyas Nagar, Near Hanuman & Shankar Temple,
Ujjain-456010 (M.P.), Tel. 0734-2519209
Email:themeujjain@gmail.com

Ref. No: - Package-02/TL/2014/ 807 Date: - 09/05/2014

To

The Chief Engineer (MDR)
MPRDC, 45-A, Arera Hills,
Bhopal (M.P)

Sub: - Development of (I) Jaora-Piploda Jalandharkhera & Piploda-Sailana (II) Bamaniya - Petlabad-Raipuriya (III) Neemuch-Jawad-Khoh-Nayagaon (IV) Soyat-Pirawa Major District Roads on DBFOT under Package – IV on BOT (Annuity) basis: **Regarding issue of Provisional Certificate as per Article-14, clause 14.3 of Concession Agreement.**

Ref: - Concessionaire's letter no. DBL-JSTL/TL/PKG-IV/2014-03/173 dated 30.03.14.

Dear Sir,

With reference to above the Provisional Certificate for completion of construction works of above subjected roads along with the punch list is submitted herewith for your kind perusal and necessary action please.

Thanking you.

(O. P. Sharma)
Team Leader

Encl: - Provisional Certificate with punch list.

Copy to,

1) General Manager MPRDC, Indore.
2) Divisional Manager, MPRDC, Ujjain.
3) Sh. Mahinder Singh, Chief General Manager, TES, Jaipur.
4) Authorized Signatory, M/S DBL Jaora Sailana Tollways Ltd, E-5/99, Arera Colony, Bhopal.

Encl: - Provisional Certificate with punch list.

(O. P. Sharma) 9-5-2014
Team Leader

Theme Engineering Services Pvt. Ltd.

B-24, Gokul Vatika, Jawahar Circle, Jaipur-3012018(Raj.), Ph.:+91-141-2724495-96-97,
Telefax: +91-141-2724491, Email:theme@dataone.in,theme@themeengineering.com

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Annexure 7: Completion Certificate

TES

Theme Engineering Services Pvt. Ltd.
B-24, Gokul Vatika, Jawahar Circle, Jaipur-302018 (Raj.)
☎+91-141-2724495-96-97, fax: +91-141-2724491
Email: theme@dataone.in , theme@themeengineering.com

Theme/MPRDC/Ujjain/880/14/1185 Date: 14.10.2014

To,
The Chief Engineer,
MPRDC
45- A Arera hills
Bhopal- 462011

Sub: - Independent Engineer for development of major roads on BOT, BOT(Toll + Annuity) basis under Ujjain division.

Reg: - Completion Certificate (i) (Jaora – Pipaloda – Jalandharkheda & Pipaloda – Sailana, (ii) Raipuriya –Petlawad-Bamaniya, (iii) Neemuch – Jawad – Khor, (iv) Soyat – Pidawa, Road of Major District Roads

Dear Sir,

This is with reference to our letter no. Theme/MPRDC/Ujjain/880/14/993 dated 06.09.2014, addressed to Divisional Manager, MPRDC Ujjain and a copy submitted to your office, seeking prior approval to issue **Completion Certificate** of the above subject project in compliance of the clause 12 under "Terms of Reference" of Section 6 of Contract Agreement. On subsequent discussions with your good self and General Manager MPRDC, Indore on 14th October 2014 and with DM, MPRDC Ujjain , it is pointed out that the signature of the then Divisional Manager MPRDC Ujjain on the **Punch List** submitted vide our Ujjain's office letter No Package II/TL/2014/916 dated 01.08.2014 be treated as approval from MPRDC.

As such, the Completion Certificate in standard format with this forwarding letter considering your prior approval is recommended.

Thanks & Regards,

Sincerely Yours

Mahinder Singh
(Chief General Manager)
Theme Engineering Services Pvt. Ltd
B- 24, Gokul Vatika, Jawahar Circle
Jaipur , (Raj)- 302018
☎+91-141-2724495-96-97,
fax: +91-141-2724491

Annexure 8: Insurance

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001989

जारीकर्ता कार्यालय/Issuing Office
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2662822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355
बिक्रय चैनल कोड/Sales Channel Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL JAORA SAILANA TOLLWAYS LTD
पता/ Address: PLOT NO 5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881840
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAECD4621R

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 11,61,034.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 1,04,493.00		
SGST/UTGST	₹ 1,04,493.00		
IGST	₹ 0.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	8800200327086990 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनःप्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 13,70,020.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Thirteen Lakh Seventy Thousand Twenty Only.)

Location: Jaora Piploda ¿Jalandharkheda & Piploda ¿Sailana (i) Raipuria- Petlabad ¿ Bamania (iii) Jawad - Khoh & (iv) Soyat - Pidawa Major District Road, Madhya Pradesh Ratlam, Jaora, 457226.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	1,10,32,35,000.00	1,00,000.00
2	Roads	Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	5,80,65,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable: Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Jaora Piploda Jalandharkheda & Piploda Sailana (ii) Raipuria Petlabad Bamania (iii) Jawad Khoh & (iv) Soyat Pidawa Major District Road under Package IV on BOT (Annuity) Basis.

Name of the co insured under the policy is Dilip Buildcon Ltd. & MPRDCL.

Printed on 27/03/2020 by ID: 75159

Page no: 1

INSURANCE

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पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001989

जारीकर्ता कार्यालय/***Issuing Office***
कार्यालय कोड /*Office Code: 321300*
कार्यालय पता /*Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.*
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नाम /*Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810*
सह दलाल कोड / *Co Broker Code:*

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause.

जिसकी गवाही में दिनों/ माह /वर्ष को उपरोक्त उल्लेखित कार्यालय पते पर अधोहस्ताक्षरी को विधिवत अधिकृत किया जा रहा है उसके हाथ निर्धारित किए जाएं। यह अनुसूची, संलग्न पॉलिसी, खण्ड, पृष्ठांकन और पॉलिसी शब्दों, जो कंपनी वेबसाईट https://nationalinsurance.nic.co.in पर उपलब्ध है, को एक अनुबंध के रूप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभिव्यक्ति जिसके लिए यह विशिष्ट अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ वहन करेगा चाहे जहाँ भी उल्लेखित हो। यह आश्वासन दिया जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्राथमिकता निरस्त हो जाएगी। /***IN WITNESS WHEREOF***, *the undersigned being duly authorized hereunto set his/ her hand at the office address mentioned above, this* **27/March/2020.** *This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website* https://nationalinsurance.nic.co.in *shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that* ***IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'***

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अधिकृत हस्तात्कृषरकर्ता/ ***Authorized Signatory***

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Annexure 9: Change of Scope

No.8206/MPRDC/MDR/2014 Bhopal, date...../10/14

To,

Team Leader,
M/s Theme Engineering Services,
MI-191, Vyas nagar Niyat Hanuman &
Shankar Temple,
Ujjain-456010 (M.P)

Sub:- Developement of (i) Jaora- Piploda -Jalandharkheda &-Piploda Sailana Road (ii) Raipuria-Petlabad-Bamania Road (iii) Javad Road to Khoh Road (iv) Soyat-Pidawa Road - Change of Scope Proposal

Ref: 1. Minutes of Advisory Committee meeting dated22.9.2014
2 Your letter no. IV/TL/2014/976dated 20.92.014

Please find enclosed the Minutes of meeting of Advisory Committee of its meeting dated 22.09.2014the change of scope for the work (i) Jaora- Piploda -Jalandharkheda &-Piploda Sailana Road (ii) Raipuria-Petlabad-Bamania Road (iii) Javad Road to Khoh Road (iv) Soyat-Pidawa Road.

In principle approval of change of scope as per minutes of advisory committee (enclosed) are hereby granted with the instructions to submit financial implication as per provision of concession agreement within 15 days time.

Encl: Minutes of meeting

7/10/14
Chief Engineer (MDR)
MPRDC Bhopal

Endt.No.8207/MPRDC/MDR/2014 Bhopal, dated : 7 /10/14

Copy to :-
1. General Manager, MPRDC, Indore
2. General Manager (Fin.), MPRDC, Bhopal.
3. Divisional Manager, MPRDC, Ujjain
4. M/s DBL, Bhopal

Encl: Minutes of meeting

7/10/14
Chief Engineer (MDR)
MPRDC Bhopal

MINUTES OF MEETING

Meeting of advisory committee of MPRDC for change of scope for Development of (i) Jaora-Pipaloda- Jalandharkheda & Piploda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad- Khoh (iv) Soyat – Pidwa Major District Road under Package-IV on BOT (Annuity) Basis has been held in the office of MPRDC on dated 22-09-2014. Following officials were present in the meeting:-

1. Shri A.S. Chendke , Technical Advisor, MPRDC
2. Shri Narendra Kumar, Chief Engineer (MDR)
3. Shri Alok Chaturvedi, General Manager (MDR)
4. Dr. Arun Paliwal, General Manager (Finance)
5. Shri. A. L. Suryavanshi, General Manager, MPRDC, Indore
6. Shri. Rakesh Jain, Divisional Manager ,(Ujjain)
7. Shri Anil Shrivastava, AGM (MDR)
8. Shri O. P. Sharma,Team Leader, M/s Theme Engineering Services Pvt ltd, Ujjain
9. Shri Manish Dixit, Project Manager, DBL, Concessionaire

The work change of scope recommended by Independent Engineer vides its letter no. Package-IV/TL/2014/976 dated 20.09.2014.These have been discussed in meeting as below.

Recommondation of IE Change of Scope for Road Works in Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road Project

Place/Location	As per Schedule-B	As Constructed by Concessionaire on Site	Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	Design Length as per Schedule-B	Actual Length of Roads		
Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road	42.272	42.235	Actual Length of Project is increased . It is recommended to consider increased length as positive Change of Scope	Committee agreed to consider as positive change of scope as recommended by IE
Neemuch - Jawad - Khor Road	21.070	21.060		
Raiuriya - Petlawad - Bamaniya road	18.177	18.400		
Soyat - Pirawa Road	6.255	6.300		
Total Length :-	87.774	87.995		

PM. DBL

TL

1 of 4

Change of Scope for Road Works in Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road Project

Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Jaora Town	0.000	0.600	0.600	18.00	0	0.05	0.050	18.00	The length given in Schedule-B in Jaora Town was 0.60 Km. The habitation in this town start from 0 to 0.765 km. Hence the length increased to cover complete habitation stretch in this town, which is recommended to considered as Positive change of Scope.	Committee agreed to consider as positive change of scope for increased length, as recommended by IE
					0.050	0.765	0.715	18.00		
Pipaloda Town	17.100	17.900	0.800	15.00	16.980	17.780	0.800	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Sherpur Village	6.000	6.750	0.750	18.00	5.860	6.610	0.750	14.50	Construction of road work in Sherpur & Amba Village within available ROW. Land could not be made available due to public resistance in required width for construction as per schedule-B. It is recommended to considered difference of provision of as per schedule-B and actual work done as negative change of Scope	Committee agreed to consider as Negative change of scope as recommended by IE.
Amba Village	10.200	10.550	0.350	20.00	10.150	10.500	0.350	14.50		
Kariya Village	14.100	14.500	0.400	18.00	14.170	14.570	0.400	18.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Sailana Town	18.200	18.322	0.122	18.00	18.158	18.285	0.127	9.00	Construction of road work in Sailana town within available ROW. Land could not be available as required for construction as per schedule-B. It is recommended to consider difference of provision of schedule-B and actual work done as negative change of Scope	Committee agreed to consider as Negative change of scope as recommended by IE.
			3.022				3.192			

P.M. DBL

TL

2 of 4

Change of Scope for Road Works in Neemuch - Jawad - Khor Road Project

Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Suwakheda	3.520	3.880	0.360	15.00	3.52	3.91	0.390	15.00	The length given in Schedule-B in Suwakheda village was 0.360 Km. The length of habitation in this village was found 0.390km at site. Hence the length increased to cover complete habitation stretch in this village, which is recommended to considered as Positive change of Scope.	Committee agreed to consider Positive change of scope as recommended by IE.
Jawad Town (4 Lane)	8.800	10.300	1.500	20.00	8.800	10.300	1.500	20.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope .
Jawad Town	10.300	11.210	0.910	15.00	10.300	10.350	0.050	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
					10.350	10.520	0.170	25.50	In principally approval has already granted by MPRDC letter No. 2174/MPRDC/MDR/20 dated 30/05/2014	
					10.520	11.210	0.690	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Khor Village	15.300	17.930	2.630	15.00	15.300	17.930	2.630	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Nayagaon	20.710	21.070	0.360	15.00	20.330	21.060	0.730	15.00	In principally approval has already granted by MPRDC letter No. 2174/MPRDC/MDR/20 dated 30/05/2014	
			5.760				6.160			

Change of Scope for Road Works in Bamaniya - Petlwad - Raipuriya Road Project

Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Bamaniya	0.000	0.700	0.700	15.00	0.000	0.210	0.210	10.50	Construction of road work in Bamaniya town was completed within available ROW. Land could not be made available as required for construction as per schedule-B. It is recommended to considered difference of provision of schedule-B and actual work done as negative change of Scope	Committee agreed to consid Negative change of scope recommended by IE.
					0.210	0.700	0.490	15.00		
Petlwad (4 Lane)	10.080	11.020	0.940	4 lane	10.060	10.520	0.460	4 lane	Constructed as per Schedule-B. No Change of scope .	No Change of scope.
					10.520	11.000	0.480			
Sagadiya	16.800	17.100	0.300	15.00	16.800	17.100	0.300	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope .
Raipuriya	17.500	18.177	0.677	15.00	17.100	17.300	0.200	10.00	Construction of road work in Raipuriya town was completed within available ROW converging complete habitation. It is recommended to considered difference of provision of schedule-B and actual work done positive change of Scope	Committee agreed to consi Positive change of scope recommended by IE.
					17.300	18.400	1.100	15.00		
			2.617				2.140	-0.477		

Change of Scope for Road Works in Soyat - Pidawa Road Project

Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Soyat	0.000	1.000	1.000	20.00	0	1.5	1.500	14.00	Construction of road work in Soyat town was completed within available ROW converging complete habitation. Due to which length has been increased and work could not be completed in width specified in Schedule-B. It is recommended to considered difference of provision of schedule-B and actual work done as positive change of Scope	Committee agreed to consider a Positive change of scope as recommended by IE.

Structures

Widening + Repaire & Strengthing	Nos of Structure	Nos of Structure		
a Pipe Culvert	5	8	As per note given in Schedule-B which states The Proposed span arrangement shown above are tentative, concessionaire should conduct survey and investigation to assess the accurate hydrology of proposed site of structure and design the span arrangement of Bridge/Culverts suiting to the site in consultation with IE. Any change in span arrangement shall not be treated as change of scope of work. Similarly as per clause 3.0 of Schedule-B which state Any additional structures requiring reconstruction and new construction, strengthening or widening during entire concession period will be the responsibility of the concessionaire for which no compensation will be paid. It clearly reveals that concessionaire has completed more nos of structures as specified in schedule-B. No change of scope shall be considered as per above provision in schedule-B for structures. Hence no change of scope is required	Committee agreed with the recommendation of IE. Hence n change of scope.
b. Slab / Arch Culvert	13	9		
c. Minor Bridge	3	3		
d. Minor Bridge	0	0		
Reconstruction				
a Pipe Culvert	47	58		
b. Slab / Arch Culvert	29	25		
c. Minor Bridge	7	6		
d. Minor Bridge	0	0		
New Construction				
a Pipe Culvert	9	15		
b. Slab / Arch Culvert	0	0		
c. Minor Bridge	0	0		
d. Minor Bridge	0	0		

In-principle approval under change of scope is recommended for above works as per remarks of last column. Further it has been instructed to Independent Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively.

(Manish Dixit) Project Manager DBL,	(O.P. Sharma) Team Leader Independent Engineer	((Anil Shrivastava) AGM (MDR) MPRDC	(R.K. Jain) DM (Ujjain) MPRDC	(A.L. Suryavanshi) GM (Indore) MPRDC	(Alok Chaturvedi GM (MDR.) MPRDC	(Dr. Arun Paliwal) GM (Finance) MPRDC	(Narendra Kumar) Chief Engineer MPRDC	(A.S. Chendke) Technical Advisor MPRDC

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Annexure 10: Project Photos

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana

30

Neemuch-Jawad-Khoh-Nayagaon

Bamniya – Petlabad - Raipururiya

सावधान
दुर्घटना संभावित
क्षेत्र
कृपया धीरे चलें।

Soyat – Pidawa

SHREM FINANCIAL PRIVATE LIMITED

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hassan – Ramanathapura – Periyapatna in the State of Karnataka on DBFOMT Hybrid Annuity Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hassan – Ramanathapura – Periyapatna in the State of Karnataka on DBFOMT Hybrid Annuity Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Hassan-Periyapatna	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
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www.rukyprojects.com

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This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
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CHAPTER 1. INTRODUCTION

1.1 General

DBL Hasan Periyapatna Tollways Ltd. (herein after referred to as the "Concessionaire") had augmented the existing two lanes road "Hassan Periyapatna section in the State of Karnataka, in accordance with the provisions of Concession Agreement executed with Karnataka Road Development Corporation Limited (herein after referred to as the "KRDCL") on the 16th December 2015, on Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) on Hybrid Annuity Basis.

The project Highway passes through SH21 comprising (i) Hassan (Sakleshpur Jn.) To Arakalgud (Mini Sowdha Jn.) (ii) Arakalgud (Mini Sowdha Jn.) to Ramanathapura (Konanur Jn.) (iii) J. Hosahalli - Periyapatna . Project location map is provided at Figure 1.1.

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL HASSAN PERIYAPATNA TOLLWAYS LIMITED vide agreement dated 26th March 2018.

SHREM FINANCIAL PVT. LTD (SFPL). appointed M/s RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements.

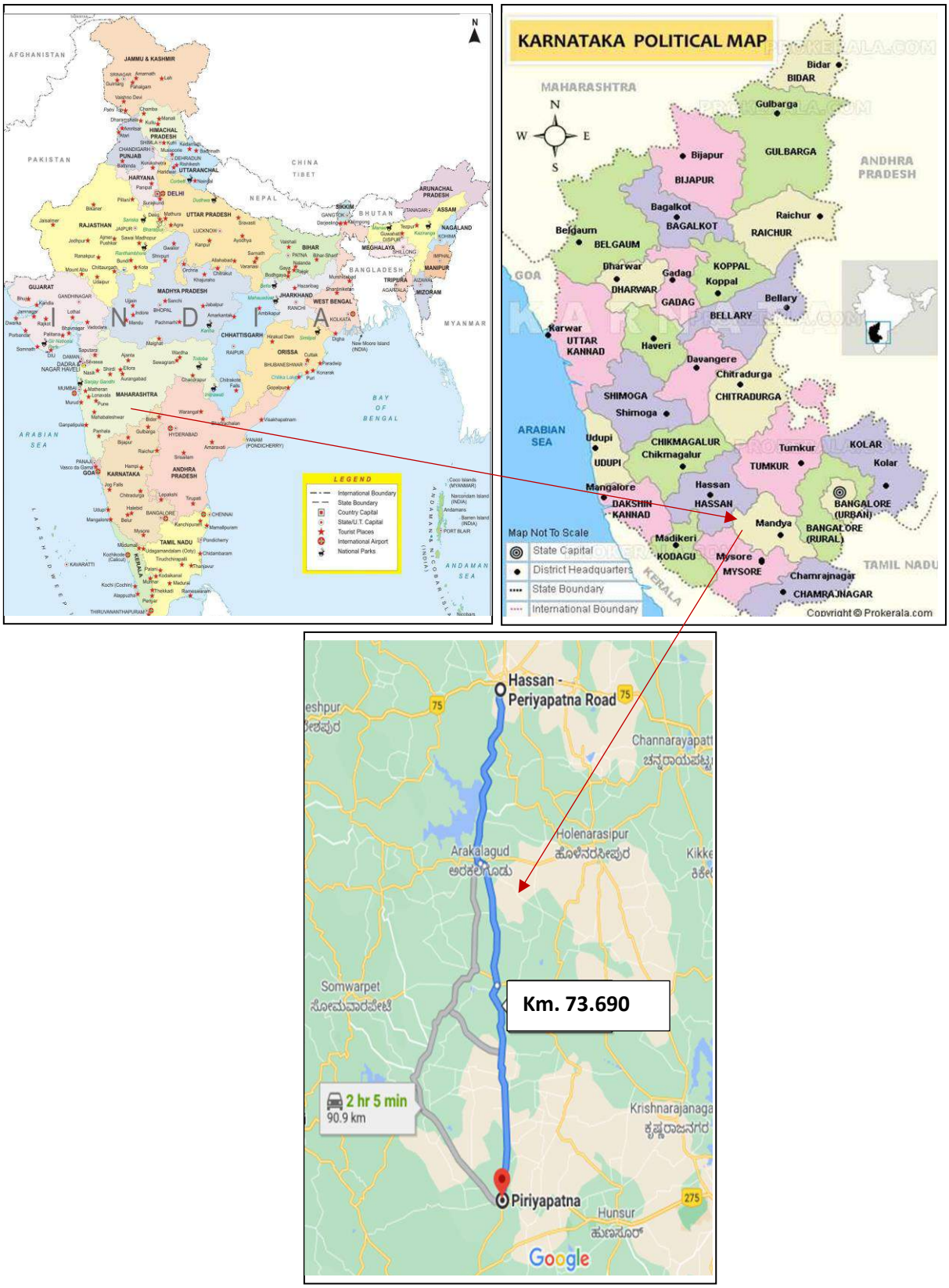

Figure 1.1: Project Location Map

1.2 The Project Data

Table 1.1: Project Data

S.No.	Particulars	Details
1.	Name of the project	Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hassan-Ramnathapura-Periyapatna in the state of Karnataka on DBFOMT annuity basis.
2.	Road Type	State Highway
3.	Name of the Authority	KRDCL
4.	Name of the Concessionaire	DBL Hassan Periyapatna Tollways Limited
5.	Name of the EPC Contractor	Dilip Buildcon Limited
6.	LOA	11.09.2015
7.	Date of agreement	16.12.2015
8.	Date of Supplementary Agreement I	29.09.2016
9.	Date of Supplementary Agreement II	17.04.2018
10.	Design Length as per Schedule I of CA	73.690 Km.
11.	Actual Length Constructed	73.690 Km.
12.	EPC Cost	Rs. 220.41 Cr.
13.	Nature of contract	DBFMOT (Hybrid Annuity)
14.	Toll collected by	Authority
15.	Concession Period	10 years from Appointed Date
16.	Appointed date	29.09.2016
17.	Concision End Date	28.09.2026
18.	Construction Period	730 Days from Appointed Date
19.	Schedule Completion Date	28.09.2018
20.	Date of issuance of Provisional Certificate (Commercial Operation Date)	28.02.2018
21.	Bonus on early completion	Applicable as per Cl,28.1 of CA
22.	Total Annuity Amount	As per 27.1 of CA
23.	Total Number of Annuity payments received as on Jan 2021	16
24.	First Annuity Date	29.03.2019
25.	Forth coming Annuity No.	05

1.3 Scope of Ruky Projects Private Limited:

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. STATUS OF WORK AFTER PCOD

2.1 General

In accordance with Clause 14.3 of Concession Agreement, Provisional certificate was issued on 28th February, 2018 (PCOD) for completed length of 71.940Km out of a total length of 73.690 Km.

2.2 Punch List

A Punch list is a list of tasks and items that need to be completed in specified time, before a construction project can be considered finished. Accordingly, two punch lists were given along with Provisional Certificate. Punch list-1, balance works pending due to reasons attributable to authority. Punch List-II, works delayed attributable to concessionaire are included in this list shall be completed within 90 days from the issuance of Provisional certificate.

Table 2.1: Punch List-I

a. Punch List for Provisional completion sections for the Reasons attributed to Authority)

S.No.	Description	Location	Length/Number (Km)	Present Status as per our Site Inspection
1		Link-54A	15 Locations	Link 54-A
		3+700		Bus shelter and Kerb work not completed only Bus bay work completed
		17+300		Bus bay and shelter works completed but kerb work not completed
		17+650		Total work not completed (Descoped Ref Letter No.1884 Satra & 766 KRDCL)
		18+440		Total work not completed (Descoped Ref Letter No.1884 Satra & 766 KRDCL)
		18+540		Bus bay & shelter works completed but kerb work not completed
	Bus Bay with shelter	25+370		Total work completed
		25+500		Total work completed
		Link-54B		Link-54B
		5+830		Total work completed
		5+860		Total work completed
		7+100		Total work completed
		7+200		Bus Bay and shelter work completed but kekrb work not completed
		12+400		Total work completed
		14+800		Bus shelter work not completed but bus bay and kerb work completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		Link-54C		Link-54C
		7+950		Bus shelter completed but sheeting work not completed. But bay and kerb work not completed (Descoped Ref Letter No.1884 Satra & 766 KRDCL)
		8+000		Bus shelter completed but sheeting work not completed. But bay and kerb work not completed (DE scoped Ref Letter No.1884 Satra & 766 KRDCL)

S.No.	Description	Location	Length/Number (Km)	Present Status as per our Site Inspection
		Link-54A	10 Locations	
		2+538		Protective works completed
		3+184		Protective works completed
		3+640		Slope protection work not completed at RHS (Descoped Ref Letter N.1884 Satra & 766 KRDCL)
		4+124		Protective works completed
2	Protective works for culverts	5+926		Floor apron work not completed
		6+390		Protective works completed
		6+474		Protective works completed
		6+867		Protective works completed
		8+579		Protective works completed
		24+645		Floor apron work not completed(Descoped Ref Letter NO.1884 Satra & KRDCL)
3	RCC Drain/Kerb and Footpath	Link-54B		Link-54B
		Km.3+711 to Km.3+749		Completed
		Km.10+890 to Km.10+929, Km.10+939 to 10+944, Km.10+994 to Km.11+004		1200 Mtrs Footpath work not completed at BHS
4	Earthen Drain	Lini-54A-14.9Km on LHS & 14.8 Km on RHS	46.4 Kms	Completed
		Link 54B-2.8 km on LHD & 1.0 Km on RHS		Completed
		Link-54C -07Km on LHS & 05 Km on RHS		Completed

b. Punch list for Non-Provisional Completion Sections (for the reasons Attributed to Authority)

S.No.	Description	Location	Length/Number (Km)	Present Status as per our Site Inspection
1	Main Carriageway works as per design and drawings	From Km.1+120 to Km.2+300 (Link 54A)		Total work completed
2	Toll Plaza	Link 54A		RHS-3 Lane completed
				structure of Admin, Residential and medical Building completed
				Balance works: LHS:3 Lane PQC
				1. Kerb
				2. Compound wall
				3. Canopy
				4. High Mast lighting pole 30 m height
				5. Balance sign boards
				6. Parking area
				7. Landscaping & Exist and Entry Roads
				8. Toll Booth Electrical WIMS
				9. Miscellaneous items
3	Toll Plaza	Link 54B	11+700	1. LHS-3 Lane completed
				2. RHS-3 Lane Completed
				3. Structure of Admin Residential & Medical Building completed
				4. Canopy Completed
				Balance works:
				1. Kerb
				2. Compound wall
				3. High Mast lighting pole 30 m height
				4. Balance sign boards

				5. Parking area
				6. Landscaping & Exist and Entry Roads
				7. Toll Booth Electrical WIMS
				8. Miscellaneous items
4	Toll Plaza	Link 54C	16+520	1. LHS-3 Lane completed
				2. RHS-3 Lane Completed
				3. Structure of Admin Residential & Medical Building completed
				4. Canopy Completed
				Balance works:
				1. Kerb
				2. Compound wall
				3. High Mast lighting pole 30 m height
				4. Balance sign boards
				5. Parking area
				6. Landscaping & Exist and Entry Roads
				7. Toll Booth Electrical WIMS
				8. Miscellaneous items
5	Boundary Stones	Link 54-A	1+120 to 29+500(BHS)	Not completed
		Link 54-B	0+000 to 17+048(BHS)	Not completed
		Link 54-C	0+000 to 28+274(BHS)	Not completed

Punch List –II, items to be started or in progress shall be completed within 90 days from the issuance of Provisional certificate. The details are given in the following table.

c. Punch list for Provisional completion section-II (For the Reasons Attributed to the Concessionaire)

Punch List-2

S.No.	Description	Location	Length/Number (Km)	Present Status as per our Site Inspection
		2.628 Km in Link 54 A, B & C	1.29 Kms Kerb and 5.69 Kms Footpath (Descoped 1.887(Kms Footpath Ref. Letter No.1884 Satra & 766KRDCL)	
1	Providing Kerb/Footpath	Link 54-A - 0.714 Km		Link 54A -1640 mts footpath work not completed
		Link 54-B - 1.714 Km		Link 54B-1292 Mts Kerb work not completed, 4056 mts footpath work not completed
		Link 54-C - 0.2 Km		Link54-C-Total work completed
2	Floor Protective work at Pipe/Box culverts	Link-54B	7 Locations	Link 54B
		00+920		Pipe culvert protective work completed
		09+597		Box culvert Protective work completed
		12+033		Pipe culvert protective work completed
		14+228		Pipe culvert protective work completed
		14+730		Pipe culvert protective work completed
		15+534		Pipe culvert protective work completed
		16+070		Pipe culvert protective work completed
3	Silt Fencing structures	Link 54A	16Locations	Link 54A
		15+450		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		26+100		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		Link-54B		Link 54B
		0+900		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		3+220BHS		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		4+300		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		Link 54C		Link 54C
		2+700		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)

S.No.	Description	Location	Length/Number (Km)	Present Status as per our Site Inspection
		6+050		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		7+700		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		9+100		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		10+700		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		18+050		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		18+150		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
		20+400BHS		Not completed (De scoped Ref Letter No.1884 Satra & 766 KRDCL)
4	Bus shelters	Link 54A	11 Locations	Link 54A
		3+300		3+300 Total work completed
		21+420		21+420 Total work completed
		21+440		21+440 Total work completed
		Link 54 B		Link54B
		12+500		12+500 Total work completed
		14+400		14+400 Total work completed
		Link 54C		Link 54C
		9+500		9+500 Total work completed
		9+760		9+760 Total work completed
		18+300		18+300 Total work completed
		18+420		18+420 Total work completed
		25+280		25+280 Total work completed
		25+380		25+380 Total work completed
5	Energising Street Lights	Link 54A - 8 villages	As per design - 535 Nos	Link 54A - 141 Nos completed out of 189 Nos
		Link 54B - 7 Villages		Link 54B - 112 Nos completed out of 144 Nos
		Link 54C-12 Villages		Link 54C - 186 completed out of 188 Nos
				Total street lights 439 Nos completed out of 535 Nos in Link 54A,54B, & 54C (Ref Letter No.DBL/SH21/HAS-PTA/WCO-3/2016-17/459 dated 23rd June 2017)

CHAPTER 3. PROJECT DESCRIPTION & TECHNICAL DETAILS

3.1 Salient Features of the Project:

The salient features described in the following table to be developed as per schedule I of CA including Change of scope.

Table 3.1: Salient Features

S. No.	Particulars	As per CA	As per COS*	As per Site
1	Total Length of 2 Lane (Flexible)	73.690 Kms.	-2.610 Kms.	71.080 Kms.
2	Total Length of 4 Lane (Flexible)	--	2.610 Kms.	2.610 Kms.
3	Toll Plaza	3 Nos.	--	3 Nos.
4	Bus Bays	24 Nos	- 4 Nos.	24 Nos
5	Bus Shelters	28 Nos.	-3 Nos.	21 **Nos
6	Truck Lay Bays	Nil	--	Nil
7	Major Junction	5 Nos.	--	5 Nos.
8	Minor Junctions	57 Nos.	--	57 Nos.
9	Total Major Bridges	1 Nos.	--	1 Nos.
10	Total Minor Bridges	13 Nos.	--	13 Nos.
11	Total Pipe Culverts	134 Nos.	--	*139 Nos.
12	Total Box/ Slab Culverts	52 Nos.	--	*53 Nos.

* Minor bridges, HPC and Box/Slab extra are constructed as per site requirement.
**2 Bus shelters were descoped and one yet to be constructed.

3.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

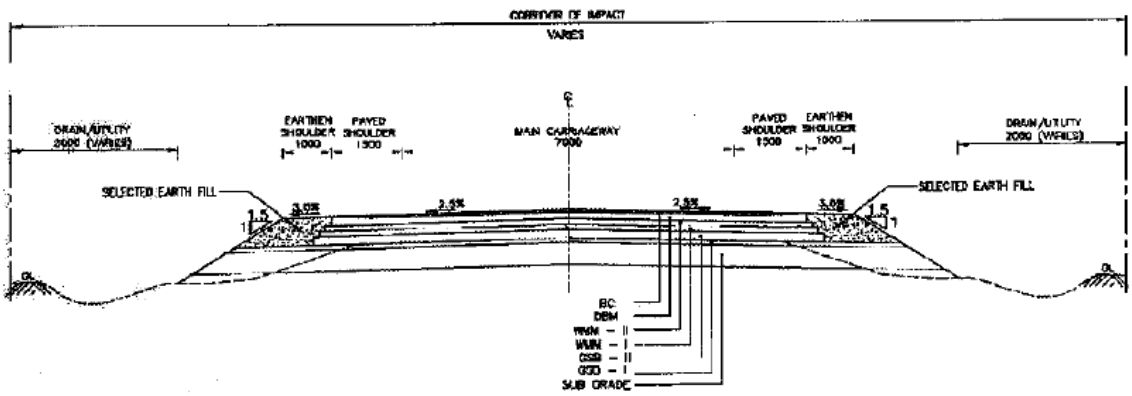

Figure 3.1: (TCS A) of Schedule of CA – Rural Cross Section with Paved Shoulder

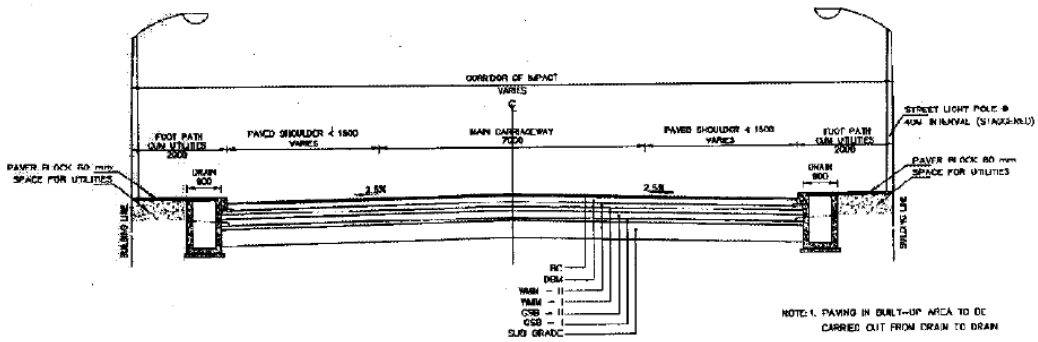

Figure 3.2: ((TCS B) of Schedule of CA - 2 LANE Carriageway With Paved Shoulder In-built up Area

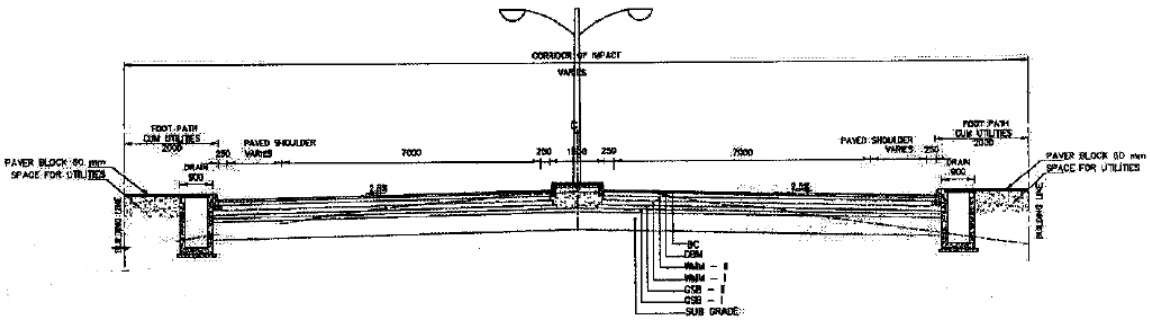

Figure 3.3: (TCS D) of Schedule of CA - 4 Lane Divided Carriageway in urban Area

TCS Schedule is provided below.

Table 3.2: TCS Schedule

Chainage (Km.)		Length (Kms.)	Type of TCS
From	To		
Hassan Arakalgud			
1+120	1+400	280	A
1+400	1+860	460	B
1+860	4+830	2970	A
4+830	5+650	820	B
5+650	7+610	1960	A
7+610	8+200	590	B
8+200	14+200	6000	A
14+200	14+800	600	B
14+800	22+330	7530	A
22+330	22+500	170	B
22+500	23+200	700	D
23+200	24+800	1600	A
24+800	25+150	350	B

Chainage (Km.)		Length (Kms.)	Type of TCS
From	To		
25+150	26+570	1420	A
26+570	26+900	330	B
26+900	28+330	1430	A
28+330	29+488	1158	B
Arakalgud Ramanathaputa			
0+000	0+158	158	A
0+158	0+220	62	B
0+220	0+750	530	D
0+750	1+100	350	A
1+100	1+400	300	B
1+400	3+710	2310	A
3+710	4+085	375	B
4+085	7+270	3185	A
7+270	8+650	1380	D
8+650	10+570	1920	A
10+570	11+170	600	B
11+170	12+590	1420	A
12+590	12+800	210	B
12+800	16+400	3600	A
16+400	17+048	648	B
Ramanathapura Periypatna			
0+000	3+600	3600	A
3+600	3+900	300	B
3+900	5+120	1220	A
5+120	5+270	150	B
5+270	6+850	1580	A
6+850	7+550	700	B
7+550	10+120	2570	A
10+120	10+550	430	B
10+550	12+540	1990	A
12+540	13+700	1160	B
13+700	15+430	1730	A
15+430	15+950	520	B
15+950	17+300	1350	A
17+300	17+450	150	B
17+450	19+900	2450	A
19+900	20+050	150	B
20+050	21+100	1050	A
21+100	21+350	250	B
21+350	22+100	750	A
22+100	22+700	600	B
22+700	24+050	1350	A

Chainage (Km.)		Length (Kms.)	Type of TCS
From	To		
24+050	24+300	250	B
24+300	25+050	750	A
25+050	25+950	900	B
25+950	27+900	1950	A
27+900	28+274	374	B

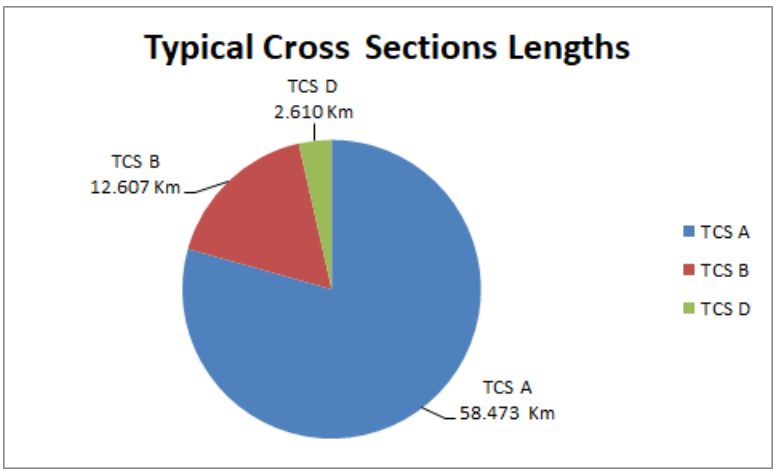

Figure 3.4: Pictorial Diagram of TCS Lengths.

3.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, side drains are constructed along the main carriageway on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

3.4 Service Roads

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

3.5 Bypass/Realignment

There are two realignments proposed on the project road as per provisions of Schedule B of CA are given below.

Table 3.3: List of Realignments

S. No.	From (Km.)	To (Km.)	Length in m.
Link 54A Hassan to Arkalgud			
1	8+250	8+450	200
2	23+400	23+850	450

3.6 Intersections

As per provisions of Schedule B of CA, 5 Major Junctions and 56 Minor Junctions are provided. Details are given below.

Table 3.4: List of Junctions

S. No.	CHAINAGE (Km.)	SIDE	MAJOR/ MINOR
LINK 54A HASSAN ARKALGUD			
1	1+120	BOTH	Major
2	4+045	RHS	Minor
3	4+225	LHS	Minor
4	4+690	LHS	Minor
5	4+950	RHS	Major
6	5+560	BOTH	Minor
7	5+755	LHS	Minor
8	6+400	RHS	Minor
9	6+560	LHS	Minor
10	6+710	LHS	Minor
11	7+085	RHS	Minor
12	7+630	LHS	Minor
13	8+250	LHS	Minor
14	9+840	RHS	Minor
15	11+940	LHS	Minor
16	14+585	LHS	Minor
17	15+150	RHS	Minor
18	16+240	RHS	Minor
19	17+720	LHS	Minor
20	19+255	LHS	Minor
21	20+245	RHS	Minor
22	20+350	RHS	Minor
23	21+715	RHS	Minor
24	22+190	BOTH	Minor
25	22+250	LHS	Minor
26	23+680	LHS	Minor
27	26+680	LHS	Minor
28	27+960	RHS	Minor
29	28+380	RHS	Minor
30	29+488	BOTH	Major
LINK 54B ARKALGUD RAMANATHAPURA			
1	0+780	RHS	Minor
2	2+785	RHS	Minor
3	2+810	LHS	Minor

S. No.	CHAINAGE (Km.)	SIDE	MAJOR/ MINOR
4	5+070	RHS	Minor
5	7+405	RHS	Minor
6	8+615	BOTH	Minor
7	9+000	LHS	Minor
8	9+650	LHS	Minor
9	10+560	LHS	Minor
10	12+925	RHS	Minor
11	14+330	LHS	Minor
12	14+775	RHS	Minor
13	15+515	LHS	Minor
LINK 54C RAMANATHAPURA PERIYAPATNA			
1	5+210	BOTH	Minor
2	6+885	LHS	Minor
3	7+025	RHS	Minor
4	9+360	RHS	Minor
5	8+175	LHS	Minor
6	10+370	RHS	Minor
7	11+750	BOTH	Minor
8	12+955	BOTH	Major
9	13+395	LHS	Minor
10	15+015	RHS	Minor
11	16+405	RHS	Minor
12	18+100	LHS	Minor
13	19+990	RHS	Minor
14	20+050	LHS	Minor
15	22+385	BOTH	Minor
16	27+950	LHS	Minor
17	25+350	RHS	Minor
18	25+180	LHS	Minor
19	28+274	BOTH	Major

3.7 Grade Separated Structures and underpasses

No Grade Separated Structures and underpasses are proposed as per provisions of Schedule B of CA.

3.8 Road Over Bridge (ROB)

No ROB is proposed in the project road as per provisions of Schedule B of CA.

3.9 Carriageway Details

Table 3.5: Summary of Carriageway Details

`	Description	Flexible (Km.)	Rigid (Km.)	Remarks
1	Total Length of 2 lane (Flexible)	71.080 Kms.		
2	Total Length 4 lane	2.610 Kms.		
3	Total Length of the Project	73.690 Kms.		
4	TYPE OF ALIGNMENT			
	New Alignment			
	Realignment	0.650 Kms.		Km.8+250-Km.8+450 & Km.23+400-Km.23+850 in Link 54A Hasan to Arkalguda
S No.	**Description**	**Flexible (km)**	**Rigid (km)**	**Remarks**
	Strengthening	---	---	
	Reconstruction	73.040 Km.	---	
	Total Length of the Project	73.690 Km.	---	

3.10 Summary of Bridges and Culverts:

Table 3.6: Summary of Structures as per Schedule B of CA

S.No.	Description	Count
1	Major Bridges	1 No.
2	Minor Bridges	13 Nos.
3	Hume Pipe Culverts	134 Nos.
4	Slab Culverts	52 Nos.

3.11 Toll Plazas

Table 3.7: Summary of Toll Plazas:

S.No.	Section NO /Link	Proposed Chainage
1	I/54A	Km 17+100
2	II/54B	Km 11+700
3	III/54C	Km 16+520

- There are three toll Plazas on the project road at Link-54A, Link-54B & Link-54C.
- Toll Plaza 1 at Link-54A comprises of 4 lanes.
- Only one lane in each direction is operational and the second lane is used as bike lane.
- Toll Plaza 2, which is at Link-54B, comprises of four lanes.
- Only one lane in each direction is operational and the third lane is used as bike lane.
- Toll Plaza 3, which is at Link-54C, comprises of four lanes.
- Only one lane in each direction is operational and the third lane is used as bike lane.
- Toll plazas at 54B and 54 C are under construction. Toll plaza at 54 A not constructed.

3.12 Bus/Bay shelters:

As per provisions of Schedule C of CA, bus bays/shelters are provided at 28 locations. Details are provided below.

Table 3.8: List of Bus Bay with shelters

S.No.	Chainage (km.)	Side	TYPE
LINK 54A HASSAN ARKALGUD			
1	3+300	LHS	Bus Bay with Shelter
2	3+700	RHS	Bus Bay with Shelter
3	11+840	LHS	Bus Shelter
4	11+925	RHS	Bus Shelter
5	17+300	LHS	Bus Bay with Shelter
6	17+650	RHS	Bus Bay with Shelter
7	18+450	LHS	Bus Bay with Shelter
8	18+530	RHS	Bus Bay with Shelter
9	21+380	RHS	Bus Bay with Shelter
10	21+480	LHS	Bus Bay with Shelter
11	25+360	RHS	Bus Bay with Shelter
12	25+251	LHS	Bus Bay with Shelter
LINK 54B ARKALGUD RAMANATHAPURA			
1	5+820	RHS	Bus Bay with Shelter
2	5+870	LHS	Bus Bay with Shelter
3	7+100	RHS	Bus Bay with Shelter
4	7+200	LHS	Bus Bay with Shelter
5	12+400	LHS	Bus Bay with Shelter
6	12+500	RHS	Bus Bay with Shelter
7	14+380	RHS	Bus Bay with Shelter
8	14+800	LHS	Bus Bay with Shelter
LINK 54C RAMANATHAPURA PERIYAPATNA			
1	7+950	RHS	Bus Bay with Shelter
2	8+000	LHS	Bus Bay with Shelter
3	9+600	LHS	Bus Bay with Shelter
4	9+750	RHS	Bus Bay with Shelter
5	18+300	LHS	Bus Bay with Shelter
6	18+400	RHS	Bus Bay with Shelter
7	25+280	LHS	Bus Shelter
8	25+380	RHS	Bus Shelter

3.13 Other Project Facilities Provided as per Schedule C of CA

- Roadside furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

Km. 1+120 Link-A

Km. 27+597 of Link-C

Km. 7+800 Link-B Bus Bays

Figure 3.5 Representative Photographs of Existing Road Features

CHAPTER 4. ROAD INVENTORY & PAVEMENT CONDITION

4.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

4.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are given below at the end of the Chapter.

Table 4.1: Road Inventory

S. No.	Features	Remarks
1.	Terrain	Plain Terrain
2.	Land Use	Mostly Agriculture
3.	Earthen shoulder	1 m to 1.5 m Width on site
4.	Junctions	62 No.
5.	Toll Plaza	03 Nos.
6.	Sign boards	Sign boards are provided as per requirement
7.	Road Markings	Lane markings are provided as per requirement
8.	Street Lighting	Highway lighting provided as per requirement

4.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 4.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

4.4 Pavement Condition Survey methodology

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP 19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 4.3: Pavement condition summary

From (Km.)	To (Km.)	Length (kms.)	Condition
0+000	73+430	73.430	Good

Km. 7+800 Link-B

Km. 17+040 Link-B

Km. 11+400 Link-C

Km. 11+600 Link-C

Figure 4.1: Representative Photographs of Pavement Condition

CHAPTER 5. INVENTORY AND CONDITION OF STRUCTURES

5.1 General Assessment and Condition of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guidelines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

5.2 Inventory of Structures

The details of the structures along this project road.

Table 5.1: List of Structures

S.No.	Type of Structure	Numbers
1	Major bridges	1 Nos.
2	Minor Bridge	13 Nos.
3	Pipe culverts	139 Nos.
4	Slab/Box Culverts	53 Nos.

For major bridge the superstructure is of PSC T beam and RCC T beam supported on RCC circular type piers and wall type abutments resting on open/pile foundations. For some minor bridges the superstructure is RCC solid slab and the substructures are of RCC/PCC conventional wall type abutment and pier resting on open foundations. Also, there are some RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

5.3 Details of Major Bridges

There details of Major bridge along the project stretch is given below. The total length of the bridge is 140.0m with 2 spans of 22.0m and 3 spans of 32.0m. The superstructure is of PSC T beam and RCC T beam. The substructure is of RCC Circular type piers and wall type abutments resting on Open/pile foundations. Elastomeric/Neoprene bearings are used. Expansion joints are of Strip seal type and RCC Crash barrier has been provided.

Table 5.2: List of Major Bridges

S.No.	Chainage (Km)	Span	Total Length of Bridge (m)
1	23+611	2x22+3x32	140.0

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Figure 5.1 Overall view of the Major Bridge at Km 23+611

5.4 Details of Minor Bridges

The details of minor bridges in the project stretch are listed below. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC/RCC conventional wall type abutment and pier resting on open foundations. Expansion joints are buried type and bearings are tar paper and neoprene bearings. RCC crash barriers are provided on all structures.

Table 5.3: Inventory of Minor Bridges

S. No.	Chainage	Span	Total Length of Bridge (m)	Description
Hassan-Arakalgud				
1	15+358	1x8.5	8.5	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
2	22+251	1x20.2	20.2	MNB has PSC T Beam superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
3	24+808	1x6.0	6.0	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
Arakalgud-Ramanathapura				
1	9+089	1x9.3	9.3	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
2	13+726	1x9.0	9.0	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
3	14+261	1x6.6	6.6	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.

S. No.	Chainage	Span	Total Length of Bridge (m)	Description
J. Hosahalli-Piriyapatna				
1	0+942	2x4.5	9	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
2	5+556	1x9.1	9.1	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
3	7+312	1x9.2	9.2	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
4	9+535	1x8.7	8.7	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
5	12+000	3x3.0	9.0	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
6	20+262	4x3.0	12.0	It has RCC Box structure. It has RCC crash barrier, bituminous wearing coat.
7	27+597	2x10.1	20.2	MNB has RCC solid slab superstructure supported on conventional PCC/RCC wall type piers and abutments resting on open foundations. Buried type expansion joints.

Km. 9+089 link-B

Km. 0+942 Link-C

Figure 5.2: Representative photographs of Minor bridges

5.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

5.5.1. General description of the Slab/Box Culverts

There are 53 Nos. of slab / Box culverts in the project stretch. The details of the culverts are as given below.

Table 5.4 List of Slab/Box Culverts

Sl. No.	Chainage	Span (m)	Vent Size (m)
Hassan-Arakalgud road			
1	5+926	1x2	1.40
2	7+922	1x2	1.9
3	13+804	1x3	3.0
4	14+464	1x2	2
5	14+912	1x2	2
6	14+963	1x2	2
7	15+691	1x1.5	1.5
8	21+288	1x2	2
9	22+078	1x2	2
10	23+975	1x3	2.1
11	24+665	1x2	1.2
12	24+941	1x2	1.2
13	27+492	1x2	1.5
14	28+200	1x2	1.8
15	28+819	1x2	1.8
16	28+950	1x2	1.8
17	29+045	1x2	1.8
Arakalgud-Ramanathapura road			
1	0+215	1x1.5	1.5
2	1+250	1x1.5	1.5
3	1+466	1x1.5	1.5
4	2+861	1x1.5	1.5
5	3+570	1x1.5	1.5
6	4+160	1x1.5	1.5
7	5+175	1x1.5	1.5
8	9+437	1x1.8	1.2
9	9+601	1x1.5	1.5
10	9+634	1x3.8	1.0
11	10+578	1x1.5	1.5
12	11+598	1x1.5	1.5
13	12+829	1x1.5	1.5
14	14+568	1x2.3	2.3
15	15+210	1x1.5	1.5
16	16+398	1x1.5	1.5
J. Hosahalli-Piriyapatna Road			
1	0+416	1x1.5	1.5
2	3+538	1x1.5	1.5

Sl. No.	Chainage	Span (m)	Vent Size (m)
3	5+053	1x1.5	1.5
4	5+205	1x1.5	1.5
5	5+217	1x0.7	0.8
6	5+565	1x2	2
7	6+602	1x5.2	2
8	7+312	1x6	2.1
9	7+588	1x1.5	2.2
10	8+344	1x1.8	2
11	8+810	1x1.5	1.2
12	9+715	1x1.5	1.5
13	10+211	1x1.5	1.5
14	11+146	1x1.5	1.5
15	11+329	1x1.5	1.5
16	11+623	1x1.5	1.5
17	12+160	1x1.5	1.5
18	12+347	1x1.5	1.5
19	23+911	1x1.5	2.1
20	26+557	1x0.9	1.2

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 28+950 Link-A

Km. 2+861 Link-B

Km. 12+829 Link B **Km. 5+217 Link-C**

Figure 5.3: Representative photographs of Slab culverts

5.5.2. General description of the Pipe Culverts

The details of pipe culverts in the project stretch are listed below.

Table 5.5 List of Pipe Culverts

S.No.	Chainage	Span	S.No.	Chainage	Span	S.No.	Chainage	Span
Hassan-Arakalgud road			**Arakalgud-Ramanathapura road**			**J. Hosahalli-Piriyapatna road**		
1	1+210	1x1.2	1	0+750	1x1.2	1	0+011	3x1.2
2	2+538	1x1.2	2	0+920	2x0.9	2	0+321	1x0.9
3	3+184	1x1.2	3	1+525	1x0.6	3	0+893	1x1.2
4	3+640	1x1.2	4	1+893	2x0.9	4	0+984	1x1.2
5	4+124	1x1.2	5	2+449	1x0.6	5	2+072	1x1.2
6	6+391	1x0.9	6	2+638	1x0.6	6	2+631	1x1.2
7	6+475	1x0.9	7	3+258	1x1.2	7	3+242	3x0.9
8	6+869	1x0.9	8	4+414	1x0.6	8	4+092	4x0.9
9	7+149	1x0.9	9	4+335	1x0.9	9	4+492	1x0.45
10	7+249	1x0.9	10	4+850	1x1.2	10	4+840	2x0.9
11	7+612	1x1.2	11	5+700	3x0.9	11	6+720	1x1.2
12	8+582	1x1.2	12	6+241	1x1.2	12	8+232	2x1.2
13	8+881	1x1.2	13	6+490	1x1.2	13	9+352	2x1.2
14	9+164	1x0.9	14	7+540	1x1.2	14	9+370	1x1.2
15	9+879	1x1.2	15	8+147	1x1.2	15	10+870	1x1.2
16	10+636	1x1.2	16	9+823	2x1.2	16	11+047	4x1.2
17	10+781	1x1.2	17	10+093	1x1.2	17	11+456	1x1.2
18	10+866	1x1.2	18	10+266	1x0.9	18	12+805	1x1.2
19	11+130	1x1.2	19	10+478	1x0.9	19	13+036	1x1.2
20	11+800	1x1.2	20	11+053	1x0.9	20	13+380	1x1.2
21	12+145	1x1.2	21	11+395	1x0.9	21	13+952	1x0.9
22	12+260	1x1.2	22	11+563	1x1.2	22	14+763	2x0.9
23	12+362	1x1.2	23	12+033	1x1.2	23	15+520	1x0.9

S.No.	Chainage	Span
Hassan-Arakalgud road		
24	12+446	1x1.2
25	12+789	1x1.2
26	13+121	1x0.9
27	13+269	2x0.9
28	13+333	1x0.9
29	13+496	1x1.2
30	14+121	1x0.9
31	15+476	1x1.2
32	16+198	1x0.9
33	16+523	1x0.9
34	16+870	1x1.2
35	17+213	1x1.2
36	17+694	1x1.2
37	17+859	1x1.2
38	17+900	1x1.2
39	18+476	1x1.2
40	18+660	1x1.2
41	18+750	1x1.2
42	19+228	1x1.2
43	19+370	1x1.2
44	19+769	1x1.2
45	20+081	1x1.2
46	20+586	1x1.2
47	20+712	1x1.2
48	23+229	2x1.2
49	23+790	1x1.2
50	24+058	1x1.2
51	24+604	1x1.2
52	25+100	1x1.2
53	25+156	1x1.2
54	25+499	1x1.2
55	25+870	1x1.2
56	26+334	1x1.2
57	26+968	1x1.2
58	27+798	1x1.2

S.No.	Chainage	Span
Arakalgud-Ramanathapura road		
24	13+234	1x1.2
25	13+828	1x1.2
26	14+243	2x1.2
27	14+352	1x0.6
28	14+591	1x1.2
29	14+646	1x1.2
30	14+736	1x0.3
31	15+041	1x1.2
32	15+281	1x0.9
33	15+533	1x1.2
34	16+071	1x1.2
35	16+579	1x1.2

S.No.	Chainage	Span
J. Hosahalli-Piriyapatna road		
24	15+871	1x1.2
25	15+945	1x0.9
26	16+585	1x0.9
27	18+089	3x1.2
28	18+600	3x1.2
29	19+127	1x0.9
30	19+877	1x1.2
31	20+077	1x1.2
32	20+525	1x0.6
33	20+716	1x1.2
34	20+867	1x0.9
35	21+026	1x1.2
36	21+916	4x0.9
37	23+150	1x1.2
38	24+978	2x1.2
39	25+691	1x1.2
40	26+700	1x0.45
41	27+352	1x1.2
42	27+714	1x0.45
43	27+835	1x1.2
44	28+022	1x0.9
45	28+122	1x1.2
46	28+158	3x0.9

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 2+072 link-C **Km. 11+047 Link-C**

Figure 5.4: Representative photographs of Pipe Culverts

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 6. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

6.1 General

Review of Pavement design report, providing insights on design life of pavement, crust thickness, history of overlays over the existing pavement etc., Based on pavement condition and CA provisions recommendation for the upcoming renewal cycles.

6.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

6.2.1. Pavement design crust thickness

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

The project road has been divided into 3 sections i.e. Link A (from Hassan km. 32+100 to Arkalgud km. 60+400, Link B (from Arkalgud km. 61+475 to Ramanthapura km. 78+025) and Link C (from Hasahalli km. 81+660 to Periyapatna km. 111+840). The design traffic as per traffic during design stage and design traffic as per CA is summarized below.

Table 6.1: Design traffic summary

S. No.	Location	As per traffic surveys		As per Appendix II of schedule B,	
		10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)	10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)
1	Km. 47+930	2.72	5.02	5.13	8.63
2	Km. 72+290	2.38	4.38	3.24	5.53
3	Km. 100+135	1.14	2.11	1.5	2.53

As seen, the actual traffic is less than schedule MSA in Appendix B-II of CA, pavement has been design for 10 MSA and 10% effective CBR, Pavement crust thickness in the pavement design report for flexible pavement is as follows: -

Table 6.2: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	10%
2	Design Life (Years)	10 years for bituminous 15 years for granular
3	Design Traffic (MSA)	10 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	50 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	2000 mm

Pavement crust thickness in the pavement design report for rigid pavement is as follows: -

Table 6.3: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) – (mm)	280
Dry Lean Concrete (DLC) – (mm)	150
Drainage Layer (GSB) - (mm)	200
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	480

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

6.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 10 MSA (up to 2032), whereas the actual traffic is 2.53 to 8.63 MSA. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, as per clause 2.3.7 of Schedule K of CA, periodic renewal shall be carried out as and when required and at least once between 5th or 7th year (from COD) within the concession period, the periodic maintenance activities shall also include profile corrective course overlaid with the periodic renewal of the wearing course of BC 25 mm thickness of the road pavement, the concessionaire may adopt cost effective treatment like asphalt recycling, stone mastic, micro seal etc.

Based on the present available data It is envisaged that existing pavement require overlay (periodic renewal) in the year of 2025. Nevertheless, the pavement shall be maintained to the desired level of performance by carrying out periodical renewals as mentioned in subsequent sections.

6.3.1. Maintenance/ Overlay schedule

Periodic Maintenance shall be carried out as and when required based on the road condition and at least once between 5th and 7th year (from COD) and in the last year of Concession period as a good industry practice. It includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next periodic Renewal Proposed on or before 2025
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction

CHAPTER 7. SAFETY AUDIT OF ROAD

7.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 7.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

7.2 Existing Road Safety Audit

During the site visit, it is observed that all safety items are provided as shown in the following table

Table 7.2: Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs Village sign boards Information Boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		Other Sign Boards Gantry Sign Boards		
2	Road Marking	Studs &Lane marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Fair

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Km. 5+926 Link-A

MBCB & Chevron signs in link-B

Km. 23+000 Link-C

Figure 7.1 Representative photograph of during road safety audit

7.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

CHAPTER 8. TOLL PLAZA & HTMS

8.1 General

There are three toll Plazas on the project road at Link-54A, Link-54B & Link-54C. Toll Plaza 1 at Link-54A comprises of 4 lanes. Only one lane in each direction is operational and the second lane is used as bike lane. Toll Plaza 2, which is at Link-54B, comprises of 4 lanes. Only one lane in each direction is operational and the third lane is used as bike lane. Toll Plaza 3, which is at Link-54C, comprises of 4 lanes. Only one lane in each direction is operational and the third lane is used as bike lane.

8.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 8.1 : List of lanes Equipment at Toll Plaza and Control Room

S No.	Item Description	Qty.
	Lane Equipment	
1	TOLL LANE CONTROLLER	12
2	TOLL COLLECTOR KEYBOARD QWERTY TVS	8
3	AVC SENSORS INCLUDING (TMS & HTMS)	12
4	THERMAL PRINTER	8
5	LANE INCIDENT CAPTURE CAMERA	9
6	TRAFFIC LIGHT (TMS & HTMS)	9
7	OVERHEAD LANE SIGNALS(300 MM DIA)	7
8	USER FARE DISPLAY 2- LINES,12-CHARACTER	9
9	INTERCOM SLAVE UNIT AI PHONES NEM-10/C	12
10	LANE EXIT BARRIER WITH LOOPS & DETECTOR	8
11	BARCODE READER (TMS & HTMS)	8
12	T & G SMART CARD READER SPECTRA/ HID	12
13	MANUAL BOOTH CONTROLLER (TMS & HTMS)	12
14	10 KVA ONLINE UPS WITH 30 MINS BACKUP	2
	Control Room	
15	CABLING/NETWORKING FOR LANE (TMS & HTMS)	2
16	SERVER RACKVALRACKMODUC AB WAN	2
17	TMS SERVER (TMS & HTMS)	2
18	CASHU UP/AUDIT WORKSTATION LENOVO	4
19	POS T & G SMART CARD READERSPECTRA	2
20	THERMAL PRINTER	2
21	6 KVA ONLINE UPS WITH 30 MINS BACKUP	2
22	REL DATABASE MANAGMENT SYSTEM - TMS	2
23	WINDOWS SERVER 2016 R2 STANDARD EDITION	2
24	ANTIVIRUS (TMS & HTMS)	20
25	SEMI AUTOMATIC LANE SOFTWARE	12
26	SEMI AUTOMATIC PLAZA SOFTWARE WITH ADMIN	2
27	INTERCOM MASTER UNIT - 20 CHANNEL (TMS)	2

8.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 8.2 List of Vehicles

S. No.	Vehicle Type	No.
1	Patrol Vehicle	3
2	Ambulance	3

Toll Plaza-Link-B

Toll Plaza Link-C

Toll Plaza Building-Link-B

Figure 8.1 Representative Photograph of Toll Plaza

CHAPTER 9. SCHEDULE OF ANNUITY PAYMENTS

9.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model, which allows the payment of Lumsum amount during construction period based on progress milestones set forth by Authority to Concessionaire and Balance amount in the form of Annuity to the Concessionaire Bi-annually with the Interest during the balance concession period.

In this HAM model, as per Cl. 27.5 Lump sum payment is given in four installments during the construction phase as below.

Installment No	Amount in Rs. (Crores)	% Progress during construction
First	22.193	25
Second	22.193	50
Third	22.193	75
Fourth	22.193	On COD

9.2 Schedule of Annuity Payments

As per 27.2.2, the concessionaire upon achieving COD, Authority agrees to pay Rs. 26.28crores as per schedule –M.

Table 9.1: Schedule of Annuity Payments

S No.	Particulars	Annuity Due date	Payment Paid on
1	1st Annuity	28.03.2019	28-Mar-19
2	2nd Annuity	29.09.2019	6-Feb-20
3	3rd Annuity	28.03.2020	30-Mar-20
4	4th Annuity	29.09.2020	19-Nov-20
5	5th Annuity	28.03.2021	
6	6th Annuity	29.09.2021	
7	7th Annuity	28.03.2022	
8	8th Annuity	29.09.2022	
9	9th Annuity	28.03.2023	
10	10th Annuity	29.09.2023	
11	11th Annuity	28.03.2024	
12	12th Annuity	29.09.2024	
13	13th Annuity	28.03.2025	
14	14th Annuity	29.09.2025	
15	15th Annuity	28.03.2026	
16	16th Annuity	29.09.2026	

CHAPTER 10. OPERATION AND MAINTENANCE

10.1 General

As per Article 17 of CA, the Concessionaire will operate and maintain the Project roads by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines.

10.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

10.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2 carrying out preventive and periodic maintenance of the Project road;
3 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
4 Undertaking major maintenance such as resurfacing of pavements, repairs to structures;
5 Functioning of the lighting system;
6 Functioning of the Patrolling System

7 Functioning of rescue and medical aid services
8 Ambulance as and when required
9 Functioning of the Project Facilities
10 Administrative, Operational and Maintenance Base Camp
11 Truck Lay byes
12 Pickup Bus stops / Bus Bays
13 Protection of the environment and provision of equipment and materials therefor;
14 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
15 Complying with Safety Requirements in accordance with Article 18.

10.4 Operation of Toll Plazas

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the Escrow Account. In case of ETC system, Toll collection is connected with Network system and directly deposited into the Escrow account.

10.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

i. Road maintenance can be carried out in four ways as listed below.
ii. Preventive Maintenance
iii. Routine Maintenance
iv. Periodic Maintenance
v. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road. The details of periodic maintenance schedule are given below.

Table 10.1 Schedule and status of for Periodic Maintenance

Description	Schedule of Major Maintenance	Status of Major Maintenance
Periodic Maintenance	2025	Planned to execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

10.6 Review of Test Reports

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of Aug, 2020. As per Schedule K of CA, if the stretch exceeds 2000mm in a KM shall be rectified. No stretch exceeds the permissible limit.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in Feb 2020. The test report has been verified and found within permissible limits as per IRC 81.

Environmental Quality Monitoring

In Aug 2020, Concessionaire has conducted Ambient air quality test, Noise quality test, Water quality test and soil quality test in accordance with Schedule L. The values are within the permissible limits.

10.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 10.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
	(In crores)	(In crores)			
2020	0.313	0.447		1.776	2.536
2021	0.322	0.461		1.829	2.612
2022	0.332	0.474		1.884	2.690
2023	0.342	0.489		1.940	2.771
2024	0.352	0.503	25.730	1.999	28.584
2025	0.363	0.518	26.440	2.059	29.380
2026	0.374	0.534		2.120	3.028
2027	0.191	0.273		1.083	1.547
Total	**2.589**	**3.699**	**52.170**	**14.690**	**73.148**

CHAPTER 11. REVIEW OF CONCESSION AGREEMENT

11.1 General: Scope of Project (Article 2)

Article 2 provides the scope of work which includes the following.

- Construction of the Project Highway on the Site set forth in schedule B and C and in conformity with the Specifications and Standards (Schedule D) and Schedule L;
- Operation and maintenance of the Project Highway in accordance with the provisions of this Agreement
- Performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental

11.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5.**

11.3 Conditions precedent (Article 4):

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule A
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

11.3.1. Performance Security (Article 9):

- The Concessionaire shall submit the Performance security to the Authority within 120 days from the date of the Agreement,
- The Performance security shall remain in force throughout the Construction period
- Performance Security shall be released on Commercial Operation Date.

11.3.2. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

11.4 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA.

A copy of PCOD attached in the **Annexure-6.**

11.5 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

11.6 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

11.7 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the KRDCL are provided at **Annexure 8**.

11.8 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements.
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials

11.9 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

11.10 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two)

copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

11.11 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

11.12 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

11.13 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

11.14 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

11.15 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 12. INSURANCE

12.1 General

As per clause 32.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Copy of Insurances are attached in the **Annexure-7.**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 12.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period	
			From	To
Civil Engineering Completed Risk	National Insurance Co. Ltd	321300441910001997	27/03/2020	26/03/2021
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/44	08/09/2020	07/09/2021
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Limited	3114203376737300000	18/04/2020	17/04/2021

CHAPTER 13. CONCLUSION

13.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

13.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations, which facilitate effective drainage system along the project road. Shoulder condition is fair.

13.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Vegetation growth is observed in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

13.4 Project Facilities

Three Toll Plazas are constructed one at Link I/54A, Link I/54B & Link I/54C. All are operational. Toll Plaza is operated. Bus bays are in fair condition. Avenue plantation. Highway lighting is provided at toll plaza locations and the same is found functional.

13.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

13.6 Maintenance

A dedicated team is appointed for routine maintenance works and working effectively. Major maintenance (MM) /Periodic maintenance was carried out recently and next MM is scheduled in 2025.

13.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)	
SH-54 Link-A																
1+120	2+120								G		E+P	F	F	CD	F	
2+120	3+120								G		E+P	F	F	ULD	F	
3+120	4+120								G		E+P	F	F	ULD	F	
4+120	5+120								G		E+P	F	F	ULD	F	
5+120	6+120	1							G		E+P	F	F	CD	F	
6+120	7+120								G		E+P	F	F	ULD	F	
7+120	8+120								G		E+P	F	F	CD	F	
8+120	9+120								G		E+P	F	F	ULD	F	
9+120	10+120								G		E+P	F	F	ULD	F	
10+120	11+120								G		E+P	F	F	ULD	F	
11+120	12+120								G		E+P	F	F	ULD	F	
12+120	13+120								G		E+P	F	F	ULD	F	
13+120	14+120								G		E+P	F	F	F	F	
14+120	15+120								G		E+P	F	F	CD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)	
15+120	16+120								G		E+P	F	F	ULD	F	
16+120	17+120								G		E+P	F	F	ULD	F	
17+120	17+120								G		E+P	F	F	ULD	F	
17+120	18+120								G		E+P	F	F	ULD	F	
18+120	19+120								G		E+P	F	F	ULD	F	
19+120	20+120								G		E+P	F	F	ULD	F	
20+120	21+120								G		E+P	F	F	ULD	F	
21+120	22+120								G		E+P	F	F	ULD	F	
22+120	23+120								G		E+P	F	F	CD	F	
23+120	24+120								G		E+P	F	F	CD	F	
24+120	25+120								G		E+P	F	F	CD	F	
25+120	26+120								G		E+P	F	F	ULD	F	
26+120	27+120								G		E+P	F	F	CD	F	
27+120	28+120								G		E+P	F	F	ULD	F	
28+120	29+488								G		E+P	F	F	CD	F	
SH-54 Link-B																
0+000	0+525								G		E+P	F	F	CD	F	
0+525	1+525								G		E+P	F	F	CD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)	
1+525	2+525	1							G		E+P	F	F	ULD	F	
2+525	3+525								G		E+P	F	F	ULD	F	
3+525	4+525								G		E+P	F	F	CD	F	
4+525	5+525								G		E+P	F	F	ULD	F	
5+525	6+525								G		E+P	F	F	ULD	F	
6+525	7+525								G		E+P	F	F	CD	F	
7+525	8+525								G		E+P	F	F	CD	F	
8+525	9+525								G		E+P	F	F	ULD	F	
9+525	10+525	1							G		E+P	F	F	ULD	F	
10+525	11+525								G		E+P	F	F	CD	F	
11+525	12+525								G		E+P	F	F	ULD	F	
12+525	13+525								G		E+P	F	F	CD	F	
13+525	14+525								G		E+P	F	F	ULD	F	
14+525	15+525								G		E+P	F	F	ULD	F	
15+525	17+048								G		E+P	F	F	ULD	F	
SH-54 Link-C																
0+000	0+340								G		E+P	F	F	ULD	F	
0+340	1+340								G		E+P	F	F	ULD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)	
1+340	2+340								G		E+P	F	F	ULD	F	
2+340	3+340								G		E+P	F	F	ULD	F	
3+340	4+340								G		E+P	F	F	ULD	F	
4+340	5+340								G		E+P	F	F	ULD	F	
5+340	6+340								G		E+P	F	F	ULD	F	
6+340	7+340								G		E+P	F	F	ULD	F	
7+340	8+340								G		E+P	F	F	ULD	F	
8+340	9+340								G		E+P	F	F	ULD	F	
9+340	10+340								G		E+P	F	F	ULD	F	
10+340	11+340								G		E+P	F	F	CD	F	
11+340	12+340								G		E+P	F	F	ULD	F	
12+340	13+340								G		E+P	F	F	CD	F	
13+340	14+340								G		E+P	F	F	CD	F	
14+340	15+340	1							G		E+P	F	F	ULD	F	
15+340	16+340								G		E+P	F	F	CD	F	
16+340	17+340								G		E+P	F	F	ULD	F	
17+340	18+340								G		E+P	F	F	ULD	F	
18+340	19+340								G		E+P	F	F	ULD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)	
19+340	20+340								G		E+P	F	F	CD	F	
20+340	21+340								G		E+P	F	F	ULD	F	
21+340	22+340								G		E+P	F	F	CD	F	
22+340	23+340								G		E+P	F	F	ULD	F	
23+340	24+340								G		E+P	F	F	CD	F	
24+340	25+340	1							G		E+P	F	F	CD	F	
25+340	26+340								G		E+P	F	F	CD	F	
26+340	27+340	1							G		E+P	F	F	CD	F	
27+340	28+274								G		E+P	F	F	CD	F	

Annexure 2: Condition of Bridges

S. No.	Chainage (Km.)	Type of Structure	Sub structure	Super structure	Crash barrier	Expansion Joint	Approach slabs	Drainage spouts	Approaches	Wearing coat	Toe wall
Hassan-Arakalaguda											
1	15+358	MNBR	Good	Good	Good	Fair	Fair		Fair	Fair	Good
2	22+251	MNBR	Good	Good	Good	Good	Fair		Fair	Fair	Good
3	23+611	MJBR	Good	Good	Good	Fair	Good		Fair	Good	Good
4	24+808	MNBR	Good	Good	Good	Good	Fair		Fair	Good	Good
Arakalaguda-Ramnathpura											
1	9+089	MNBR	Good	Good	Good	Good	Good		Good	Good	Good
2	13+726	MNBR	Good	Good	Good	Fair	Good		Good	Good	Good
3	14+261	MNBR	Good	Good	Good	Fair	Good		Good	Good	Good
J.Hoshalli-Periyapatna											
1	0+942	MNBR	Good	Good	Good	-	Fair		Good	Good	Good
2	7+312	MNBR	Good	Good	Good	Good	Fair		Fair	Good	Good
3	9+535	MNBR	Good	Good	Good	Fair	Good		Good	Good	Good
4	12+000	MNBR	Good	Good	Good	-	Good		Fair	Good	Good
5	20+262	MNBR	Good	Good	Good	-	Fair		Good	Good	Good
6	27+597	MNBR	Good	Good	Good	Good	Fair		Good	Good	Good

Annexure 3: Condition of Box /Slab Culverts

S. No.	Chainage (km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Parapet wall
Hassan-Arakalaguda						
1	5+926	Good	Good	Good	Good	Good
2	7+922	Good	Good	Fair	Good	Fair
3	13+804	Good	Good	Good	Good	Good
4	14+464	Good	Good	Fair	Good	Good
5	14+912	Good	Good	Fair	Fair	Good
6	14+963	Good	Good	Good	Good	Good
7	15+691	Good	Good	Fair	Good	Good
8	21+288	Good	Good	Good	Good	Good
9	22+078	Good	Good	Fair	Good	Good
10	23+975	Good	Good	Good	Good	Good
11	24+665	Good	Good	Fair	Good	Good
12	24+941	Good	Good	Good	Good	Good
13	27+492	Good	Good	Fair	Good	Good
14	28+200	Good	Good	Fair	Fair	Good
15	28+819	Good	Good	Good	Good	Good
16	28+950	Good	Good	Fair	Good	Good
17	29+045	Good	Good	Good	Good	Good
Arakalaguda-Ramanathapura						
1	0+215	Good	Good	Fair	Good	Good
2	1+250	Good	Good	Fair	Good	Good
3	1+466	Good	Good	Fair	Good	Good
4	2+861	Good	Good	Fair	Good	Good
5	3+570	Good	Good	Fair	Good	Good
6	4+160	Good	Good	Good	Good	Good
7	5+175	Good	Good	Good	Good	Good
8	9+437	Good	Good	Fair	Fair	Good
9	9+601	Good	Good	Fair	Fair	Good
10	9+634	Good	Good	Good	Good	Good
11	10+578	Good	Good	Fair	Good	Good
12	11+598	Good	Good	Fair	Fair	Good
13	12+829	Good	Good	Good	Good	Good
14	14+568	Good	Good	Fair	Good	Good
15	15+210	Good	Good	Fair	Fair	Good
16	16+398	Good	Good	Good	Good	Good
J.Hoshalli-Periyapatna						
1	0+416	Good	Good	Fair	Fair	Good
2	3+538	Good	Good	Fair	Fair	Good
3	5+053	Good	Good	Good	Good	Good

S. No.	Chainage (km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Parapet wall
4	5+205	Good	Good	Fair	Good	Good
5	5+217	Good	Good	Fair	Good	Good
6	5+565	Good	Good	Good	Good	Good
7	6+602	Good	Good	Fair	Good	Good
8	7+312	Good	Good	Fair	Fair	Good
9	7+588	Good	Good	Good	Good	Good
10	8+344	Good	Good	Fair	Fair	Good
11	8+810	Good	Good	Fair	Fair	Good
12	9+715	Good	Good	Fair	Fair	Good
13	10+211	Good	Good	Good	Good	Good
14	11+146	Good	Good	Good	Good	Good
15	11+329	Good	Good	Fair	Fair	Good
16	11+623	Good	Good	Fair	Good	Good
17	12+160	Good	Good	Fair	Good	Good
18	12+347	Good	Good	Fair	Fair	Good
19	18+089	Good	Good	Good	Good	Good
20	26+557	Good	Good	Good	Good	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
Hassan-Arakalaguda					
1	1+210	Good	Good	Fair	Good
2	2+538	Good	Good	Fair	Good
3	3+184	Good	Good	Fair	Good
4	3+640	Good	Good	Fair	Good
5	4+124	Good	Good	Fair	Good
6	6+391	Fair	Good	Fair	Good
7	6+475	Good	Good	Fair	Good
8	6+869	Good	Good	Fair	Good
9	7+149	Good	Good	Fair	Good
10	7+249	Good	Good	Fair	Good
11	7+612	Good	Good	Fair	Good
12	8+582	Good	Good	Fair	Good
13	8+881	Good	Good	Fair	Good
14	9+164	Good	Good	Fair	Good
15	9+879	Good	Good	Fair	Good
16	10+636	Good	Good	Fair	Good
17	10+781	Good	Good	Fair	Good
18	10+866	Good	Good	Fair	Good
19	11+130	Good	Good	Fair	Good
20	11+800	Good	Good	Fair	Good
21	12+145	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
22	12+260	Fair	Good	Fair	Good
23	12+362	Good	Good	Fair	Good
24	12+446	Good	Good	Fair	Good
25	12+789	Good	Good	Fair	Good
26	13+121	Good	Good	Fair	Good
27	13+269	Good	Good	Fair	Good
28	13+333	Good	Good	Fair	Good
29	13+496	Good	Good	Fair	Good
30	14+121	Good	Good	Fair	Good
31	15+476	Fair	Good	Fair	Good
32	16+198	Good	Good	Fair	Good
33	16+523	Good	Good	Fair	Good
34	16+870	Good	Good	Fair	Good
35	17+213	Good	Fair	Fair	Good
36	17+694	Good	Good	Fair	Good
37	17+859	Good	Good	Fair	Good
38	17+900	Good	Good	Fair	Good
39	18+476	Fair	Good	Fair	Good
40	18+660	Good	Good	Fair	Good
41	18+750	Good	N/A	Fair	Good
42	19+228	Good	Good	Fair	Good
43	19+370	Good	Good	Fair	Good
44	19+769	Good	Good	Fair	Good
45	20+081	Fair	N/A	Fair	Good
46	20+586	Good	Good	Fair	Good
47	20+712	Good	Good	Fair	Good
48	23+229	Good	Good	Fair	Good
49	23+790	Good	Good	Fair	Good
50	24+058	Good	Good	Fair	Good
51	24+604	Good	Good	Fair	Good
52	25+100	Good	Good	Fair	Good
53	25+156	Good	Good	Fair	Good
54	25+499	Good	Good	Fair	Good
55	25+870	Good	Good	Fair	Good
56	26+334	Good	Good	Fair	Good
57	26+968	Good	Good	Fair	Good
58	27+798	Fair	Good	Fair	Good
Arakalaguda-Ramanathapura					
1	0+750	Good	Good	Fair	Good
2	0+920	Good	Good	Fair	Good
3	1+525	Fair	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
4	1+893	Good	Fair	Fair	Good
5	2+449	Good	Good	Fair	Good
6	2+638	Good	Good	Fair	Good
7	3+258	Good	Good	Fair	Good
8	4+335	Good	Good	Fair	Good
9	4+414	Good	Fair	Fair	Good
10	4+850	Good	Good	Fair	Good
11	5+700	Good	Good	Fair	Good
12	6+241	Good	Good	Fair	Good
13	6+490	Good	Good	Fair	Good
14	7+540	Good	Fair	Fair	Good
15	8+147	Good	Good	Fair	Good
16	9+823	Good	Good	Fair	Good
17	10+093	Good	Good	Fair	Good
18	10+266	Good	Good	Fair	Good
19	10+478	Good	Good	Fair	Good
20	11+053	Good	Good	Fair	Good
21	11+395	Good	Good	Fair	Good
22	11+563	Good	Good	Fair	Good
23	12+033	Good	Good	Fair	Good
24	13+234	Good	Good	Fair	Good
25	13+828	Fair	Good	Fair	Good
26	14+243	Good	Good	Fair	Good
27	14+352	Good	Good	Fair	Good
28	14+591	Good	Fair	Fair	Good
29	14+646	Good	Good	Fair	Good
30	14+736	Good	Good	Fair	Good
31	15+041	Good	Good	Fair	Good
32	15+281	Fair	Good	Fair	Good
33	15+533	Good	Good	Fair	Good
34	16+071	Good	Good	Fair	Good
35	16+579	Good	Fair	Fair	Good
J.Hoshalli-Periyapatna					
1	0+011	Good	Good	Fair	Good
2	0+321	Good	Good	Fair	Good
3	0+893	Good	Good	Fair	Good
4	0+984	Good	Good	Fair	Good
5	2+072	Good	Good	Fair	Good
6	2+631	Good	Good	Fair	Good
7	3+242	Good	Good	Fair	Good
8	4+092	Good	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
9	4+492	Good	Good	Fair	Good
10	4+840	Good	Good	Fair	Good
11	6+720	Good	Good	Fair	Good
12	8+232	Good	Good	Fair	Good
13	9+352	Good	Good	Fair	Good
14	9+370	Good	Good	Fair	Good
15	10+870	Good	Good	Fair	Good
16	11+047	Good	Good	Fair	Good
17	11+456	Good	Good	Fair	Good
18	12+805	Good	Good	Fair	Good
19	13+036	Good	Good	Fair	Good
20	13+380	Good	Good	Fair	Good
21	13+952	Good	Good	Fair	Good
22	14+763	Good	Good	Fair	Good
23	15+520	Good	Good	Fair	Good
24	15+871	Good	Good	Fair	Good
25	15+945	Good	Good	Fair	Good
26	16+585	Good	Good	Fair	Good
27	18+600	Good	Good	Fair	Good
28	19+127	Good	Good	Fair	Good
29	19+877	Good	Good	Fair	Good
30	20+077	Good	Good	Fair	Good
31	20+525	Good	Good	Fair	Good
32	20+716	Fair	Good	Fair	Good
33	20+867	Good	Good	Fair	Good
34	21+026	Good	Good	Fair	Good
35	21+916	Good	Good	Fair	Good
36	23+150	Good	Good	Fair	Good
37	23+911	Good	Good	Fair	Good
38	24+978	Good	Good	Fair	Good
39	25+691	Good	Good	Fair	Good
40	26+700	Good	Good	Fair	Good
41	27+352	Good	Good	Fair	Good
42	27+714	Good	Good	Fair	Good
43	27+835	Good	Good	Fair	Good
44	28+022	Good	Good	Fair	Good
45	28+122	Good	Good	Fair	Good
46	28+158	Good	Good	Fair	Good

Annexure 4: O&M Costs

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	73.69	12	4	350	12,37,992	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	kms	2.61	24	4	350	87,696	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km	2.61	52	1	1939	2,63,161	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Km	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km	2.61	12	0	21000	-	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km	36.845	2	5	350	1,28,958	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	192	2	2	650	4,99,200	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	73.69	4	2	350	2,06,332	02 nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	25	6	2	350	1,05,000	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	3.00	6	60	350	3,78,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos	12	2	2	350	16,800	02 nos of Labour for removal of vegetation/Structure
								29,23,139	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	3	10000	30,000	Considered Rs 10,000/- per

S No.	Item		Unit	No	Frequency per year	Quan tity	Rate	Amount	Remarks
									vehicle including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos	2.6	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for RoW	Monthly	Nos		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos	2.6	12	0	12000	1,566	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos	2.6	12	0	2500	5,220	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	3	5000	1,80,000	5000/month
9	Toll plaza AMC	Yearly	Nos		12	3	5000	1,80,000	5000/month
								3,96,786	
1	Patrolling vehicle	Monthly	Nos	12	1	2	10000	20000	Considered Rs 10,000/- per vehicle including maintenance

S No.	Item		Unit	No	Frequency per year	Quan tity	Rate	Amount	Remarks
2	Ambulance	Monthly	Nos	12		1	10000	10000	Considered Rs 10,000/- per vehicle including maintenance
3	Tow away trucks and Crane	Monthly	Nos	12		2	40000	80000	Considered Rs 40,000/- per vehicle including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								1,70,000	
								34,89,925.00	

Incidental cost

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	5875	516	30,31,500	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc.)	Yearly	Sqm	1	1	1500	168	2,52,000	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	1105.35	225	7,46,111	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considered 500 nos)

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
5	MBCB	Monthly	RMT			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	73.69	4	18	2250	1,62,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km	5220	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls	1	1	0.00	4000	-	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	Rmt	0		0.00	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)
							Total Cost for 1 year	**44,71,611**	

Operational Expenses

S.No.	Particulars	Amount
1	Man Power	₹ 1,37,40,000
2	Fuel for Generator & Vehicles	₹ 42,24,000
3	Electricity	₹ 6,60,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 27,533
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
Total Amount		**₹ 1,87,36,533**

Major Maintenance Summary

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	30-01-2021					
Major Maintenance - Highway	01-04-2024	23,47,96,343	3.20	3.0%	25,73,36,791	25.73
Major Maintenance - Highway	01-04-2025	23,47,96,343	4.20	3.0%	26,43,80,682	26.44
				Total	₹ 52,17,17,473	52.17

Major maintenance BOQ

S.no.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-			-	

S.no.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	7,49,950.00	14.00	1,04,99,300	7,49,950.00	14.00	1,04,99,300
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	29,998.00	7,480.00	22,43,85,040	29,998.00	7,480.00	22,43,85,040
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	29,998.00	6,800.00	20,39,86,400	29,998.00	6,800.00	20,39,86,400
4	Micro surfacing	Sqm	-	160.00		-	160.00	
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**43,88,70,740**			**43,88,70,740**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's	Rmt	5,220.00	380.00	19,83,600	5,220.00	380.00	19,83,600

S.no.	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	representative. - **Consider 5% for construction period.**							
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	17,803.33	516.00	91,86,520	17,803.33	516.00	91,86,520
3	Road Studs	Nos	25,434.00	750.00	1,90,75,500	25,434.00	750.00	1,90,75,500
4	Kerb painting		1,905.30	250.00	4,76,325	1,905.30	250.00	4,76,325
	Total			-	**3,07,21,945**		-	**3,07,21,945**
	Grand Total				**46,95,92,685**			**46,95,92,685**

Annexure 5: Letter of Award

KARNATAKA ROAD DEVELOPMENT CORPORATION LTD.

KRDCL/WCP3/ LOA /2015-16 1907 Date: 11-09-2015

To
M/s Dilip Buildcon Limited,
Plot No. 5, Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal (M.P.) - 462 016

Kind Attn: Mr. Dilip Suryavanshi
Email: db@dilipbuildcon.co.in

LETTER OF AWARD

Sir,

Sub: "Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hassan - Ramanathapura - Periyapatna in the State of Karnataka on DBFOMT Annuity Basis (**WCP-3**)"– Letter of Award (LoA)

Ref.: (i) RFP issued on 10th April 2015
(ii) Your bid submitted on June17th, 2015

This is to notify that your bid submitted for the captioned project (the "Project") for a semi-annual annuity quote of Rs 26,28,00,000 (Rupees Twenty Six Crore and Twenty Eight Lakh only) is hereby accepted by the Government of Karnataka by declaring you as the "Selected Bidder". The concession period is 10 (ten) years including construction period of 24 (twenty four) months.

1. The semi-annual annuity quoted by you shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA).

2. Lumpsum Payment of Rs 88,77,20,000 (Rupees Eighty Eight Crore, Seventy Seven Lakh and Twenty Thousand only) shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA) in four equal instalments.

3. In accordance with the clause 3.3.2 of the Project RFP Document, you are hereby requested to confirm your acceptance of this Letter of Award within 7 days of its receipt by signing and returning the duplicate copy of the LOA in acknowledgement thereof. Thereafter, pursuant to clause 1.3 of the Project RFP Document, you are required to execute the Concession Agreement within 45 days from the issue of LoA.

4. You shall promote and incorporate the Concessionaire as a limited liability company under the Companies Act 1956/2013 as applicable, as the entity which shall undertake and perform the obligations and exercise rights of the Bidder under the LoA, including the obligation to enter into the Concession Agreement pursuant to the LoA for executing the Project.

Annexure 6: Provisional Completion Certificate

PROVISIONAL COMPLETION CERTIFICATE

1. I, **Raj Mallela**, acting as Independent Engineer, under and in accordance with the Concession Agreement dated 16th December 2015 (the "**Agreement**"), on Design, Build, Finance, Operate ,Maintain and Transfer (DBFOMT) the State Highway Hassan - Ramanathapura - Periyapatna in the State of Karnataka on DBFOMT Annuity Basis, through DBL Hassan Periyapatna Tollways Limited, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
2. Construction Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire, I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway, pending completion thereof.
3. In view of the foregoing, I am satisfied that the 71.940 km out of the total 73.690 km of Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the 28th day of February 2018.

ACCEPTED SIGNED, SEALED
AND DELIVERED

For and on behalf of CONCESSIONAIRE
by:

(Authorized Signature)
DBL Hassan Periyapatna Tollways Limited, (DHPTL)

Address: Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh 462016

SIGNED, SEALED AND DELIVERED

For and on behalf of INDEPENDENT
ENGINEER by:

(Independent Engineer)
Roughton International Ltd
in Association with SATRA Infrastructure Management Services Pvt Ltd

Address: H. No. 3-43-119, Plot No. 10
Wellington Road, Lalitha Nagar
West Marredpally, Secunderabad 500 026
Telangana

Annexure 7: Insurance

Signer: ATUL JERATH
Date: Thursday, S[illegible] 24, 2020 5:50 AM
Location: NOIDA

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/44**	**Prev Policy No**	:
Cover Note No	: ER1700203537	Cover Note Dt	: 08/09/2020
Insured's Code	: 114936584	Issuing Office Code	: 171200
Insured's Name	: DBL Hassan Periyapatna Tollways Pvt Ltd (GSTIN: 29AAFCD5002K1ZP)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: NO.77,, BEHIND RMP QUARTERS, 5TH STAGE, KUVEMPUNAGARA,MYSORE, Karnataka, 570023	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: HASSAN[illegible]@unisoninsurance.net	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 08/09/2020 TO MIDNIGHT OF 07/09/2021

Collection No & Dt : DC_I_INDCSH 3214000876 - 23/09/2020 GST INVOICE NO :2419502804 UIN :0

Gross Premium : 2,906 GST : 523 Stamp Duty : 1 Total : 3,429

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 64,55,872

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Hassan to Periyapatna

KARNATAKA - 573201

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		64,55,872

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 22/09/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001997

जारीकर्ता कार्यालय/Issuing Office

कार्यालय कोड /Office Code: 321300

कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1Z9
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355

बिक्री चैनल कोड/Sales Channel Code: 9103550000001

नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810

सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL HASSAN PERIYAPATNA TOLLWAYS LTD

पता/ Address: NO-77, BEHIND RMP QUARTERS,5TH STAGE, KUVEMPUNAGARA, MYSORE-570023, City: MYSORE, District: MYSORE, State: KARNATAKA, PIN: 570023.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881851

फोन /Phone:

ई-मेल /E-Mail:

पैन /PAN: AAFCD5002K

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 23,29,466.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 4,19,304.00		
केरल बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	880020032708711 7 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनर्प्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	32130081191000766 6 Dt. 27/03/2020
कुल /Total Amount	₹ 27,48,770.00	पछिली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Twenty Seven Lakh Forty Eight Thousand Seven Hundred Seventy Only.)

Location:Existing State Highway Hassan - Ramanathapura - Periyapatna, Karnataka Hassan, Hassan - District Others, 573101.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	2,21,35,00,000.00	1,00,000.00
2	Roads	Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	11,65,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable:Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hassan - Ramanathapura - Periyapatna in the state of Karnataka on DBFOMT Annuity Basis (WCP-3)

Name of the co insured under the policy is Dilip Buildcon Ltd. & KRDCL.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS.

Printed on 27/03/2020 by ID: 75159

Page no: 1

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

April 15, 2020

DILIP BUILDCON LIMITED

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,MADHYA PRADESH,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203376737300000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "***Insurance***" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203376737300000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor HDFC House, 165 - 166 Backbay Reclamation, H.T. Parekh Marg, Churchgate, Mumbai - 400 020
Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078
UIN : IRDAN125P0017V02201112 | IRDAI Reg No. 146 | CIN :
Toll Free Number: 1800 2700 700
Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699
Email : care@hdfcergo.com

Annexure 8: Change of Scopes

DBL HASSAN PERIYAPATNA TOLLWAYS LIMITED
(CIN No. : U45203MP2015PLC034878)

DBL/SH-21/HAS-PTA/WCP-3/2019-20/852

16th July 2019

To,
The Chief Engineer,
Karnataka Road Development Corporation Ltd
4th Floor, Opposite Orion Mall,
Raj Kumar Road, Rajaji Nagar,
Bangalore, Karnataka-560 010.

Sub: -Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) on hybrid annuity basis Hassan- Ramanathapura – Periyapatna in the state of Karnataka (WCP-3) – **Details of Outstanding Works** -Reg

Ref: 1. Concession Agreement Dated: 16.12.2015
2. Authority letter No- KRDCL/Co-finance/WCP-3/2019-20/955 dated 26.06.2019

Dear Sir,

The Concessionaire is in receipt of your office letter cited above which the Authority has requested to the Independent Engineer to list out all the items works in a desired format which are not able to be executed for the reason due to unavailability of land or any issue due to site condition.

The Concessionaire likes to affirm here that all the Construction activities within the stretches handed over by the Authority has been completed and some of the activities are being outstanding due to the issues which are purely attributable by the Authority.

In the absence of Team Leader, Concessionaire is herewith submitting proposal of De-scope with the list of the items which shall be dropped from the scope as enclosed in desired format in Annexure-I.

Further considering the above points it is requested to early action on the said issue and settle all the outstanding payments due to the Concessionaire at the earliest.

Thanking you and assuring our best service all the time.

Yours Faithfully,

Retnakaran Sajilal
(Authorized Signatory)
DBL Hassan-Periyapatna Tollways Limited

Encl: Annexure-I.
CC to: 1. The Executive Engineer, KRDCL, Mysore
2. The Independent Engineer, Rougthon-Satra, Arakalgud.

Registered Office : Plot No. 5, Inside Govind Narayan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal - 462016 (M.P.) Ph No 0755-4029999, Fax 0755-4029998, E-mail : db@dilipbuildcon.co.in
Project Office: House No. 34, MIG, Santhemarur Road, Opp. Banne Mantapa, Arkalgud Taluk, Hassan Dist, Karnataka - 573 102, Ph: 08175-221771 Email: dblhassan@dbl.co.in

Annexure-I

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hassan-Piriyapatna in the State of Karnataka on DBFOMT Annuity Basis WCP-3

Authority	Karnataka Road Development Corporation Limited
Independent Engineer	Roughton -SATRA
Concessionaire	DBL Hassan Periyapatana Tollways Limited

S. No.	Description	Unit	As per contract Scope	Completed	Balance			Remarks
					To be Completed	To be De-Scope		
1	Bus bay	Nos	28	24	2	2		
2	Bus shelter	Nos	28	23	2	3		
3	Drain Side Kerb	Rmt	30154	28794	0	1340		
4	Footpath	Rmt	30154	28794	0	1340		
5	Ground Water Recharge Pit	Nos	10	0	10	0		
6	DB Trees	Rmt	6096	0	0	6096		
7	Electrical Pole	Nos	456	456	0	20		
8	Sign Boards	Nos	2076	2040	0	36		
9	Structure Protection Work	Nos	178	161	0	17		
	Grand Total							

Consultant

SHREM FINANCIAL PRIVATE LIMITED

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hirekerur-Ranibennur in the State of Karnataka on DBFOMT Hybrid Annuity Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Hirekerur-Ranibennur in the State of Karnataka on DBFOMT Hybrid Annuity Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Hirekerur-Ranibennur	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL HIREKERUR RANIBENNUR TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Hirekerur Ranibennur Tollways Ltd. (herein after referred to as the "Concessionaire") had augmented the existing State Highway from "Hirekerur – Ranibennur section in the State of Karnataka, in accordance with the provisions of the Concession Agreement executed with Karnataka Road Development Corporation Limited (herein after referred to as the "KRDCL") on 16th Day of December 2015. on Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) Hybrid Annuity Basis.

The project road comprises of three State Highways viz., SH-62, SH-76 and SH-57. The Project Road starts from Hirekerur and ends at Ranibennur intersecting with NH-4. The road passes through Hirekerur, Chikkerur, Haunsabhavi, Koda, Halageri and Ranibennur.

Figure 1.1: Project Location Map

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL Hirekerur Ranibennur Tollways Ltd vide agreement dated 26 March 2018.

SHREM FINANCIAL PVT. LTD (SFPL). appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any.

1.2 The Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Development of Hirekerur-Haunsabhavi-Ranibennur (SH-62, SH-76 &SH-57) in the State of Karnataka on DBFOMT Annuity basis.
2	Road Type	State Highway
3	Name of the Authority	KRDCL
4	Name of the Concessionaire	DBL Hirekerur Ranibennur Tollways Ltd
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	11.09.2015
7	Date of Agreement	16.12.2015
8	Date of Supplementary Agreement	29.09.2016
9	Design Length as per Schedule B of CA	56.401 Km.
10	Actual Length Constructed	56.401 Km.
11	Project Lane Configuration	Two Lane
12	EPC Cost	174.2 Crores
13	Nature of contract	DBFOMT
14	Toll collected by	KRDCL
15	Concession Period	10 years from appointed date
16	Appointed date	29.09.2016
17	Concession End Date	28.09.2026
18	Construction Period	730 days
19	Schedule Completion Date	28-09-2018
20	Date of issuance of Provisional Certificate (Commercial Operation Date)	24.02.2018
21	Date of issuance of Completion Certificate	Yet to be received
22	Annuity Amount (every six months)	Rs. 19.62 Cr
23	Total Number of Annuities payable	16 Nos.
24	First Annuity Payment Date	28-03-2019
25	Total Number of Annuity Payments paid	4 Nos

1.3 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following **Table 2.1**.

Table 2.1: Salient Features

S. No.	Particulars	As per Schedule B	COS	As per Site
1	Total Length of 2-Lane with paved & earthen shoulder	47.301 Kms.		47.301 Kms.
2	Length of 2-Lane with paved shoulder	7.450 Kms.	1.650 Kms. Added	9.100 Kms.
3	Length of 4-Lane road	1.650 Kms.	-1.650 Kms. (4 Lane) to (2-Lane)	
4	Toll Plaza	1. Km. 19+050 2. Km. 43+660		1. Km. 19+050 (SH:76 Km. 153+900) 2. Km. 43+660) (SH:62 Km. 32+300)
5	Bus Bays / Bus Shelters	22 Nos.		8 Nos both Bus shelters and Bus bays completed. 6Nos only bus bays completed. 8Nos descoped.
6	Truck Lay Bays	Nil		Nil
7	Major Junction	9 Nos.		9 Nos.
8	Minor Junctions	22 Nos.		22 Nos.
9	RUB/ROB	Nil		Nil
10	Level Crossing	Nil		Nil
11	Bypass	Chikkerur (Km. 11+200 to Km. 13+192) 1.992 Kms.		1.992 Kms.
12	Re alignment	Km. 14+246 to Km. 14+366 (0.120 Kms.)		Km. 14+246 to Km. 14+366 (0.120 Kms.)
		Km. 15+000 to Km. 15+120 (0.120 Kms.)		Km.15+000 to Km. 15+120 (0.120 Kms.)
13	Major Bridges	0 Nos.		0 Nos.
14	Minor Bridges	11 Nos.		11
15	Causeway	0 Nos.		0 Nos.
16	Box/Slab Culverts	15 Nos.		18 Nos*.
17	Pipe Culverts	81 Nos.		76 Nos*.

*As per site requirement, 3 additional box culverts are constructed and 5 pipe culverts are not constructed as per site condition.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Section Schedule, shown below as per Schedule B of CA during the Construction.

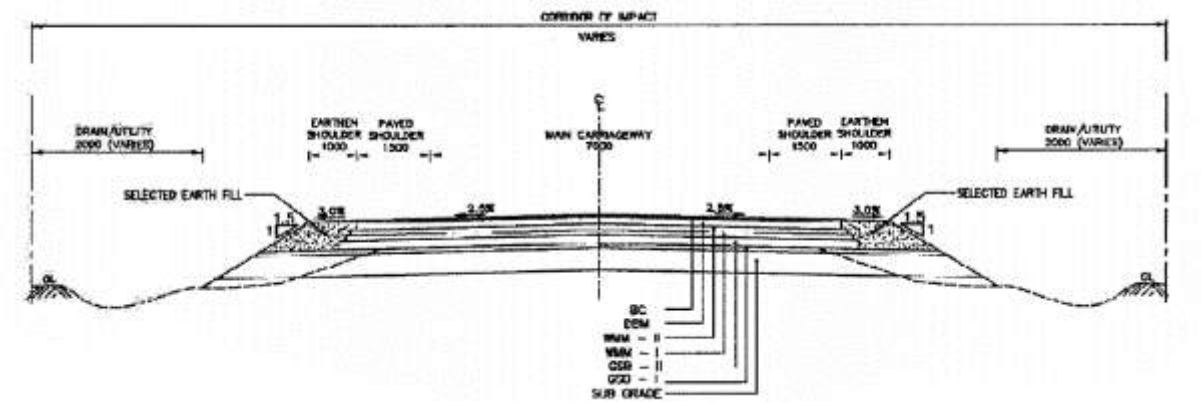

Figure 2.1: TCS-A of CA Rural cross section with paved shoulder

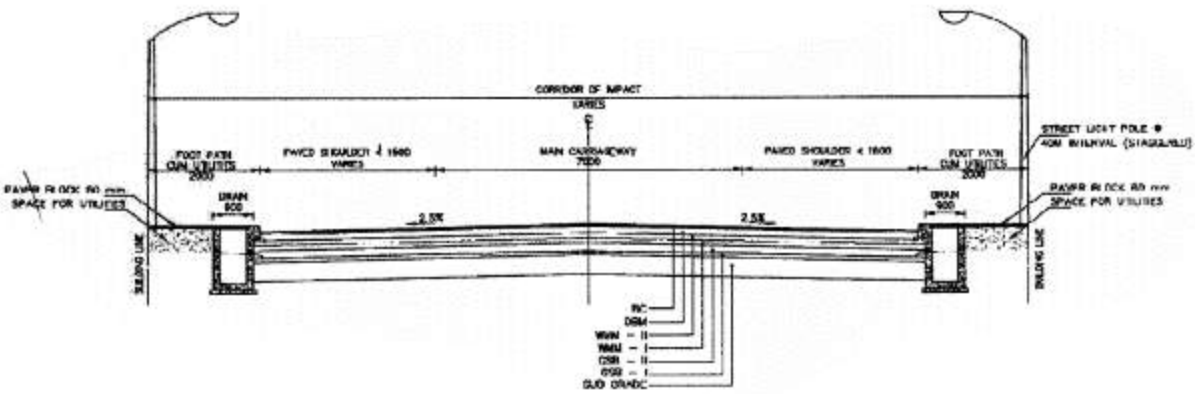

Figure 2.2: TCS-B of CA 2 Lane carriageway with Paved shoulder in Built-up area

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Length (Kms.)	Type of TCS
1	0+000	1+650	1.650	TCS B
2	1+650	8+500	6.850	TCS A
3	8+500	9+000	0.500	TCS B
4	9+000	13+192	4.192	TCS A
5	13+192	16+650	3.458	TCS A
6	16+650	17+400	0.750	TCS B
7	17+400	19+800	2.400	TCS A
8	19+800	22+500	2.700	TCS B
9	22+500	26+100	3.600	TCS A
10	26+100	26+800	0.700	TCS B

S. No.	From (Km.)	To (Km.)	Length (Kms.)	Type of TCS
11	26+800	31+700	4.900	TCS A
12	31+700	32+700	1.000	TCS B
13	32+700	49+400	16.700	TCS A
14	49+400	51+200	1.800	TCS B
15	51+200	56+401	5.201	TCS A

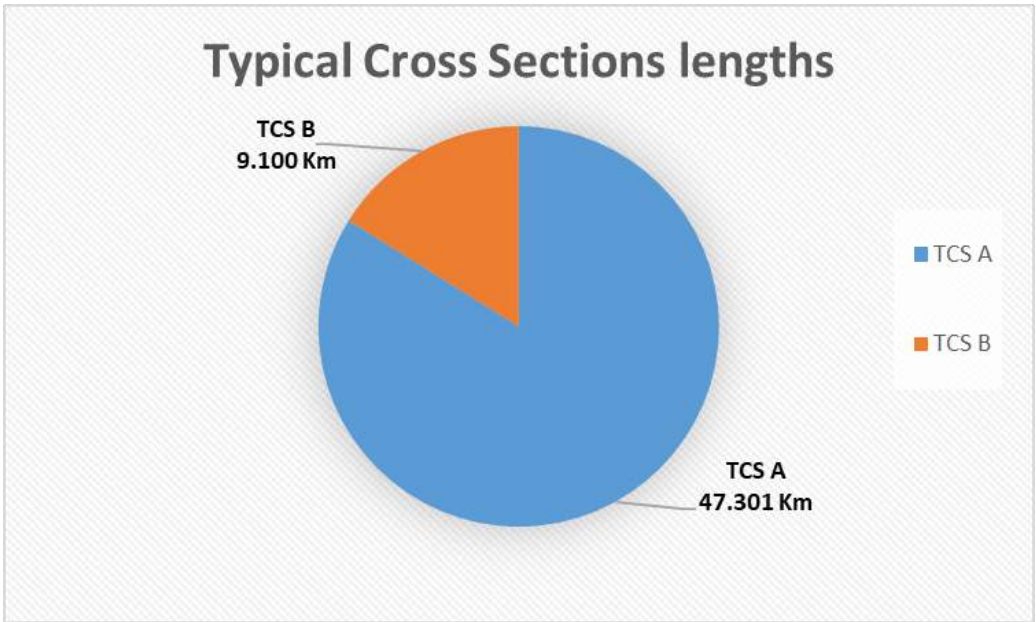

Figure 2.3: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, side drains are constructed along the main carriage way on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.5 Bypass/Realignment

Realignments at Chikkerur from Km. 11+200 to Km. 13+192 (1.992 Kms.), from Km. 14+246 to Km. 14+366 (0.120 Kms.) and from Km. 15+000 to Km. 15+120 (0.120 Kms.) are proposed on the project road as per provisions of Schedule B of CA.

2.6 Intersections

As per provisions of Schedule B of CA, 9 Major Junctions and 22 Minor Junctions are provided. Details are given below.

Table 2.3: List of Junctions

S. No.	Chainage (Km.)	Type of Junction	Side	Major/ Minor
1	0+000	T	LHS	Major
2	1+040	T	RHS	Major
3	1+630	T	RHS	Minor
4	3+660	T	LHS	Minor
5	5+790	T	RHS	Minor
6	8+290	T	RHS	Minor
7	11+20	T	RHS	Major
8	14+950	T	LHS	Minor
9	16+40	T	RHS	Minor
10	16+835	x	both	Minor
11	19+270	T	LHS	Minor
12	20+080	T	RHS	Minor
13	20+680	x	both	Minor
14	22+040	T	RHS	Major
15	22+240	T	LHS	Major
16	24+690	x	both	Major
17	26+570	T	RHS	Minor
18	28+140	T	LHS	Minor
19	29+655	x	both	Minor
20	31+835	T	LHS	Minor
21	32+480	T	LHS	Minor
22	35+545	T	RHS	Major
23	36+400	T	LHS	Minor
24	38+145	T	LHS	Minor
25	40+405	x	both	Minor
26	42+305	T	RHS	Minor
27	42+415	T	LHS	Minor
28	45+960	T	RHS	Minor
29	50+015	T	RHS	Minor
30	50+640	x	both	Major
31	56+401	T	LHS	Major

2.7 Grade Separated Structures and underpasses

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.8 Road Over Bridge (ROB)

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Carriageway and pavement Details

Summary of Carriageway Details is given below:

Table 2.4: Summary of Carriageway and pavement Details

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks
1	Total Length of 2-Lane with paved & earthen shoulder	47.301	---	Type-A of Schedule B of CA
2	Length of 2-Lane with paved shoulder	7.450	---	Type-B of Schedule B of CA
3	Length of 4-Lane road	1.650	---	Type-D of Schedule B of CA
4	Total Length	56.401	---	
TYPE OF ALIGNMENT				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	56.401	---	
9	Total Length of the Project	56.401	---	

2.10 Summary of Structures

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No.	Description	Minor Bridges	Pipe Culverts	Box/Slab Culverts
1	Retained	4	5	2
2	Widening		17	4
3	New/ Reconstruction	7	59	9
	Total	**11**	**81**	**15**

2.11 Toll Plazas

- There are two toll Plazas on the project road at Km. 19+030 & Km. 43+700.
- Toll Plaza 1 at Km. 19+030 comprises of 4 lanes.
- one lane in each direction is used for four wheelers and the other lane is used as bike lane.
- Toll Plaza 2 which is at Km. 43+700 comprises of 4 lanes.
- One lane in each direction is used for four wheelers and the other lane is used as bike lane.
- List of tolling equipment provided at site is furnished in the Detailed Report.

2.12 Bus bays/Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 22 locations. Details are provided below.

Table 2.6: List of Bus shelters

S. No.	Chainage (Km.)	Bus bays/ Bus shelter
1	3+550	Bus shelter
2	3+750	Bus shelter
3	8+660	Bus shelter
4	8+720	Bus shelter
5	14+650	Bus shelter
6	14+690	Bus shelter
7	21+880	Bus shelter
8	22+100	Bus shelter
9	26+500	Bus shelter
10	26+410	Bus shelter
11	28+310	Bus shelter
12	28+010	Bus shelter
13	35+430	Bus shelter
14	35+500	Bus shelter
15	36+300	Bus shelter
16	36+480	Bus shelter
17	40+440	Bus shelter
18	40+500	Bus shelter
19	42+220	Bus shelter
20	42+270	Bus shelter
21	45+940	Bus shelter
22	46+050	Bus shelter

2.13 Other Project Facilities Provided as per Schedule C of CA

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and Built-up sections and is functional.

Km. 8+600

Km. 22+114

Figure 2.4: Representative Photos of Bus Shelters

CHAPTER 3. STATUS OF WORK AFTER PCOD

3.1 General

In accordance with Clause 14.3 of Concession Agreement, Provisional certificate was issued on 24th February, 2018 for completed length of 50.071 Kms. The details of completed length and balance length are given in the following **Tables 3.1 & 3.2.**

Table 3.1: Details of Completed Length

From (Km.)	To (Km.)	Length (Kms.)
1+720	11+200	9.480
14+300	18+880	4.580
19+220	20+080	0.860
20+850	43+450	22.60
43+850	56+401	12.551
	Total	**50.071**

The work in balance sections, which could not be completed due to delay in handing over of land within 240 days of appointed date, is as follows.

Table 3.2: Details of Balance Length

From (Km.)	To (Km.)	Length (Kms.)
0+000	1+720	1.720
11+200	14+300	2.390
18+880	19+220	0.340
20+080	20+850	0.770
43+450	43+850	0.400
	Total	**5.620**

3.2 Punch list

A Punch list is a list of tasks and items that need to be completed before a construction project can be considered finished. Accordingly, two punch lists were given along with Provisional Certificate. Punch list-1, balance works pending due to reasons attributable to authority. Punch List-II, works delayed attributable to concessionaire are included in this list and shall be completed within 90 days from the issuance of Provisional certificate. The details of Punch list-I are given in the following **Table 3.3**.

Table 3.3: Punch List-I

S. No.	Item	Location	Remarks
Punch List for Provisional completion Sections-I			
1	Foot path	Km. 19+800 to Km. 20+080, Km. 20+850 to Km. 22+300 = 2.200 Kms.	Delay in water pipeline shifting
2	Development of bus bays	14 Locations	Delay in Land acquisition

Punch List for Non-Provisional completion Sections-I

S. No.	Item	Location	Length (Kms.)	Remarks
1	Hirekerur town section 4 lane overlay with widening including RCC drain and Footpath	Km. 0+000 to Km. 1+720	1.720	Completed
2	Chikkelur bypass	Km. 11+200 to Km. 13+192	1.990	Completed
3	Realignment portion	Km. 13+900 to Km. 14+300	0.400	Completed
4	Building works and PQC road work at toll plaza location-2 Nos	Km. 19+050 and Km. 43+670	0.740	Completed
5	Hansubhavi town section	Km. 20+080 to Km. 20+850	0.770	Delay in rehabilitation and resettlement

Punch List-II, items to be started or in progress shall be completed within 90 days from the issuance of Provisional certificate. The details are given in the following **Table 3.4**.

Table 3.4: Punch List-II

S. No.	Item	Location	Remarks
1	Bed Protection works of CD structures		In progress
2	Providing Kerb and Footpath	A length of 1.300 Kms.	In progress
3	Embankment slope protection works	Stone pitching 0.360 Kms, Geogreen-0.840 Kms. and turfing	Completed
4	Ground water recharge pits	10 locations	Completed
5	Bus shelters	8 locations	Completed
6	Energising of street lights	Urban sections	Completed

CHAPTER 4. ROAD INVENTORY & PAVEMENT CONDITION

4.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

4.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following **Table 4.1**. Few representative photographs are presented below.

Table 4.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain & Rolling
2	Land Use	Mixture of Un-irrigated cultivated land and irrigated cultivated land, and barren land
3	Two lane length	56.401 Kms.
4	Earthen shoulder	1.500 m on each side
5	Junctions	31 Nos.
6	Toll Plazas	2 Nos.
7	Sign boards	Sign boards are provided as per Highway requirements
8	Road Markings	Lane markings are provided as per Highway requirement
9	Bus Bays /shelters	14 Nos.
10	Highway Lighting	Provided as per requirement
11	Avenue plantation	Provided

Km. 33+418

Km. 56+380

Km. 48+518

Figure 4.1: Representative Photos of Existing Road Features

4.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 4.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

4.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive-over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below.

Table 4.3: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
0+000	56+401	56.401	Good

Km. 23+760

Km. 26+050

Km. 39+165

Km. 46+929

Km. 53+139

Figure 4.2: Representative photos of Pavement Condition

CHAPTER 5. INVENTORY AND CONDITION OF STRUCTURES

5.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

5.2 Inventory of Structures

There are 11 Nos Minor Bridges, 76 Nos Pipe culverts and 18 Nos Slab/ Box culverts along the project road.

Table 5.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	0
2	Minor Bridge	11
3	Pipe culverts	76
4	Slab/Box Culverts	18

The superstructures of the minor bridges are of RCC solid slab/RCC Box and the substructures are of PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

5.3 Details of Minor Bridges

There are 11 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab/RCC Box type and the substructure is PCC/RCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper. RCC Railing are provided in all structures.

Table 5.2: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	12+270	1 x 10.0	10	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC Railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
2	12+450	1 x 10.0	10	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC Railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
3	14+608	2 x 3.0	6	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.
4	27+399	2 x 4.0	8	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.
5	44+339	4 x 12.1	48.4	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.
6	44+903	1 x 6.3	6.3	It has RCC solid slab superstructure supported on

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
				RCC wall type piers and abutment. Other features are RCC Railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
7	49+256	2 X 6.3	12.6	It has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC Railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
8	51+376	4 X 9 .0	9	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.
9	52+422	4 X 6.0	6	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.
10	52+422	1 X 9.0	9	MNB has RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC Railing, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.
11	53+166	2 X 4.0	8	It has RCC Box structure. It has RCC Parapet wall, bituminous wearing coat.

Km. 44+339

Km. 51+376

Km. 53+166

Figure 5.1: Representative photos for Minor Bridges

5.4 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

5.4.1 General description of the Slab/Box Culverts

There are 18 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 5.3: List of Slab/Box Culverts

S. No.	Chainage @ Km.	Span (m)	Vent Size (m)
1	3+054	1 x 2.6	1.000
2	5+225 (Extra)	1 x 1.0	1.000
3	6+104	1 x 4.1	4.100
4	7+640	1 x 4.0	3.500
5	12+791	1 x 3.6	2.600
6	12+924	1 x 3.5	3.100
7	23+798	1 x 4.0	1.500
8	25+639	1 x 1.0	1.000
9	26+047	1 x 1.0	1.000
10	26+942	1 x 1.0	1.000
11	28+198 (Pipe to Box)	1 x 4.0	1.500
12	29+342	1 x 1.8	2.100
13	32+280	1 x 3.0	2.100
14	32+463	2 x 3.0	2.100
15	33+418	1 x 5.0	2.400
16	39+165	1 x 4.0	2.500
17	48+514	1 x 2.0	2.100
18	50+775	1 x 3.0	2.100

The general condition of above Box /slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 6+104

Km. 26+047

Km. 26+942/26+950

Km. 39+165

Figure 5.2: Representative photos for Box/Slab culverts

5.4.2 General Description of the Pipe Culverts

There are 76 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 5.4: List of Pipe Culverts

S. No.	Chainage @ Km.	No. of Rows X Dia.(m.)	S. No.	Chainage @ Km.	No. of Rows X Dia.(m.)
1	0+033	1 x 0.9	39	18+410	2 x 0.9
2	0+037	1 x 1.2	40	18+656	1 x 1.2
3	2+122	2 x 1.2	41	19+306	1 x 1.2
4	2+520	1 x 1.2	42	20+728	1 x 1.0
5	3+268	2 x 0.9	43	22+040	1 x 1.0
6	3+718	1 x 1.2	44	22+666	1 x 1.0
7	4+348	1 x 1.2	45	22+976	2 x 0.9
8	4+575	1 x 1.2	46	24+850	2 x 0.9
9	6+333	1 x 1.2	47	26+168	2 x 0.9
10	6+690	1 x 1.2	48	27+016	2 x 0.9
11	6+989	2 x 0.9	49	27+219	2 x 0.9
12	8+471	1 x 1.2	50	28+392	2 x 0.9
13	8+923	1 x 1.2	51	28+693	2 x 0.9
14	9+143	1 x 1.2	52	29+533	2 x 0.9
15	9+807	2 x 0.9	53	35+625	2 x 0.9
16	10+191	2 x 1.2	54	36+264	1 x 1.0
17	10+522	1 x 1.2	55	36+339	1 x 1.2
18	10+960	3 x 1.2	56	37+754	1 x 1.2
19	11+220	2 x 1.2	57	40+996	1 x 1.2
20	11+485	1 x 1.2	58	41+198	1 x 1.2
21	11+651 (Extra)	2 x 0.9	59	41+448	1 x 1.0
22	11+703	1 x 1.2	60	41+655	1 x 1.0
23	11+960	1 x 1.2	61	42+110	1 x 1.2
24	12+170	1 x 1.2	62	42+695	2 x 0.9
25	12+675	1 x 1.2	63	45+058	2 x 0.9
26	13+063	1 x 1.2	64	45+219	2 x 0.9

S. No.	Chainage @ Km.	No. of Rows X Dia.(m.)
27	13+195	1 x 1.2
28	13+912	1 x 1.2
29	14+070	1 x 1.2
30	14+235	1 x 1.2
31	15+683	1 x 1.2
32	16+163	1 x 1.2
33	16+500	1 x 1.2
34	16+565	1 x 1.2
35	16+845	1 x 1.2
36	17+087	1 x 1.2
37	17+319	1 x 1.2
38	17+965	1 x 1.2

S. No.	Chainage @ Km.	No. of Rows X Dia.(m.)
65	45+863	2 x 0.9
66	46+929	2 x 0.9
67	47+184	2 x 0.9
68	48+040	1 x 1.2
69	48+890	1 x 1.2
70	49+830	1 x 1.2
71	50+050	1 x 1.2
72	50+636	1 x 1.2
73	51+110	1 x 1.2
74	51+983	1 x 1.2
75	55+041	1 x 1.0
76	55+375	1 x 1.2

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 6+333

Km. 11+485

Km. 46+929

Figure 5.3: Representative photos of Pipe Culvert

The culverts are in fair condition and can be retained in the present condition with following repairs/rehabilitation measures.

- Chocked culverts must be cleared.
- Debris and garbage near outside the vents must be removed.

CHAPTER 6. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

6.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

6.2 Pavement design

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

6.2.1 Pavement design crust thickness

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

The project road has been divided into 2 sections i.e. HS-1 (from Km. 0+000 to Km. 33+050) and HS-2 (from Km. 33+050 to Km. 56+401). The design traffic as per traffic during design stage and design traffic as per CA is summarized below

Table 6.1: Design Traffic Summary

HS	Existing Chainage	As per traffic surveys		As per schedule		Adopted for design	
		10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)	10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)	10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)
1	Km. 32+270	0.78	1.44	0.67	1.17	0.78	1.44
2	Km. 153+950	2.08	3.83	3.12	5.52	3.12	5.52

As per schedule, Appendix B-II, “The design of the crust for the project road shall be done for schedule MSA or as per actual traffic whichever is more”. Since the calculated MSA of the project road is coming out higher in HS-1 and lower in HS-2, with respect to the values provided in Schedule B of Concession Agreement, therefore MSA as per actual traffic for HS-1 and as per given in schedule B for HS-2 has been adopted for the design of crust for the road. Pavement crust thickness in the pavement design report for flexible pavement is as follows: -

Table 6.2: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design/Adopted Parameters	
		HS-1	HS-2
1	Sub Grade CBR (%)	7 %	7 %
2	Design Life (Years)	10 years for bituminous 15 years for non-bituminous	10 years for bituminous 15 years for non-bituminous
3	Design Traffic (MSA)	0.78 MSA for bituminous 1.44 MSA for non-bituminous	3.12 MSA for bituminous 5.52 MSA for non-bituminous
4	Surface course (BC)	40 mm	40 mm
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	150 mm	230 mm

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

6.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 0.78 MSA and 3.12 MSA (up to 2027 for 10 years) for HS-1 and HS-2 respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, as per clause 2.3.7 of Schedule K of CA, periodic renewal shall be carried out as and when required and at least once between 5th and 7th year (from COD) within the concession period, the periodic maintenance activities shall also include profile corrective course overlaid with the periodic renewal of the wearing course of BC 25 mm thickness of the road pavement, the concessionaire may adopt cost effective treatment like asphalt recycling, stone mastic, micro seal etc.

Based on the present available data It is envisaged that existing pavement require overlay (periodic renewal) in the year of 2025. Nevertheless, the pavement shall be maintained to the desired level of performance by carrying out periodical renewals as mentioned in subsequent sections.

6.4 Maintenance/ Overlay schedule

Periodic Maintenance shall be carried out as and when required based on the road condition and at least once in 7 years from COD and in the last year of Concession period as a good industry practice. It includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC minimum 25 mm thickness. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Proposed in the year 2025

CHAPTER 7. SAFETY AUDIT OF ROAD

7.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 7.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety Audit

7.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following **Table 7.2**.

Table 7.2: Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good

S. No.	Item Description		Status	Condition
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Solar Blinkers/Rumble strips		Available as per site requirement	Good
3	Road Marking	Studs &Lane marking	Available as per site requirement	Fair
4	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

7.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the maintenance period.

Km. 0+000

Km. 6+100

Km. 7+680

Km. 48+200

Km. 49+270

Km. 56+330

Km. 56+330

Figure 7.1: Representative photos of Sign Boards

CHAPTER 8. TOLL PLAZA & HTMS

8.1 General:

There are two toll Plazas on the project road at Km. 19+030 & Km. 43+700 and both are in operation. Control room, Traffic aid post, medical aid post, quarters completed except some portion of compound walls, PQC on extra wide lane and plumbing works. The compound wall was not constructed due to adjacent land owner's objection. The same was intimated to Authority vide Letter No.DHRTL/KRDCL/WCP-05/2019-20/681 dated 14.01.2020 and DHRTL/KRDCL/WCP-05/2019-20/688 dated 25.01.2020.

As per clause 2(g) of Schedule-C, the Concessionaire has to maintain Highway patrol, Ambulance, Crane at site office and the Concessionaire is maintaining the Highway patrolling vehicle and Ambulance.

Letter No. DHRTL/KRDCL/WCP-05/2020-21/736 dated 10.06.2020 elucidates that TP1 and TP2 are fully functional including TMS and toll collection also started since 16th Sept 2019.

8.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 8.1: List of Equipment at Two Toll Plaza and Control Rooms

S. No.	Item Description	Qty.
	Lane Equipment	
1	Combined Toll Lane Controller And	12
2	Toll Collector Keyboard Qwerty Tvs	12
3	Avc Sensor Includes 3Set-Height Sensor-Ir	12
4	Thermal Receipt Printer Epson Tm-T88	12
5	Overhead Lane Signals (300Mm Dia)	12
6	Lane Incident Capture Camera	12
7	User Fare Display 2- Lines,12-Character	12
8	Intercom Slave Unit AI Phones Nem-10/C	12
9	Lane Barrier Wejoin Wjdz102-11	12
10	Barcode Reader Honeywell Voyager 1250G	12
11	T & G Smart Card Reader Spectra/ Hid	12
12	Traffic light (TMS & HTMS)	12
13	IR Barrier Safety (TMS & HTMS)	12
14	Manual Booth Controller	12
15	10 KVA Online UPS With 30 Mins Backup	2
16	Lane Networking For 8 Semi-Automatic	2
17	Server Rackvalrackmoducab Wan	2
18	Admin/LSDU Workstation Lenovo	4
19	Cashu Up/Audit Workstation Lenovo	4
20	POS T & G Smart Card Reader spectra	2
21	Thermal Receipt Printer Epson Tm-T88 IV	2
22	Online UPS 6 Kva with 30 Mins Backup	2
	Control Room	
1	Microsoft SQL Server 2012 Standard	2
2	Windows Server 2012 Standard Edition	2

S. No.	Item Description	Qty.
3	Semi-Automatic Lane Software	12
4	Semi-Automatic Plaza Software with Admin	2
5	TMS Server (TMS & HTMS)	2
6	Cabling Toll Lane Equipment	12

8.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 8.2: List of Vehicles

S. No.	Vehicle Type	Toll Plaza 1	Toll Plaza 2
1	Patrol Vehicle	1 No	1 No
2	Ambulance	1 No.	1 No.
3	Crane	-	1No

Toll Plaza -1

Km. 19+030

Km. 19+030

Toll Plaza -2

Km. 43+700

Km. 43+700

Figure 8.1: Representative photos of Toll Plaza

CHAPTER 9. SCHEDULE OF ANNUITY PAYMENTS

9.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model in which Authority makes payment of 40% of the Bid Project cost during construction period based on progress milestones set forth in Concession Agreement. Payment of the balance 60% of the Bid Project Cost is made in form of bi-annual annuities with interest during the operational phase of concession.

In this HAM model, as per Cl. 27.5 Lump sum payment is given in four installments during the construction phase as below.

Table 9.1: Lump Sum Payment

Installment No	Amount in Rs. (Crores)	% Progress during construction
First	17.594	25
Second	17.594	50
Third	17.594	75
Fourth	17.594	On COD

9.2 Schedule of Annuity Payments

As per 27.1, the concessionaire upon achieving COD, Authority agrees to pay Rs. 19.62crores as per schedule-M.

Table 9.2: Schedule of Annuity Payments

S No.	Particulars	Annuity Due Date	Payment Paid on
1	1st Annuity	28.03.2019	28-Mar-19
2	2nd Annuity	29.09.2019	18-Dec-19
3	3rd Annuity	28.03.2020	29-Mar-20
4	4th Annuity	29.09.2020	19-Nov-20
5	5th Annuity	28.03.2021	
6	6th Annuity	29.09.2021	
7	7th Annuity	28.03.2022	
8	8th Annuity	29.09.2022	
9	9th Annuity	28.03.2023	
10	10th Annuity	29.09.2023	
11	11th Annuity	28.03.2024	
12	12th Annuity	29.09.2024	
13	13th Annuity	28.03.2025	
14	14th Annuity	29.09.2025	
15	15th Annuity	28.03.2026	
16	16th Annuity	29.09.2026	

CHAPTER 10. OPERATION AND MAINTENANCE

10.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project Highways by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines.

10.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual Inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz. pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

10.3 Operations

10.3.1 Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

i. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
ii. carrying out preventive and periodic maintenance of the Project road;
iii. undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
iv. Undertaking major maintenance such as resurfacing of pavements, repairs to structures.
v. Functioning of the lighting system;
vi. Functioning of the Patrolling System

vii. Functioning of rescue and medical aid services
viii. Ambulance as and when required
ix. Functioning of the Project Facilities
x. Administrative, Operational and Maintenance Base Camp
xi. Truck Lay byes
xii. Pickup Bus stops / Bus Bays
xiii. protection of the environment and provision of equipment and materials therefor;
xiv. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
xv. complying with Safety Requirements in accordance with Article 18.

10.4 Operation of Toll Plaza

One lane in each direction is currently under operational and the extra wide lane is opened only for wide vehicles. The tolling is manned by two people per direction per shift with a day having two shifts. Toll Manager takes care of the daily operation and carries out the task of patrolling on bike. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account.

10.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

i. Preventive Maintenance
ii. Routine Maintenance
iii. Periodic Maintenance
iv. Special repairs

10.5.1 Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

10.5.2 Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

10.5.3 Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

However, as per Schedule M, cl.3.3.7 periodic maintenance of BC shall be laid as required and at least once in six years from COD and in the last year of concession period.
The details of periodic maintenance schedule are given below.

Table 10.1: Schedule and status of for Major Maintenance

S. No.	Major Maintenance	Schedule	Status at site
1	1st Periodic Maintenance	2025	Planned to execute

10.5.4 Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

10.6 Review of Test Reports

Bump Integrator Test:
Maintenance of road is dependent on several factors, one of which is the condition of the pavement surface. Treatment can be suggested based on the condition of surface of road. As such Roughness is the measurement of riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness.

The concessionaire shall measure the road roughness at least twice in every year. Accordingly, the BI test was conducted in August 2020. As per Schedule K during the maintenance period, laying of the renewal coat shall be initiated if the stretch exceeds 2500mm/Km. The values obtained from the test report are verified and found within the above said limits. Hence no renewal coat is required.

Further it is to be noted that Concessionaire shall handover the project with riding quality with acceptable roughness value 2000mm/Km.

Benkelman Beam Deflection (BBD):
The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

As per Schedule K, BBD tests shall be conducted every year soon after rainy season. Deflection exceeds 1mm, a bituminous overlay shall be provided to bring it back to 0.6mm. DBL has conducted BBD test in Feb 2020 and deflection not exceeded 1mm. Hence overlay is not required.

Also a mandatory strengthening course shall be provided over the period 5th/6th years after COD. Moreover, the deflection assessed by BBD test at the end of the concession period shall not exceed 1mm.

Environmental Quality Monitoring
In Feb 2020, Concessionaire has conducted Ambient air quality test, Noise quality test, Water quality test and soil quality test in accordance with Schedule L. The values are within the permissible limits.

10.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 4.**

Table 10.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.344	0.341		1.32	2.01
2021	0.354	0.351		1.36	2.07
2022	0.365	0.362		1.40	2.13
2023	0.376	0.372		1.44	2.19
2024	0.387	0.384	19.23	1.49	21.49
2025	0.399	0.395	19.76	1.53	22.09
2026	0.411	0.407		1.58	2.40
2027	0.210	0.208		0.81	1.22
Total	**2.85**	**2.82**	**38.99**	**10.94**	**55.59**

CHAPTER 11. REVIEW OF CONCESSION AGREEMENT

11.1 General: Scope of Project (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project Highway on the Site set forth in schedule B and C and in conformity with the Specifications and Standards (Schedule D) and Schedule L;
- operation and maintenance of the Project Highway in accordance with the provisions of this Agreement
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental

11.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5.**

11.3 Conditions precedent (Article 4):

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule A
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

11.3.1 Performance Security (Article 9):

- The Concessionaire shall submit the Performance security to the Authority within 120 days from the date of the Agreement,
- The Performance security shall remain in force throughout the Construction period
- Performance Security shall be released on Commercial Operation Date.

11.3.2 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire.

11.4 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA. Copy of the provisional certificate is provided at **Annexure 6.**

11.5 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

11.6 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

11.7 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the KRDCL are provided at **Annexure 8**.

11.8 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials

11.9 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

11.10 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the

Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

11.11 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

11.12 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.

- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

11.13 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

11.14 Annuity (Article 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule M of the CA the sum of Rs 19.62Crores.

11.15 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

11.16 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 12. INSURANCE

12.1 Details of Insurance:

As per clause 32.1 of the CA, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Copies of insurance are provided at **Annexure7.**

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 12.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period	
			From	To
Civil Engineering Complete Risk	National Insurance Company Limited	321300441910002005	27.03.2020	26.03.2021

CHAPTER 13. CONCLUSION

13.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

13.2 Pavement Condition

The Pavement condition for the overall project is good. RCC drains are constructed in Built up locations and earthen drains in rural locations which facilitates, effective drainage system along the project road. Shoulder condition is fair.

13.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are being cleared during regular maintenance period.

13.4 Project Facilities

Two Toll Plazas are constructed one at Km.19+030 & the other Km. 43+700. Bus bays are in fair condition. Medical Aid posts found functional. Highway lighting is provided at toll plaza locations and the same is found functional.

13.5 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

13.6 Maintenance

A dedicated team is appointed for routine maintenance works and working effectively. Major maintenance (MM) /Periodic maintenance was carried out recently and next MM is scheduled in 2025.

13.7 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road smooth and safe.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000								G		P	F	G	LD	PF	
1+000	1+650								G		P	F	G	LD	PF	
1+650	2+000								G		P+E	F	G	ULD	F	
2+000	3+000								G		P+E	F	G	ULD	PF	
3+000	4+000								G		P+E	F	G	ULD	F	
4+000	5+000								G		P+E	F	G	ULD	F	
5+000	6+000								G		P+E	F	G	ULD	PF	
6+000	7+000								G		P+E	F	G	ULD	F	
7+000	8+000								G		P+E	F	G	ULD	PF	
8+000	8+500								G		P+E	F	G	ULD	F	
8+500	9+000								G		P	F	G	LD	F	
9+000	10+000								G		P+E	F	G	ULD	F	
10+000	11+000								G		P+E	F	G	ULD	PF	
11+000	12+000								G		P+E	F	G	ULD	PF	
12+000	13+192								G		P+E	F	G	ULD	PF	
13+192	14+000								G		P	F	G	LD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
14+000	15+000								G		P+E	F	G	ULD	F	
15+000	16+000								G		P+E	F	G	ULD	PF	
16+000	16+650								G		P+E	F	G	ULD	F	
16+650	17+400								G		P	F	G	LD	PF	
17+400	18+400								G		P+E	F	G	ULD	F	
18+400	19+800								G		P+E	F	G	ULD	F	
19+800	21+000								G		P	F	G	LD	PF	
21+000	22+000								G		P	F	G	LD	PF	
22+000	22+500								G		P	F	G	LD	F	
22+500	23+000								G		P+E	F	G	ULD	F	
23+000	24+000								G		P+E	F	G	ULD	PF	
24+000	25+000								G		P+E	F	G	ULD	F	
25+000	26+100								G		P+E	F	G	ULD	F	
26+100	26+800								G		P	F	G	LD	F	
26+800	28+000								G		P+E	F	G	ULD	F	
28+000	29+000								G		P+E	F	G	ULD	PF	
29+000	30+000								G		P+E	F	G	ULD	F	
30+000	31+000								G		P+E	F	G	ULD	F	
31+000	31+700								G		P+E	F	G	ULD	F	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
31+700	32+700								G		P	F	G	LD	F	
32+700	34+000								G		P+E	F	G	ULD	F	
34+000	35+000								G		P+E	F	G	ULD	F	
35+000	36+000								G		P+E	F	G	ULD	PF	
36+000	37+000								G		P+E	F	G	ULD	F	
37+000	38+000								G		P+E	F	G	ULD	PF	
38+000	39+000								G		P+E	F	G	ULD	F	
39+000	40+000								G		P+E	F	G	ULD	PF	
40+000	41+000								G		P+E	F	G	ULD	F	
41+000	42+000								G		P+E	F	G	ULD	F	
42+000	43+000								G		P+E	F	G	ULD	F	
43+000	44+000								G		P+E	F	G	ULD	PF	
44+000	45+000								G		P+E	F	G	ULD	F	
45+000	46+000								G		P+E	F	G	ULD	F	
46+000	47+000								G		P+E	F	G	ULD	F	
47+000	48+000								G		P+E	F	G	ULD	PF	
48+000	49+400								G		P+E	F	G	ULD	F	
49+400	51+200								G		P	F	G	LD	F	
51+200	52+000								G		P+E	F	G	ULD	PF	

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
52+000	53+000								G		P+E	F	G	ULD	F	
53+000	54+000								G		P+E	F	G	ULD	F	
54+000	55+000								G		P+E	F	G	ULD	F	
55+000	56+401								G		P+E	F	G	ULD	PF	

Annexure 2: Condition of Structures

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
1	12+270	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Vegetation observed
2	12+450	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
3	14+608	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
4	27+399	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	44+339	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
6	44+903	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
7	49+256	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
8	51+376	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
9	52+422	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
10	52+422	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
11	53+166	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good

Annexure 3: Condition of Culverts

Condition of Box/slab Culverts

S. No	Chainage (Km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	3+054	Good	Good	Fair	Fair	Fair
2	5+225 (Extra)	Good	Good	Fair	Fair	Fair
3	6+104	Good	Good	Fair	Fair	Fair
4	7+640	Good	Good	Fair	Fair	Fair
5	12+791	Good	Good	Fair	Fair	Fair
6	12+924	Good	Good	Fair	Fair	Fair
7	23+798	Good	Good	Fair	Fair	Fair
8	25+639	Good	Good	Fair	Fair	Fair
9	26+047	Good	Good	Fair	Fair	Fair
10	26+942	Good	Good	Fair	Fair	Fair
11	28+198 (Pipe to Box)	Good	Good	Fair	Fair	Fair
12	29+342	Good	Good	Fair	Fair	Fair
13	32+280	Good	Good	Fair	Fair	Fair
14	32+463	Good	Good	Fair	Fair	Fair
15	33+418	Good	Good	Fair	Fair	Fair
16	39+165	Good	Good	Fair	Fair	Fair
17	48+514	Good	Good	Fair	Fair	Fair
18	50+775	Good	Good	Fair	Fair	Fair

Condition of Hume Pipe Culverts

S. No	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+033	Good	Fair	Fair	Fair
2	0+037	Good	Fair	Fair	Fair
3	2+122	Good	Fair	Fair	Fair
4	2+520	Good	Fair	Fair	Fair
5	3+268	Good	Fair	Fair	Fair
6	3+718	Good	Fair	Fair	Fair
7	4+348	Good	Fair	Fair	Fair
8	4+575	Good	Fair	Fair	Fair
9	6+333	Good	Fair	Fair	Fair
10	6+690	Good	Fair	Fair	Fair
11	6+989	Good	Fair	Fair	Fair
12	8+471	Good	Fair	Fair	Fair
13	8+923	Good	Fair	Fair	Fair
14	9+143	Good	Fair	Fair	Fair
15	9+807	Good	Fair	Fair	Fair
16	10+191	Good	Fair	Fair	Fair
17	10+522	Good	Fair	Fair	Fair
18	10+960	Good	Fair	Fair	Fair
19	11+220	Good	Fair	Fair	Fair
20	11+485	Good	Fair	Fair	Fair
21	11+651 (Extra)	Good	Fair	Fair	Fair

S. No	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
22	11+703	Good	Fair	Fair	Fair
23	11+960	Good	Fair	Fair	Fair
24	12+170	Good	Fair	Fair	Fair
25	12+675	Good	Fair	Fair	Fair
26	13+063	Good	Fair	Fair	Fair
27	13+195	Good	Fair	Fair	Fair
28	13+912	Good	Fair	Fair	Fair
29	14+070	Good	Fair	Fair	Fair
30	14+235	Good	Fair	Fair	Fair
31	15+683	Good	Fair	Fair	Fair
32	16+163	Good	Fair	Fair	Fair
33	16+500	Good	Fair	Fair	Fair
34	16+565	Good	Fair	Fair	Fair
35	16+845	Good	Fair	Fair	Fair
36	17+087	Good	Fair	Fair	Fair
37	17+319	Good	Fair	Fair	Fair
38	17+965	Good	Fair	Fair	Fair
39	18+410	Good	Fair	Fair	Fair
40	18+656	Good	Fair	Fair	Fair
41	19+306	Good	Fair	Fair	Fair
42	20+728	Good	Fair	Fair	Fair
43	22+040	Good	Fair	Fair	Fair
44	22+666	Good	Fair	Fair	Fair
45	22+976	Good	Fair	Fair	Fair
46	24+850	Good	Fair	Fair	Fair
47	26+168	Good	Fair	Fair	Fair
48	27+016	Good	Good	Fair	Good
49	27+219	Good	Fair	Fair	Fair
50	28+392	Good	Good	Fair	Fair
51	28+693	Good	Good	Fair	Fair
52	29+533	Good	Good	Fair	Fair
53	35+625	Good	Good	Fair	Fair
54	36+264	Good	Good	Fair	Fair
55	36+339	Good	Good	Fair	Fair
56	37+754	Good	Good	Fair	Fair
57	40+996	Good	Good	Fair	Fair
58	41+198	Good	Good	Fair	Fair
59	41+448	Good	Good	Fair	Fair
60	41+655	Good	Good	Fair	Fair
61	42+110	Good	Good	Fair	Fair
62	42+695	Good	Good	Fair	Fair
63	45+058	Good	Good	Fair	Fair
64	45+219	Good	Good	Fair	Fair
65	45+863	Good	Good	Fair	Fair

S. No	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
66	46+929	Good	Good	Fair	Fair
67	47+184	Good	Good	Fair	Fair
68	48+040	Good	Good	Fair	Fair
69	48+890	Good	Good	Fair	Fair
70	49+830	Good	Good	Fair	Fair
71	50+050	Good	Good	Fair	Fair
72	50+636	Good	Good	Fair	Fair
73	51+110	Good	Good	Fair	Fair
74	51+983	Good	Good	Fair	Fair
75	55+041	Good	Good	Fair	Fair
76	55+375	Good	Good	Fair	Fair

Annexure 4: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km.	56.401	12	4	350	9,47,537	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	9.1	24	4	350	3,05,760	04 nos of Labour
3	Watering in Median Plants	Once in Week	Km.	9.1	52	1	1939	9,17,535	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Km.	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Km.	9.1	12	0	21000	-	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Km.	28.2005	2	5	350	98,702	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	94	2	2	650	2,44,400	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km.	56.401	4	2	350	1,57,923	02 nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	22	6	2	350	92,400	2 nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	2.00	6	60	350	2,52,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	11	2	2	350	15,400	02 nos of Labour for removal of vegetation/Structure

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
								30,31,657	
	EQUIPMENT SUPPLY								
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12	1	10000	10,000	Considered Rs 10,000/- per vehice including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	0.0	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water Tanker Cap 6 KL for RoW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	0.0	12	0	12000	-	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos.		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year) including maintenance
7	Bikes	Monthly	Nos.	0.0	12	0	2500	-	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	2	5000	1,20,000	5000/month
9	Toll plaza AMC	Yearly	Nos.		12	2	5000	1,20,000	5000/month
								2,50,000	
1	Patrolling vehicle	Monthly	Nos.	12		1	10000	10000	Considered Rs 10,000/- per vehice including maintenance
2	Ambulance	Monthly	Nos.	12		1	10000	10000	Considered Rs 10,000/- per vehice including maintenance
3	Tow away trucks and	Monthly	Nos.	12		2	40000	80000	Considered Rs 40,000/- per vehice

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	Crane								including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								1,60,000	
								34,41,657.00	

Incidental cost for 1 year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	4343	516	22,40,988	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	1128	168	1,89,504	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	846.015	225	5,71,060	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considered 500 nos)
5	MBCB	Monthly	RMT.			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	56.401	4	14	2250	1,26,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	RMT.	0		0.00	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**34,07,552**	

Operational Expenses

S. No.	Particulars	Amount
1	Man Power	₹ 88,80,000
2	Fuel for Generator & Vehicles	₹ 22,44,000
3	Electricity	₹ 19,80,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 31,467
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 1,32,20,467**

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	30-01-2021					
Major Maintenance - Highway	01-04-2024	17,54,75,041	3.20	3.0%	19,23,20,645	19.23
Major Maintenance - Highway	01-04-2025	17,54,75,041	4.20	3.0%	19,75,84,896	19.76
				Total	₹ 38,99,05,542	38.99

Major Maintenance BOQ

S. No	Description	Unit	Quantity	Rate	Amount	Quantity	Rate	Amount
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm.	5,64,010.00	14.00	78,96,140	5,64,010.00	14.00	78,96,140
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum.	22,560.40	7,480.00	16,87,51,792	22,560.40	7,480.00	16,87,51,792
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum.	22,560.40	6,800.00	15,34,10,720	22,560.40	6,800.00	15,34,10,720

4	Micro surfacing	Sqm.	-	160.00		-	160.00	
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS.	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm.	-	130.00		-	130.00	
	Total				**33,00,58,652**			**33,00,58,652**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	RMT.	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm.	13,160.23	516.00	67,90,680	13,160.23	516.00	67,90,680
3	Road Studs	Nos.	18,801.00	750.00	1,41,00,750	18,801.00	750.00	1,41,00,750
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**2,08,91,430**		-	**2,08,91,430**
	Grand Total				**35,09,50,082**			**35,09,50,082**

Annexure 5: Letter of Award

KARNATAKA ROAD DEVELOPMENT CORPORATION LTD.

KRDCL/WCP5/ LOA /2015-16 -1908 Date: 11-09-2015

To
M/s Dilip Buildcon Limited,
Plot No. 5, Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal (M.P.) - 462 016

Kind Attn: Mr. Dilip Suryavanshi
Email: db@dilipbuildcon.co.in

LETTER OF AWARD

Sir,

Sub: "Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hirekerur – Ranibennur in the State of Karnataka on DBFOMT Annuity Basis (**WCP-5**)"– Letter of Award (LoA)

Ref.: (i) RFP issued on 10th April 2015
(ii) Your bid submitted on June17th, 2015

This is to notify that your bid submitted for the captioned project (the "Project") for a semi-annual annuity quote of Rs19,62,00,000 (Rupees Nineteen Crore and Sixty Two Lakh) is hereby accepted by the Government of Karnataka by declaring you as the "Selected Bidder". The concession period is 10 (ten) years including construction period of 24 (twenty four) months.

1. The semi-annual annuity quoted by you shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA).

2. Lumpsum Payment of Rs 70,37,60,000 (Rupees Seventy Crore, Thirty Seven Lakh and Sixty Thousand) shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA) in four equal instalments.

3. In accordance with the clause 3.3.2 of the Project RFP Document, you are hereby requested to confirm your acceptance of this Letter of Award within 7 days of its receipt. Thereafter, pursuant to clause 1.3 of the Project RFP Document, you are required to execute the Concession Agreement within 45 days from the issue of LoA.

4. You shall promote and incorporate the Concessionaire as a limited liability company under the Companies Act 1956/2013 as applicable, as the entity which shall undertake and perform the obligations and exercise rights of the Bidder under the LoA, including the obligation to enter into the Concession Agreement pursuant to the LoA for executing the Project.

Annexure 6: Provisional Certificate

Intercontinental Consultants and Technocrats Pvt. Ltd.

FIDIC Affiliate Member

ICT:761:TPV: 2384

30th March 2018

The Managing Director,
Karnataka Road Development Corporation Ltd.
1st Floor,
16/J, Miller Tank Bed Area,
Thimmiah Road Cross,
Bengaluru – 560 052

Mr. Anil Kumar KK, Authorized Signatory
DBL Hirekerur Ranibennur Tollways
Limited (DBHHRTL) Plot No.5,
Inside Govind Narayan Singh Gate
Chuna Bhatti, Kolar Road
Bhopal – 462 016, MP

Sub: Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hirekerur-Ranibennur in the State of Karnataka on DBFOMT Annuity Basis – **Issue of Provisional Completion Certificate under Article 14 of the Concession Agreement – Reg.**

Dear Sir,

1. Ref: 1. Concessionaire letter no. DHRTL/KRDCL/WCP-05/2017-18/473 dt. 15.02.2018.
   2. Concessionaire letter no. DHRTL/KRDCL/WCP-05/2017-18/483 dt. 21.02.2018.
   3. IE letter no. ICT/761/TL/2018/KRDCL/108 dt.24.02.2018.
   4. MD, KRDCL letter no. KRDCL/cofinance/2017-18/3509 dt. 27.03.2018.

2. Pursuant to Article – 14 of Concession Agreement M/s. DBL Hirekerur Ranebennur Tollways Limited "the Concessionaire" has informed vide letters under Ref. – 1 & 2 that they have completed 50.071 km of the project length (length handed over to the Concessionaire within 8 months in accordance with First Supplementary Agreement signed on 29th September 2016) and have requested for issuance of Provisional Certificate (Copies of letters enclosed as Annexure-I & IA). Details of completed length are as follows:

Sl.No.	Description	From Chainage	To Chainage	Length (Km)
1	Stretch - I	1+720	11+200	9.480
2	Stretch - II	14+300	18+880	4.580
3	Stretch - III	19+220	20+080	0.860
4	Stretch - IV	20+850	43+450	22.600
5	Stretch - V	43+850	56+401	12.551
			Total Length	**50.071 Km**
			Total Project Length = 55.693 Km	

Contd...2...

Innovative, Creative & Technologically Sustainable Infrastructure Solutions

CIN : U74899DL1987PTC026913

Corporate Office : A-8, Green Park, New Delhi-110 016, INDIA | Telephone : +91-11-40863000 | Fax : +91-11-26855252 | Email : business@ictonline.com | Website : http://www.ictonline.com

DNV-GL

Intercontinental Consultants and Technocrats Pvt. Ltd.

FIDIC Affiliate Member

- 2 -

3. The work in balance sections which could not be completed due to delay in handover of land within 240 days of Appointed Date are as follows:

Sl.No.	From Chainage	To Chainage	Length (Km)	Remarks
1	0+000	1+720	1.720	Hirekerur Town. Constraints of Utilities (Electrical Poles and Water Pipelines)
2	11+200	14+300	2.390	Chikkerur Bypass. Land Acquisition is under progress.
3	18+880	19+220	0.340	Toll Plaza-I. Land Acquisition is under progress.
4	20+080	20+850	0.770	Hamsbhavi Town R & R issues. ROW not available.
5	43+450	43+850	0.400	Toll Plaza-II. Land Acquisition is under progress.
		Total Length	**5.620 Km**	

4. Following reports and successful test results have already been attached with IE letter dt. 24.02.2018 addressed to the Managing Director, KRDCL, Bengaluru, with copies to all concerned:
   (a) Road Safety Review Reports.
   (b) Schedule 'I' Test results.
   (c) Certified Check List for ensuring required safety and reliability for commercial operation.

5. Except the stretches mentioned in para 3 above, all other parts of the Project Highway can be safely and reliably placed under commercial operations and fulfill the obligation of Article – 15.

6. Pursuant to Clause 14.3 of the Concession Agreement, the Concessionaire has completed 50.071 Km length of the Project Highway in accordance with and as specified in Schedule-B and Schedule-C and in conformity with the specifications and standards set forth in Schedule-D of the Concession Agreement. Accordingly, pursuant to Clause 14.3 of the Concession Agreement, the Provisional Certificate of the above work covering a length of 50.071 Km w.e.f. 24th February 2018 is to be issued to the Concessionaire.

7. After compliances of the above and after concurrence of the Authority vide letter nc.3509 dt. 27.03.2018 mentioned under reference 4 above, the Independent Engineer is pleased to issue the Provisional Certificate w.e.f. 24th February 2018 for 50.071 km length of Project Highway out of a total length of 55.693 km in accordance with Clause 14.3 of the Concession Agreement. Provisional Certificate is attached.

Contd....3.....

Innovative, Creative & Technologically Sustainable Infrastructure Solutions

CIN : U74899DL1987PTC026913

Corporate Office : A-8, Green Park, New Delhi-110 016, INDIA | Telephone : +91-11-40863000 | Fax : +91-11-26855252 | Email : business@ictonline.com | Website : http://www.ictonline.com

Annexure 7: Insurance

पॉलिसी अनुसूची/Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910002005

जारीकर्ता कार्यालय/Issuing Office

कार्यालय कोड /Office Code: 321300

कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code: 23 , Madhya Pradesh
GSTIN: 23AAACN0667E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355

विक्रय चैनल कोड/Sales Channel Code: 91035500000001

नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810

सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL HIREKERUR RANIBENNUR TOLLWAYS LTD

पता/ Address: NO-77, BEHIND RMP QUARTERS,5TH STAGE, KUVEMPUNAGARA, MYSORE-570023, City: MYSORE, District: MYSORE, State: KARNATAKA, PIN: 570023.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881848

फोन /Phone:

ई-मेल /E-Mail:

पैन /PAN: AAFCD5001L

पॉलिसी: 27/03/2020 को 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 20,50,830.00	कवर नोट संख्या और तारीख/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 3,69,149.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तारीख/Proposal Number and Date	8800200327087095 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनःप्राप्त योग्य मुद्रांक शुल्क /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तारीख/Receipt Number and Date	32130081191000766 Dt. 27/03/2020
कुल /Total Amount	₹ 24,19,979.00	पिछली पॉलिसी संख्या और समाप्ती तारीख/ Previous Policy Number and Expiry Date	NA

(Rupees Twenty Four Lakh Nineteen Thousand Nine Hundred Seventy Nine Only.)
Location: State Highway Hirekerur - Ranibennur, Karnataka Haveri, Haveri - District Others, 581101.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	1,94,87,35,000.00	1,00,000.00
2	Roads	Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	10,25,65,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / **Clauses, Endorsements and Warranties Applicable:**Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hirekerur - Ranibennur in the state of Karnataka on DBFOMT Annuity Basis (WCP-5).

Name of the co insured under the policy is Dilip Buildcon Ltd. & KRDCL.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause.

Printed on 27/03/2020 by ID: 75159

Page no: 1

INSURANCE

Scanned with CamScanner

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

WC- Hirekerur

ADJUSTMENT VOUCHER

Issuing Office	: BHOPAL DO-1 (450100)
Address	: C.D.U. - I , BLOCK NO 3, IIND FLOOR, PARYAVAS BHAWAN, ARERA HILLS, BHOPAL,462011 BHOPAL
Phone	: 07554203271
Email	: nia.450100@newindia.co.in
Fax	: 07554203274
Collection Number	: 45010081190000007523
Collection Date	: 12/02/2020
Business Source Code	: 1D5140053
PAN No of Payer	: AACCD6124B

Received with thanks from M/S.DILIP BUILDCON LTD .

The amount received/Adjusted is towards -

Policy No.	A/C Description	Amount₹	A/C Code	Sub A/C Code
45010036190100000053	Cash Deposit Account-450100	6545.00	5076.450100	CD0000941977

Total = ₹ 19635.00

Your Payment/Adjustment Details are as under -

Mode	Amount ₹	Cheque No.	Cheque Date	Drawee Bank	Drawee Branch	Reference No.	Scroll/BG/A PD Balance
Advance Premium Deposit	6545.00	N.A.	N.A.	N.A.	N.A.	4501001910015530	2897771.00

Total = ₹ 19635.00

Utilization details of the Collected Amount :

Premium	GST	Stamp Duty	Excess Amount
5547.00	998.00	0.00	0

Sl no.	Agency Code	Agency Name	Department Code
1.	NA .	GLOBAL INSURANCE BROKERS PRIVATE. LTD.	36

For The New India Assurance Company Limited

Date of Issue: 12/02/2020

Cashier's Initial

Authorized Signatory

Note -

1.Please note the Policy Number, Collection Number and date in all future correspondence. .

2.NIA shall not be liable for any claim arising out of sales made during the period between the due date and date of payment of the installment if the premium paid has been exhausted by turnover declarations/if there is insufficient premium balance.

Tax Invoice No : 45010019P0009348

IRDA Registration Number: 190

Signature valid

Policy No. : 45010036190100000053 Document generated by 37225 at 12/02/2020 16:54:57 Hours.

Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Page 1 of 1

Annexure 8: Change of Scope

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Hirekerur-Ranibennur in the State of Karnataka on DBFOMT Annuity Basis WCP-5	
Authority	: Karnataka Road Development Corporation Limited
Independent Engineer	: Intercontinental Consultants and Technocrats Pvt. Ltd
Concessionaire	: DBL Hirekerur Ranibennur Tollways Limited

Sr. No.	Description	Unit	As per contract Scope	Completed	Balance		Remarks
					To be Completed	To be De-Scope	
1	Hamsabhavi Town (Km. 19+800 to Km. 22+500)	Km	2.7	1.98	0	0.72	Excluding Drain,Footpath, Kerb,Electrical pole, Stud, busbay etc.
2	Change in Cross section of Hirekerur Town (Km. 0+000 to Km. 1+650)	Km	1.65	1.65	0	0	
3	Overlay Proposal of Hirekerur Town (Km. 0+000 to Km. 1+650)	Km	1.65	1.65	0	0	
4	Electrical Pole						
	(I) For fixing in Median	No's	43	0	0	43	
	(II) For fixing in Footpath	No's	217	188	0	29	
5	Bus bay	No's	22	8	14	0	
6	Bus shelter	No's	22	7	14	1	
7	RCC Drain	Rmt	18520	15170	1740	1610	Revised Scope as per Authority letter 997, 16.07.2017
8	Drain Side Kerb	Rmt	18200	15225	1125	1850	
9	Footpath	Rmt	18200	14715	0	3485	
10	Road Stud	No's	1817	1244	0	573	
11	Metal Beam Crash Barrier	Rmt	7200	6800	400	0	
12	Raised Pedestrain Crossing	No's	24	21	1	2	
13	Ground Water Recharge Pits	No's	12	10	2	0	
	Grand Total						

SHREM FINANCIAL PRIVATE LIMITED

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Mundargi-Hadagali-Harapanahalli in the State of Karnataka on DBFOMT Hybrid Annuity Basis

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Mundargi-Hadagali-Harapanahalli in the State of Karnataka on DBFOMT Hybrid Annuity Basis

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Mundargi-Harapanahalli	01	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **DBL MUNDARGI HARPANAHALLI TOLLWAYS LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

DBL Mundargi Harpanahalli Tollways Limited (herein after referred to as the "Concessionaire") had augmented the existing road from Mundargi-Hadagali (SH-45) and Hadagali-Harpannahalli (SH-47) in the state of Karnataka, in accordance with the provisions of the Concession Agreement (CA) executed with Karnataka Road Development Corporation Limited (herein after referred to as the "**KRDCL**") on 16th December 2015.

The Project Highway comprises of two state highways viz SH-45 and SH-47 and starts from Mundargi and ends at Hadagali under link 27C (Km. 0+000 to Km. 24+885 on SH-45) and changes its direction from Hoovina Hadagali towards Harpanahalli under link 27D (Km. 0+000 to Km. 26+321 on SH-47). The Project stretch passes through Gadag, Bellary and Davangere District and mainly passes through Mundargi, Korlahalli, Kaganor, Hoovina, Hadagali, Nagathi, Basapura, Kulahalli and Harapanahalli. Project location map is provided at **Figure 1.1.**

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL Mundargi Harpanahalli Tollways Limited vide agreement dated 26th March 2018.

SHREM FINANCIAL Pvt. Ltd (SFPL). appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the annuity payments received and future schedule of annuity payments.

Figure 1.1: Project Location Map

1.2 Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Design, Build, Finance, operate and maintain and transfer (DBFOMT) of existing state highway from Mundargi-Hadagali-Harapanahalli in the state of Karnataka on DBFOMT Hybrid annuity basis.
2	Road Type	State Highway
3	Name of the Authority	KRDCL
4	Name of the Concessionaire	DBL Mundargi Harpanahalli Tollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	LOA	11.09.2015
7	Date of agreement	16.12.2015
8	Date of Supplementary Agreement I	29.09.2016
9	Date of Supplementary Agreement II	17.04.2018
10	Design Length as per Schedule I of CA	51.21 Kms.
11	Actual Length Constructed	51.21 Kms.
12	EPC Cost	Rs. 157.1 Cr.
13	Nature of contract	DBFMOT (Hybrid Annuity)
14	Toll collected by	Authority
15	Concession Period	10 years from Appointed Date
16	Appointed date	29.09.2016
17	Concession End date	28.09.2026
18	Construction Period	730 Days from Appointed Date
19	Schedule Completion Date	28.09.2018
20	Date of issuance of Provisional Certificate (Commercial Operation Date)	05.02.2018
21	Bonus on early completion	Applicable as per Cl.28.1
22	Annuity Amount	As per Cl.23.4 and Cl.23.6.3 of CA
23	Total Number of Annuities received as on Jan 2021	04
24	First Annuity Date	28.03.2019

1.3 Scope of Technical Consultancy Services

The scope of work includes providing Technical Due Diligence of the Project Highway and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report

- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per schedule B and Schedule C of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S. No.	Particulars	As per CA	COS*	As per Site
1.	Total Length	51.21 Kms.	----	51.21 Kms.
2.	Toll Plazas	2 Nos.		2 Nos.
3.	Bus Bays	14 Nos.	-8 Nos.	1 No*
4.	Bus Shelters	14 Nos.	-11 Nos.	2 Nos*
5.	Major Junction	10 Nos.		10Nos.
6.	Minor Junctions	20 Nos.		20Nos.
7.	Major Bridges	1 Nos.		1 Nos.
8.	Minor Bridges	11 Nos.		11 Nos.
9.	Box/Slab Culverts	19 Nos.		19 Nos.
10.	Pipe Culverts	65 Nos.		65 Nos.

* Due to land problem 5 no of bus bays and one no of bus shelter is not constructed.

2.2 Typical Cross Section (TCS) Schedule

During construction The Concessionaire has followed the Typical Cross Section schedule shown in the following figures below and TCS Schedule is tabulated and given below.

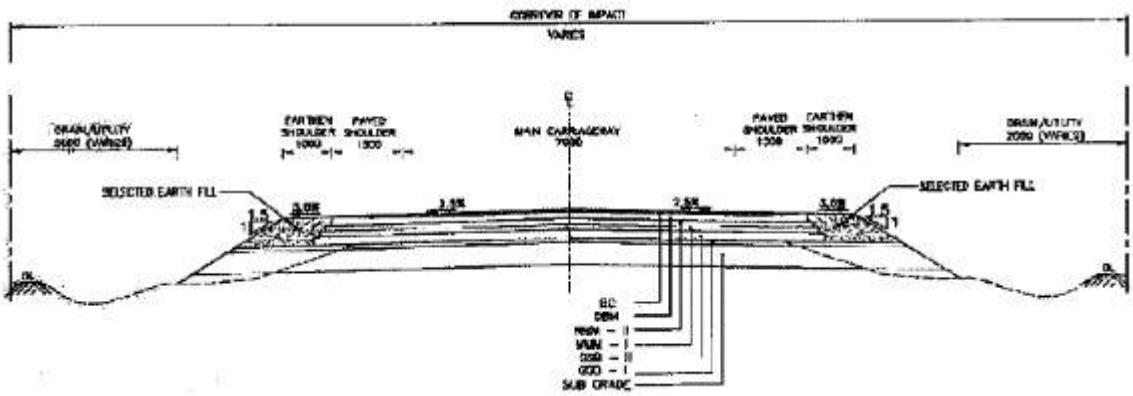

Figure 2.1: (TCS A) of Schedule of CA – Rural Cross Section with Paved Shoulder

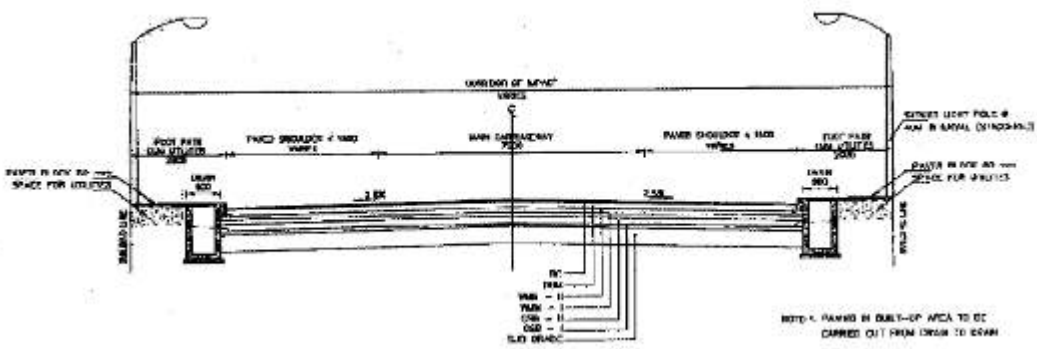

Figure 2.2: (TCS B) of Schedule of CA - 2 LANE Carriageway With Paved Shoulder In-built up Area

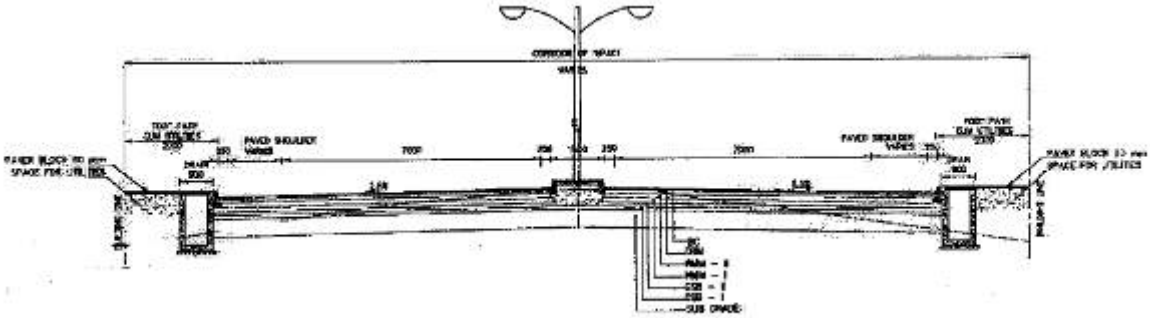

Figure 2.3: (TCS D) of Schedule of CA - 4 Lane Divided Carriageway in urban Area

S. No.	From	To	Length (Kms.)	TCS Type
Link 27 C Mundargi-Hadagali (SH-45)				
1	0.000	1.500	1.50	TCS D
2	1.500	10.000	8.50	TCS A
3	10.000	10.700	0.70	TCS B
4	10.700	22.900	12.20	TCS A
5	22.900	23.700	0.80	TCS B
6	23.700	24.885	1.19	TCS D
Link 27 C Hadagali-Harapanahalli (SH-47) (SH-45)				
7	0.000	0.500	0.50	TCS D
8	0.500	7.200	6.70	TCS A
9	7.200	8.000	0.80	TCS B
10	8.000	11.300	3.30	TCS A

S. No.	From	To	Length (Kms.)	TCS Type
11	11.300	11.900	0.60	TCS B
12	11.900	13.800	1.90	TCS A
13	13.800	14.200	0.40	TCS B
14	14.200	19.600	5.40	TCS A
15	19.600	20.200	0.60	TCS B
16	20.200	25.100	4.90	TCS A
17	25.100	26.321	1.22	TCS B

Table 2.2: TCS Schedule

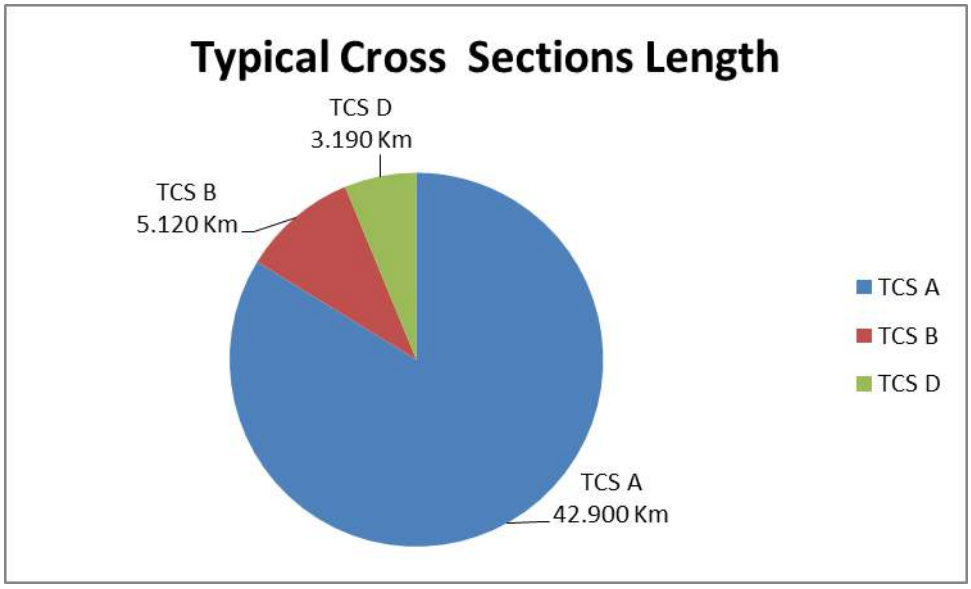

Figure 2.4: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriageway and to avoid accumulation of drainage from the Carriageway, side drains are constructed along the main carriageway on both flanks as specified in Schedule B of CA in strict adherence to the Standard Specifications set forth in Schedule D of CA.
- The Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drains are in open and rural areas.

2.4 Service Roads

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.5 Bypass

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of CA.

2.6 Intersections

As per provisions of Schedule B of the Concession Agreement 10 Major Junctions and 20 Minor Junctions are provided. Details are given below.

Table 2.3: List of Junctions

Chainage (Km.)	Junction Type	Revised Category	Side of Cross Road	Intersecting Road	Remarks
Link 27C Mundargi to Hadagali					
0+000	3-Arm	Major	RHS	SH-129	To Ramenahalli
0+030	4-Arm	Major	RHS	Town road	To Koppal
		Major	LHS	Existing SH-45	To Nagarahalli
0+850	3-Arm	Minor	LHS	Village Road	To Byalawadi
1+165	4-Arm	Major	RHS	Existing SH-45	To Mundargi
		Major	LHS	SH-23	To Shirol
5+150	4-Arm	Minor	RHS	Village Road	To Bidanal
		Minor	LHS	Village Road	To Bennihalli
5+675	4-Arm	Minor	RHS	Village Road	To Bidanal
		Minor	LHS	Existing SH-45	To Nagarahalli
11+235	4-Arm	Minor	RHS	Existing SH-45	To Mammigi Road (SH-47)
12+100	3-Arm	Minor	RHS	Village Road	To Madalagatti
13+850	3-Arm	Minor	LHS	Village Road	To Hakandi
19+260	3-Arm	Minor	RHS	Village Road	To Kotanakal
22+000	3-Arm	Minor	RHS	Village Road	To Nowli
23+280	4-Arm	Minor	RHS	Village Road	To Hoovina Hadagali Town
		Minor	LHS	Village Road	To Hoovina Hadagali Town
23+700	3-Arm	Minor	RHS	Village Road	To Hoovina Hadagali Town
23+920	3-Arm	Major	RHS	SH-40	To Hoovina Hadagali Town

Chainage (Km.)	Junction Type	Revised Category	Side of Cross Road	Intersecting Road	Remarks
		Major	RHS	SH-40	To Agarnur Road (SH-47)
24+885	3-Arm	Major	LHS	SH-40	To Hoovina Hadagali Town
		Major	RHS	SH-40	To Hoovina Hadagali Town
Link 27D Hadagali to Harapanahalli					
0+000	3-Arm	Minor	RHS	Village Road	To Hadagali
2+330	3-Arm	Minor	LHS	Village Road	To Devagondanahalli
4+470	3-Arm	Minor	RHS	Village Road	To Markonahalli
7+780	3-Arm	Minor	LHS	Village Road	To Sogi
		Minor	RHS	Local Road	To House
11+550	3-Arm	Minor	RHS	Village Road	To Mannera Masalavada
11+650	3-Arm	Minor	LHS	Village Road	To Bettada Malleshwara Temple
14+010	3-Arm	Minor	RHS	Village Road	To Madligeri
17+780	3-Arm	Minor	RHS	Village Road	To Bandri
18+400	3-Arm	Minor	LHS	Village Road	To Kanchikeri
19+900	3-Arm	Minor	LHS	Village Road	To Bagali
25+515	4-Arm	Major	RHS	Village Road	Sathur
		Major	LHS	Town Road	Harapanahalli Town Road
25+625	4-Arm	Major	RHS	SH-105	To Sathur
25+790	4-Arm	Major	RHS	SH-105	To Sathur
	4-Arm	Major	LHS	SH-105	To Harapnahalli Town road
26+000	3-Arm	Major	RHS	SH-25	To Haspet
26+321	3-Arm	Major	RHS	SH-25	To Shimoga
			LHS	SH-25	To Haspet

2.7 Grade Separated Structures and underpasses

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.8 Road Over Bridge

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.9 Summary of the Carriageway and Pavement Details

Table 2.4: Summary of Carriageway and PDetails

S. No.	Description	Flexible (Kms.)	Rigid (Kms.)
1.	Total Length of 2 lane (Flexible)	49.21	---
2.	Total Length 4 lane	2.000	---
3.	Total Length of the Project	51.21	---
	Type of Alignment		
1.	New Alignment	---	---
2.	Realignment	0.45	---
3.	Strengthening	---	---
4.	Reconstruction	50.76.	---
5.	Total Length of the Project	51.21	---

2.10 Summary of Bridges and Culverts

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.5: Summary of Structures

S. No	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1	3	5	3
2	Widening		4	31	6
3	Reconstruction		4	29	10
4	New				
5	Improvement				
	Total	**1**	**11**	**65**	**19**

Details of the condition survey carried out on Structures are provided at **ANNEXURE-2 & 3.**

2.11 Toll Plazas

- There are two Toll Plazas as per schedules. But only toll booths are constructed at toll plaza locations @ Km. 8+150 and @ Km. 23+800.
- Control room, Traffic aid post, quarters and medical aid post building are not constructed due to LA issue.
- Toll is being collected at tollbooths.

2.12 Bus shelters

As per provisions of Schedule C of CA bus shelters are provided at 14 locations. Details are provided below.

Table 2.6: Bus Shelters

S. No.	Chainage (km.)	Side
LINK 27 C Mundargi to Hadagahalli		
1.	3+800	RHS
2.	3+570	LHS
3.	4+700	RHS
4.	5+050	LHS
5.	9+920	RHS
6.	10+780	LHS
7.	22+950	RHS
8.	23+080	LHS
LINK 27 D Hadagahalli to Harpanahalli		
1.	2+250	LHS
2.	2+460	RHS
3.	4+800	LHS
4.	1+940	RHS
5.	17+880	LHS
6.	17+620	RHS

Km. 17+880

Figure 2.5: Representative Photograph of Bus Bay

2.13 Other Project Facilities Provided as per Schedule I of Concession Agreement

- Road side furniture: Sign Boards Kilometer stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of CA.
- Landscaping: Provided at Toll Plaza location and being maintained
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and is being maintained.
- Medical Aid Post: Provided at Toll Plaza location and is operational
- Highway Lighting: Highway lighting is provided at Toll Plaza and is functional.

CHAPTER 3. STATUS OF WORK AFTER PCOD

3.1 General

In accordance with Clause 14.3 of Concession Agreement, Provisional certificate was issued on 31th March 2018 for completed length of 45.43 Kms. out of a total length of 51.206 Kms. The details of completed length are given in the following table.

Table 3.1: Details of Completed Length

From (Km.)	To (Km.)	Side	Length (m)
Link 27C From Km. 00+000 to Km. 24+885			
1+230	8+000	BHS	6670
8+300	9+120	BHS	820
9+370	10+100	BHS	730
10+600	13+970	BHS	3370
14+210	14+590	BHS	380
14+710	16+530	BHS	1820
16+915	17+950	BHS	1035
18+330	23+180	BHS	4850
24+000	24+300	BHS	300
24+450	24+885	BHS	435
Link 27D From Km. 00+000 to Km. 26+321			
0+000	0+280	BHS	280
0+330	13+900	BHS	13570
14+040	19+880	BHS	5840
19+950	23+690	BHS	3740
23+710	23+800	BHS	90
24+100	25+500	BHS	1400
Total Length (Kms.)			**45.430**

3.2 Punch List

A Punch list is a list of tasks and items that need to be completed before construction and along with that only a Project can be considered, finished. Accordingly, two punch lists were given along with Provisional Certificate. Punch list-1, works delays attributable to concessionaire. The items are included in the list-I, shall be completed within 90 days from the issuance of Provisional certificate. Punch List-II balance works pending due to reasons attributable to authority.

The details of Punch List-I are given in the following table.

Table 3.2: Punch List-I

WCP-06 Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing state Highway Mundargi - Hadagali - Harpanahalli in The State of Karnataka on DBFOMT Annuity Basis (Link - 27C & 27D)			
Punch List - 1 For - PCOD (Link - 27C & 27D)			
Punch ID	**Proposal**	**Status of Main Structure**	**Balance/Rectification works**
Pl1/1	1 No of Box Culvert in 27C & 1 No of MNB in 27D	Completed	Protection works to be done
Pl1/2	Isolated locations in 27C & 27D	Completed	Cleaning of waterway and the structure, rectification of protection work, providing edge concrete for pitching and shoulder protection to be done for all structures
Pl1/3	1 No of MNB Link 27C(11+701)	Not Applicable	Maintenance of existing bridge to be done
Pl1/4	1 No of HPC in 27C, 4Nos of HPC in 27D and 2Nos of MNB in	Completed	Floor Apron to be done (BHS)
Pl1/5	I No of HPC in 27C	Completed	Drainage wall and protection wall (adjacent to Head wall) to be done
Pl1/6	I No of HPC in 27C	Completed	RHS Pipe collars to be matched with headwall, Protection to be done, LHS Cath pit walls to be constructed
Pl1/7	2 No of HPC in 27C	Completed	Honeycomb to be rectified
Pl1/8	3 Locations in 27C	Carriage way completed	Connecting RCC Drain & Wheel load Drain not covered at both ends
Pl1/9	8 mt, in 27C and 18 mt in 27D	Carriage way completed	RCC drain slab to be done
Pl1/10	2 Nos in 27D	Carriage way completed	Electrical pole foundation damaged, to be rectified
Pl1/11	6 locations in 27D	Carriage way completed	Street light pole cables exposed on footpath, to be rectified
Pl1/12	50 mt in 27D	Carriage way completed	Kerb at Toe to be provided
Pl1/13	14+320(LHS)	Not Applicable	Rehabilitation of borrow area, to be done

WCP-06 Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing state Highway Mundargi - Hadagali - Harpanahalli in The State of Karnataka on DBFOMT Annuity Basis (Link - 27C & 27D)			
Punch List - 1 For - PCOD (Link - 27C & 27D)			
Punch ID	**Proposal**	**Status of Main Structure**	**Balance/Rectification works**
Pl1/14	10 mt in 27C & 60 mt in 27D	Carriage way completed	Between BT edge to drain paving to be done
Pl1/15	2 locations - 17+010(LHS), 18+303(RHS)	Not Applicable	Filter media to be provided for ground water recharge pit/bore
Pl1/16	16+700(RHS)	Not Applicable	Re-use/Disposal of 20% safety stored scarified bitumen at basecamp
Pl1/17	3+636-27C Widening HPC	Completed	RHS Honey comb rectification & protection works to be done as per standards & approved drawings after clearance of land owner objection
Pl1/18	18+985-27C Widening HPC	Completed	BHS-300mm floor apron to be done after clearance of land owner objection
Pl1/19	21+861-27C Reconstruction of MNB	Completed	RHS-for of stone pitching & aprons on A1 side (1st span width) to be executed after clearance of land owner objection
Pl1/20	0+351-27D Reconstruction of MNB	Completed	LHS-Flexible apron and curtain wall to be done after clearance of water pipeline and Electric pole RHS-Flexible apron to be done after clearance of UGD line
Pl1/21	3+247-27D Reconstruction of Box culvert	Completed	LHS-Flexible apron to be constructed after clearance of land owner objection
Pl1/22	4+900 -27D Reconstruction of Box culvert	Completed	RHS-Protection works to be done after clearance of electric transformer and land owner objection LHS-Curtain wall construction to be done per drawing after clearance of land owner objection
Pl1/23	7+289-27D Widening MNB	Completed	LHS-Protection to be done as per drawing after clearance of Electric pole and house compound RHS-Flexible apron to be done after clearance of land owner objection
Pl1/24	10+866-27D Widening as per CA, Reconstruction at Site	Completed	RHS-Protection works to be done after clearance of land owner objection
Pl1/25	11+867 27D Reconstruction of Box Culvert	Completed	RHS-Protection works to be carried after clearance of Electric pole and pipe line LHS-Protection works to be carried out after clearance of land problem
Pl1/26	20+787-27D Widening HPC	Completed	RHS-Apron to be done after shifting of pipe line

Punch List –II, items to be started or in progress shall be completed within 90 days from the issuance of Provisional certificate. The details are given in the following table.

Table 3.3: Punch List-II

WCP-06 Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing state Highway Mundargi - Hadagali - Harpanahalli in The State of Karnataka on DBFOMT Annuity Basis (Link - 27C & 27D)		
Punch List - 2 For - PCOD (Link - 27C & 27D)		
Punch ID	**Location**	**Balance works**
PL2/1	00+000 to 00+930 (BHS)-27C-Mundargi Town limit	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/2	08+000 to 08+300 (BHS)-27C-Toll plaza	Work to be executed after clearance of LA
PL2/3	10+100 to 10+600 (BHS) -27C Korlahalli village	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/4	13+970 to 14+210 (BHS) - 27C Kumbli village	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/5	14+590 to 14+710 (BHS) - 27C Water pipe line	Work to be executed after clearance of Utility shifting
PL2/6	17+950 to 18+330 (BHS) - 27C Kagnoor village	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/7	23+180 to 24+000 (BHS) - 27C Hoovina Hadagalli City	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/8	13+900 to 14+040 (BHS) - 27D Kanahalli Village	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/9	23+800 to 24+100 (BHS) 27D Toll plaza	Work to be executed after clearance of LA
PL2/10	25+554 to 25+910 (BHS) - 27D Harpanhalli city	Work to be executed after clearance of LA, R&R and Utility shifting
PL2/11	Link-27C Maktumpura (BHS 2Nos), Bennehalli (BHS 2 Nos), Korlahalli (BHS 2 Nos) Huvina Hadagali (BHS 2 Nos) Link-27D Eradettinahalli (RHS1 No), Vinobha Nagar (RHS 1 No), Bandri (RHS 1No)	Bus bays & Bus Shelter to be executed after clearance of LA and R&R
PL2/12	Link-27C Korlahalli (BHS), Huvina Hadagalli (BHS) Link-27D Nagati basapur (BHS), Km.. Tanda (RHS), Bandri (RHS),	RCC drain work to be done after clearance of LA, R&R and local objection

WCP-06 Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing state Highway Mundargi - Hadagali - Harpanahalli in The State of Karnataka on DBFOMT Annuity Basis (Link - 27C & 27D)		
Punch List - 2 For - PCOD (Link - 27C & 27D)		
Punch ID	**Location**	**Balance works**
	Chikkahalli (RHS), Harapanahalli (BHS)	
PL2/13	Link-27C Huvina Hadagali (BHS) Link-27D Huvina Hadagali (BHS), Nagati basapur (BHS)	Foot path and paver blocks to be done after clearance of pipeline and LA
PL2/14	Link-27C Korlahalli (BHS) Huvina Hadagali (BHS) Link-27D Nagati basapur (BHS), Km. Tanda (RHS), Bandri (RHS), Chikkahalli (RHS), Harapanahalli (BHS)	Paved bloc to be done after clearance of LA, R&R and Utility shifting
PL2/15	Link-27C Huvina Hadagali (LHS) Link-27D Km. Tanda (BHS)	Toe, kerb and paved blocks to be done after clearance of LA

3.3 De scoped works

Balance works pending due to non-availability of land are proposed for descope and the details as follows.

Table 3.4: Details of De scoped works

Description of Item	Location	Remarks
Structure Protection work	5 locations	LA issue
Drain work	4 locations in 27 D& 1 in 27C	
Footpath	5 locations in 27D&1in 27C	
Drain side Kerb work	One location in 27C	
Bus shelters and Bus bays		Refer Table 3.6

Table 3.5: Status of Bus bays and Bus shelters

S. No.	Chainage Km.	Location	side	Bus shelter	Bus bay
27C					
1	3+570	Mukhtumpur	LHS	De scoped	completed
2	3+800	Mukhtumpur	RHS	De scoped	To be constructed
3	4+700	Bennehalli	RHS	To be constructed	To be constructed
4	5+050	Bennehalli	LHS	De scoped	De scoped
5	9+920	Korlahalli	RHS	De scoped	To be constructed
6	10+780	Korlahalli	LHS	De scoped	De scoped
7	22+950	Hadagali	RHS	De scoped	De scoped
8	23+080	Hadagali	LHS	De scoped	De scoped
27D					
1	4+800		LHS	completed	De scoped
2	17+880		LHS	completed	De scoped

CHAPTER 4. ROAD INVENTORY & PAVEMENT CONDITION

4.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections provided below

4.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 4.1: Road Inventory

S. No.	Features	Remarks
1.	Terrain	Plain Terrain
2.	Land Use	Mostly Agriculture
3.	Two lane length	51.21 Kms.
4.	Earthen shoulder	1 (m) to 1.5 (m) Width on site
5.	Junctions	30 Nos.
6.	Toll Plaza	02 Nos.
7.	Sign boards	Sign boards are provided as per requirement
8.	Road Markings	Lane markings are provided as per requirement
9.	Bus Shelters	2 Nos.
10.	Highway Lighting	Provided as per requirement
11.	Avenue plantation	Provided

Km. 25+000

Km. 22+950

Km. 23+800

Figure 4.1: Representative Photographs of Existing Road Features

4.3 Pavement Condition

Pavement condition survey was carried out on the project road based on observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 4.2: Pavement Condition Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

4.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive-over survey, and supplemented with measurements wherever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, potholes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of Surface area)
  - Ravelling (% of Surface area)
  - Potholes (% of Surface area)
  - Patching (% of Surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The field measurements of the Pavement Condition

survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1**. The summary of Pavement condition is given below

Table 4.3: Pavement condition summary

From (Km.)	To (Km.)	Length (Kms.)	Condition
0+000	55+210	51.21	good

Km. 21+700

Km. 21+900

Figure 4.2: Representative Photograph of Pavement Condition Photography

CHAPTER 5. INVENTORY AND REVIEW OF STRUCTURES

5.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

5.2 Inventory of Structures

There is 01 Nos Major Bridge, 11 Nos Minor Bridges, 65 Nos Pipe culverts and 19 Nos Slab/ Box culverts are there along this project road.

Table 5.1: List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	1
2	Minor Bridge	11
3	Pipe culverts	65
4	Slab/Box Culverts	19

The superstructure of the Major bridge is of PSC T-beam and RCC Deck slab. The substructure is of RCC wall type piers and abutments resting on Well foundations. There are 11 minor bridges in which some are RCC solid slab type bridges PCC / RCC wall type Piers and abutments resting on open foundations. Also, there are some RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

5.3 Details of Major Bridges

There is one Major bridge in the project stretch. The total length of the bridge is 410.0m with 10 spans of 41.0m. The superstructure is of PSC T-beam and RCC Deck slab. The substructure is of RCC wall type piers and abutments resting on Well foundations. Elastomeric/Neoprene bearings are used. Expansion joints are of Modular Strip seal type and RCC railing has been provided.

Table 5.2: List of Major Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	11+705	10 x 41.0	410

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts and strip seal expansion joints are to be carried out.

Km. 11+705

Figure 5.1: Representative of Photographs of Major Bridges

5.4 Details of Minor Bridges

There are 11 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are of tar paper and neoprene bearings. RCC crash barriers are provided on all structures.

Table 5.3: Inventory of Minor Bridges

S. No.	Chainage Km.	Span (m)	Total Length of Bridge (m)	Description
Mundargi – Hoovina Hadagali				
1	0+680	4 x 13.0	52.00	The MNB has RCC solid slab superstructure supported on conventional RCC wall type piers and abutments resting on open foundations. Strip seal type expansion joints.
2	3+324	9 x 5.5	49.50	It is RCC box type minor bridge.
3	9+275	4 x 7.5	30.00	It is RCC box type minor bridge.
4	20+688	1 x 8.0	8.0	It is RCC box type minor bridge.
5	21+844	4 x 10.0	40.0	It is RCC box type minor bridge.
Hoovina Hadagali - Harapanahalli				
1	0+351	2 x 4.0	9.05	It is RCC box type minor bridge with buried type expansion joints.
2	6+906	1 x 8.5	8.50	MNB has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
3	7+289	2 x 4.725	10.50	It is RCC box type minor bridge with buried type expansion joints.
4	10+278	1 x 6.3	7.20	MNB has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.
5	11+237	1 x 6.3	7.20	It is RCC box type minor bridge with buried type expansion joints.

S. No.	Chainage Km.	Span (m)	Total Length of Bridge (m)	Description
Mundargi – Hoovina Hadagali				
6	16+781	6 x 8.2	49.20	MNB has RCC solid slab superstructure supported on conventional PCC wall type piers and abutments resting on open foundations. Buried type expansion joints.

Km. 9+275

Km. 21+844

Figure 5.2: Representative photographs for Minor Bridges

5.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent clearance is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in ANNEXURE 3.

5.5.1. General Description of Slab/Box Culverts

There are 19 Nos. of slab / Box culverts in the project stretch. The details of the culverts are as given below.

Table 5.4: List of Slab/Box Culverts

S. No.	Chainage (km.)	Span (m)
Mundargi – Hoovina Hadagali		
1	0+250	1 x 2.0
2	1+189	1 x 2.0
3	5+720	1 x 6.0
4	13+734	1 x 1.1
5	17+665	1 x 2.0
6	19+881	1 x 1.2
7	21+319	1 x 1.2
Hoovina Hadagali - Harapanahalli		
8	1+76	1 x 3.8
9	3+248	1 x 2.0

S. No.	Chainage (km.)	Span (m)
10	3+921	1 x 2.5
11	4+053	1 x 2.0
12	4+629	1 x 1.5
13	4+901	1 x 2.0
14	7+453	1 x 1.85
15	10+866	1 x 1.8
16	11+209	1 x 2.0
17	11+867	1 x 2.0
18	25+462	1 x 2.0
19	25+846	1 x 4.5

The general condition of above box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 19+881

Km. 4+053

Figure 5.3: Representative Photographs of Box Culverts

5.5.2. General Description of Pipe Culverts

There are 65 Nos. of pipe culverts in the project stretch. The details of the culverts are as given below.

Table 5.5: List of Pipe Culverts

S. No.	Chainage (Km.)	Span (m)	S. No.	Chainage (Km.)	Span (m)
Mundargi – Hoovina Hadagali			**Hoovina Hadagali - Harapanahalli**		
1	0+044	2 x 0.9	33	2+219	1 x 1.2
2	1+696	1 x 0.9	34	2+677	15 x 1.2
3	1+86	1 x 1.2	35	2+963	1 x 1.0
4	2+203	1 x 1.2	36	4+341	1 x 1.2
5	2+289	1 x 0.9	37	5+038	1 x 1.2
6	2+727	1 x 1.2	38	5+203	1 x 1.2
7	3+480	1 x 0.9	39	5+345	1 x 1.2
8	3+636	1 x 0.9	40	5+588	2 x 0.9
9	3+962	4 x 0.9	41	6+010	1 x 1.2

S. No.	Chainage (Km.)	Span (m)
Mundargi – Hoovina Hadagali		
10	4+513	1 x 1.2
11	4+854	1 x 0.9
12	6+962	1 x 0.9
13	7+941	1 x 1.2
14	8+640	2 x 0.9
15	10+453	1 x 1.2
16	11+069	4 x 1.2
17	12+484	3 x 1.0
18	14+512	1 x 0.9
19	14+947	2 x 1.2
20	15+339	1 x 1.2
21	15+422	3 x 0.9
22	15+703	1 x 0.9
23	16+410	2 x 1.0
24	16+710	1 x 1.2
25	18+000	1 x 1.2
26	18+426	1 x 0.9
27	18+969	4 x 1.0
28	19+425	1 x 1.2
29	20+083	1 x 0.9
30	20+459	1 x 1.2
31	21+575	1 x 1.0
32	24+415	2 x 1.2

S. No.	Chainage (Km.)	Span (m)
Hoovina Hadagali - Harapanahalli		
42	6+441	1 x 0.9
43	6+923	1 x 1.2
44	8+320	2 x 1.2
45	9+172	5 x 1.2
46	10+646	3 x 1.2
47	12+510	1 x 1.2
48	13+158	3 x 0.9
49	13+874	1 x 0.9
50	14+100	1 x 1.2
51	14+285	7 x 1.2
52	14+732	1 x 0.3
53	15+185	3 x 0.9
54	16+069	4 x 0.9
55	17+960	2 x 0.9
56	18+714	1 x 1.2
57	19+473	3 x 0.9
58	20+329	3 x 0.9
59	20+787	5 x 0.9
60	22+906	1 x 1.2
61	23+283	1 x 0.9
62	23+500	2 x 1.2
63	24+182	1 x 1.2
64	24+424	4 x 0.9
65	26+099	1 x 0.9

General condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 6. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

6.1 General

Review of Pavement design report, providing insights on design life of pavement, crust thickness, history of overlays over the existing pavement etc., Based on pavement condition and CA provisions recommendation for the upcoming renewal cycles.

6.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2012 publication while the current publication is IRC: 37-2018.

6.2.1. Pavement design crust thickness

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

The project road has been divided into 2 sections i.e. Link 27 C (from Mundargi Km. 174+200 to Hadagali Km. 199+500 and Link 27 D (from Hadagali Km. 355+960 to Harapanahalli Km. 329+460). The design traffic as per traffic during design stage and design traffic as per CA is summarized below.

Table 6.1: Design traffic summary

S. No.	Location	As per traffic surveys		As per schedule		Adopted for design	
		10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)	10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)	10 years MSA (Bituminous layer)	15 years MSA (Non-Bituminous layer)
1	Km. 182+335	11.95	19.42	3.5	5.55	11.95	19.42
2	Km. 332+245	1.23	2	3.74	5.87	3.74	5.87

As per schedule, Appendix B-II, “The design of the crust for the project road shall be done for schedule MSA or as per actual traffic whichever is more”. Since the calculated MSA of the project road is coming out higher in Link 27C and lower in Link 27D, with respect to MSA provided in Schedule B of Concession Agreement, therefore MSA as per actual traffic for Link 27 C and as per given in schedule B

for link 27 D has been adopted for the design of crust for the road. Pavement crust thickness in the pavement design report for flexible pavement is as follows:

Table 6.2: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design/Adopted Parameters	
		Link 27 C	Link 27 D
1	Sub Grade CBR (%)	10 %	8 %
2	Design Life (Years)	10 years for bituminous 15 years for non-bituminous	10 years for bituminous 15 years for non-bituminous
3	Design Traffic (MSA)	11.95 MSA for bituminous 19.42 MSA for non-bituminous	3.74 MSA for bituminous 5.87 MSA for non-bituminous
4	Surface course (BC)	40mm	40mm
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	200 mm	160 mm

Pavement crust thickness in the pavement design report for rigid pavement is as follows:

Table 6.3: Rigid Pavement Design for Toll Plaza

Description	Design/Adopted Thickness	
	Link 27 C	Link 27 D
CBR of sub grade	10 %	10 %
Design life in years	30	30
Pavement Quality Concrete (PQC) – (mm)	280	250
Dry Lean Concrete (DLC) – (mm)	150	150
Drainage Layer (GSB) - (mm)	150	150
Diameter of Dowel Bar (mm)	32	32
Length of Dowel Bar (mm)	450	450
Spacing of Dowel Bars (mm)	300	300
Diameter of Tie Bar (mm)	12 (Deformed)	12 (Deformed)
Length of Tie Bar (mm)	640	640
Spacing of Tie Bars (mm)	640	780

The Pavement crust has been designed according to IRC specification and found in order the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

6.3 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 11.95 MSA and 3.74 MSA (up to 2027 for 10 years) for Link 27C and Link 27D respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, as per clause 2.3.7 of Schedule K of CA, periodic renewal shall be carried out as and when required and at least once between 5th and 7th year (from COD) within the concession period, the periodic maintenance activities shall also include profile corrective course overlaid with the periodic

renewal of the wearing course of BC, the concessionaire may adopt cost effective treatment like asphalt recycling, stone mastic, micro seal etc.

Based on the present available data It is envisaged that existing pavement require overlay (periodic renewal) in the year of 2025. Nevertheless, the pavement shall be maintained to the desired level of performance by carrying out periodical renewals as mentioned in subsequent sections.

6.3.1. Maintenance/ Overlay schedule

Periodic Maintenance shall be carried out as and when required based on the road condition and at least once in 7 years from COD and in the last year of Concession period as a good industry practice. It includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement – Next periodic renewal In the year 2025
Periodic Maintenance for Rigid Pavement – Re-texturing shall be done at least once in 10 years from construction

CHAPTER 7. SAFETY AUDIT OF ROAD

7.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992.

Table 7.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 73	Two lane Manual
IRC: SP- 84	Four lane Manual
IRC: SP- 88	Manual of Road Safety Audit

7.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 7.2: Status of Road Safety Items

S. No.	Item Description		Status	Condition
Road Furniture				
1	Sign Boards	Chevron Signs	Available as per site requirement	Good
		Village sign boards	Available as per site requirement	Good
		Information Boards	Available as per site requirement	Good
		Other Sign Boards	Available as per site requirement	Good
		Gantry Sign Boards	Available as per site requirement	Good
2	Road Marking	Studs &Lane marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Fair

Km. 21+900

Figure 7.1: Representative Photographs of Road Safety

7.3 Conclusions

Safety arrangements, made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is highly appreciated during the maintenance period.

CHAPTER 8. TOLL PLAZA & HTMS

8.1 General

There are two toll Plazas on the project road at Link-27C & Link-27D. Each Toll plaza comprises of 4 lanes. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza buildings are G+1 floor building which houses control room, UPS and Pantry.

8.2 Tolling Equipment's

List of equipment provided at toll plaza and control room is given below

Table 8.1: List of Tolling Equipment at Toll Plaza and Control Room

S. No.	Equipment	Nos.
1	Combined toll lane controller with AVC controller	12
2	Toll collector Keyboard	12
3	AVC sensors including 3 sets of height sensors	12
4	Thermal Receipt Printer	12
5	Lane incident capture camera	12
6	Traffic Light 200mm dia	12
7	Overhead lane signals	12
8	User fare display 2-lines	12
9	Intercom slave unit	12
10	Lane barrier	12
11	IR Barrier Safety	12
12	Manual booth controller	12
13	10KVA online	
14	Barcode Reader	12
Plaza Room Equipment		
15	TMS server	2
16	Admin/LSDU	4
17	Cashu up/Audit work station	4
18	Thermal receipt printer	2
19	6KVA online UPS with 30 min back up.	2

8.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 8.2: List of Vehicles

S. No.	Vehicle Type	Remarks
1	Jeep	Ambulance (2)
2	Jeep	Patrolling vehicle (2)

Toll Plaza at Km. 23+800

Toll Building at Km. 8+150

Figure 8.1:Representative Photographs of Toll Plaza

CHAPTER 9. SCHEDULE OF ANNUITY PAYMENTS

9.1 Hybrid Annuity Model (HAM)

Hybrid annuity model is the PPP model in which Authority makes payment of 40% of the Bid Project cost during construction period based on progress milestones set forth in Concession Agreement. Payment of the balance 60% of the Bid Project Cost is made in form of bi-annual annuities with interest during the operational phase of concession.

In this HAM model, as per Cl. 27.5 Lump sum payment is given in four installments during the construction phase as below.

Table 9.1: Payment Schedule during construction

Installment No	Amount in Rs. (Crores)	% Progress during construction
First	16.163	25
Second	16.163	50
Third	16.163	75
Fourth	16.163	On COD

9.2 Schedule of Annuity Payments

As per 27.1, the concessionaire upon achieving COD, Authority agrees to pay Rs. 17.73 crores as per schedule –M.

Table 9.2: Schedule of Annuity Payments

S. No.	Particulars	Annuity Due Dates	Payment received date
1	1st Annuity	28.03.2019	29-Mar-19
2	2nd Annuity	29.09.2019	19-Dec-19
3	3rd Annuity	28.03.2020	29-Mar-20
4	4th Annuity	29.09.2020	19-Nov-20
5	5th Annuity	28.03.2021	
6	6th Annuity	29.09.2021	
7	7th Annuity	28.03.2022	
8	8th Annuity	29.09.2022	
9	9th Annuity	28.03.2023	
10	10th Annuity	29.09.2023	
11	11th Annuity	28.03.2024	
12	12th Annuity	29.09.2024	
13	13th Annuity	28.03.2025	
14	14th Annuity	29.09.2025	
15	15th Annuity	28.03.2026	
16	16th Annuity	29.09.2026	

CHAPTER 10. OPERATION AND MAINTENANCE

10.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project Highways by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

10.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- Visual Inspection
- Detailed Inspection
- Thorough Inspection

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority's Engineer not later than 45 days prior to the commencement of the month in which maintenance is to be carried out.

10.3 Operations

10.3.1. Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project Highway and Project Facilities.

1. Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2. Carrying out preventive and periodic maintenance of the Project Highway;
3. Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
4. Undertaking major maintenance such as resurfacing of pavements, repairs to structures,
5. Functioning of the lighting system;
6. Functioning of the Patrolling System
7. Functioning of rescue and medical aid services
8. Ambulance as and when required
9. Functioning of the Project Facilities
10. Administrative, Operational and Maintenance Base Camp
11. Truck Parking Lay bays
12. Pickup Bus stops / Bus Bays
13. protection of the environment and provision of equipment and materials therefore;
14. Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project Highway
15. Complying with Safety Requirements in accordance with Article 18.

10.4 Maintenance of Project Highway

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

10.4.1. Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

10.4.2. Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

10.4.3. Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay", they are intended to increase load-carrying capabilities of the project road.

However, as per Schedule K, 2.3.7 periodic maintenance of BC shall be laid as required and at least 5th or 7th year from Cod.
The details of periodic maintenance schedule are given below.

Table 10.1: Schedule and status of for Major Maintenance

S. No.	Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2025	Scheduled

10.4.4. Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sandstorms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project Highway shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction
c. Construction of Diversions
d. Floodway repairs; and
e. Flood damage restoration works, etc.

10.5 Review of Test Reports

10.5.1. Bump Integrator Values

Maintenance of road is dependent on several factors, one of which is the condition of the pavement surface. Treatment can be suggested based on the condition of surface of road. As such Roughness is the measurement of riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness.

The concessionaire shall measure the road roughness at least twice in every year. Accordingly, the BI test was conducted in Aug 2020. As per Schedule K during the maintenance period, laying of the renewal coat shall be initiated if the stretch exceeds 2000mm/Km. The values obtained from the test report are verified and found within the above said limits. Hence no renewal coat is required.
Further it is to be noted that Concessionaire shall handover the project with riding quality with acceptable roughness value 2000mm/Km.

10.5.2. Benkelman Beam Deflection (BBD)

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

As per Schedule K, BBD tests shall be conducted every year soon after rainy season. Deflection exceeds 1mm, a bituminous overlay shall be provided to bring it back to 0.6mm. DBL has conducted BBD test in Feb 2020 and deflection not exceeded 1mm. Hence overlay is not required.

Also a mandatory strengthening course shall be provided over the period 5th/6th years after COD. Moreover, the deflection assessed by BBD test at the end of the concession period shall not exceed 1mm.

10.5.3. Environmental Quality Monitoring

In Aug 2020, Concessionaire has conducted Ambient air quality test, Noise quality test, Water quality test and soil quality test in accordance with Schedule L. The values are within the permissible limits.

10.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 4.**

Table 10.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
	(In crores)	(In crores)			
2020	0.242	0.312		1.11	**1.66**
2021	0.249	0.322		1.14	**1.71**
2022	0.256	0.331		1.18	**1.77**
2023	0.264	0.341		1.21	**1.82**
2024	0.272	0.351	17.46	1.25	**19.33**
2025	0.28	0.362	17.94	1.29	**19.87**
2026	0.288	0.373		1.33	**1.99**
2027	0.147	0.19		0.68	**1.02**
Total	**2.00**	**2.58**	**35.40**	**9.19**	**49.17**

CHAPTER 11. REVIEW OF CONCESSION AGREEMENT

11.1 General: Scope of Project (Article 2)

Article 2 provides the scope of work, which includes the following.

- construction of the Project Highway on the Site set forth in schedule B and C and in conformity with the Specifications and Standards (Schedule D) and Schedule L;
- operation and maintenance of the Project Highway in accordance with the provisions of this Agreement
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental

11.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5.**

11.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule A
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

11.4 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 120 days from the date of the Agreement,
- The Performance security shall remain in force throughout the Construction period
- Performance Security shall be released on Commercial Operation Date.

11.5 Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

11.6 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of CA.

A copy of PCOD enclosed at **Annexure-6**.

11.7 Completion Certificate (Clause 14.4)

Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

11.8 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.

- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

11.9 Change of scope (Article 16)

Change of scope proposals that were initiated during construction period and consented by the KRDCL are provided at **Annexure 8**.

11.10 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements and repairs.
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials

11.11 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (The "**Maintenance Requirements**").

11.12 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

11.13 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual Programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

11.14 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of the Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero decimal one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

11.15 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

11.16 Annuity (Article 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule M of the CA the sum of Rs 17.73 Crores.

11.17 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

11.18 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 12. INSURANCE

12.1 Details of Insurance

As per clause 32.1 of the Concession Agreement, the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks. The copies of the Insurance is enclosed in **Annexure-7.**

Table 12.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Co. Ltd	32130044191000199 9	27.3.2020	26.3.2021	Toll Plaza Building & Booths, TMS, HTMS, Office & IT Equipment, Road Furniture, Fixtures, Electrical Poles, Lighting & Fittings, Signboard, Safety/concrete/ Protection barrier, gantry various equipment.
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/68	7.12.2020	6.12.2021	EEI Equipment installed in the Project Highway
Employees Compensation Insurance Policy	The New India Assurance Co Ltd	45010036190100000 052	8.2.2020	7.2.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 13. CONCLUSION

13.1 General

Based on the above information over all condition of the Project is provided below.

13.2 Pavement Condition

Pavement condition is Good. No major distress was noticed. In 2020, overlay was laid and riding quality is Good. Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations. Shoulder condition is fair.

13.3 Condition of Structures

General condition of Bridges is Good. No major structural defects were noticed and found structurally safe. General condition of Culverts is Good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

13.4 Traffic Growth

Traffic growth observed since PCOD is satisfactory.

13.5 Project Facilities

Toll Plazas are proposed at Km. 8+150 and at Km. 23+800 and tollbooths are constructed and operated. Truck lay byes/Bus bays are in Good condition. Highway lighting is provided at truck laybys and toll plaza locations and found functional.

13.6 Road safety

Pavement marking is in Good condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards is Good but very few sign boards were mis-utilized by the local people, sticking the pamphlets on boards resulting to reduction in visibility. However, signboards are being cleaned by maintenance team to impart the visibility. Other road appurtenances like metal beam crash barriers and kerb are intact.

13.7 Maintenance

A dedicated team is appointed for routine maintenance works and working effectively. Major maintenance (MM) /Periodic maintenance is scheduled in 2024 /2025.

13.8 Epilogue

The project is well designed and constructed as per the stipulated specifications besides maintenance work is being carried out effectively and keeping the road traffic worthy, smooth, safe at all times.

ANNEXURES

Annexure 1: Condition of Pavement

Chainage (Km.)		Shoulder		Riding Quality		Pavement Condition					Pavement Edge Drop (cm)	Embankment Condition (G/F/P)	Road Side Drain	
From	To	Composition	Condition (G/F/P/VP)	Speed (Km./hr.)	Condition (G/F/P/VP)	Cracking (%)	Raveling (%)	Potholing (%)	Rutting	Patching (%)			Type (LD/ULD/CD/NO)	Condition (PF/F)
0+000	1+500	-	-		P/G							G	LD	F
1+500	2+000	P+E	G		G							G	ULD	F
2+000	3+000	P+E	G		G							G	ULD	F
3+000	4+000	P+E	G		G							G	ULD	F
4+000	5+000	P+E	G		G							G	ULD	F
5+000	6+000	P+E	G		G							G	ULD	F
6+000	7+000	P+E	G		G							G	ULD	F
7+000	8+000	P+E	G		G							G	ULD	F
8+000	9+000	P+E	G		G							G	ULD	F
9+000	10+000	P+E	G		G	4						G	ULD	F
10+000	10+700	P	G		G	5						G	LD	F
10+700	12+000	P+E	G		G							G	ULD	F
12+000	13+000	P+E	G		G							G	ULD	F

Chainage (Km.)		Shoulder		Riding Quality		Pavement Condition					Pavement Edge Drop (cm)	Embankment Condition (G/F/P)	Road Side Drain	
From	To	Composition	Condition (G/F/P/VP)	Speed (Km./hr.)	Condition (G/F/P/VP)	Cracking (%)	Raveling (%)	Potholing (%)	Rutting	Patching (%)			Type (LD/ULD/CD/NO)	Condition (PF/F)
13+00	14+000	P+E	G		G							G	ULD	F
14+000	15+000	P+E	G		G							G	ULD	F
15+000	16+000	P+E	G		G							G	ULD	F
16+000	17+000	P+E	G		G					6		G	ULD	F
17+000	18+.000	P+E	G		G							G	ULD	F
18+.000	19+000	P+E	G		G							G	ULD	F
19+000	20+000	P+E	G		G							G	ULD	F
20+000	21+000	P+E	G		G							G	ULD	F
21+000	22+000	P+E	G		G							G	ULD	F
22+000	22+900	P+E	G		G							G	ULD	F
22+900	23+700	P	G		G							G	LD	F
23+700	24+885	-	-		G							G	LD	F
0+000	0+500	-	-		G					7		G	LD	F
0+500	1+000	P+E	G		G							G	ULD	F

Chainage (Km.)		Shoulder		Riding Quality		Pavement Condition					Pavement Edge Drop (cm)	Embankment Condition (G/F/P)	Road Side Drain	
From	To	Composition	Condition (G/F/P/VP)	Speed (Km./hr.)	Condition (G/F/P/VP)	Cracking (%)	Raveling (%)	Potholing (%)	Rutting	Patching (%)			Type (LD/ULD/CD/NO)	Condition (PF/F)
1+000	2+000	P+E	G		G							G	ULD	F
2+000	3+000	P+E	G		G							G	ULD	F
3+000	4+000	P+E	G		G							G	ULD	F
4+000	5+000	P+E	G		G							G	ULD	F
5+000	6+000	P+E	G		G							G	ULD	F
6+000	7+200	P+E	G		G							G	ULD	F
7+200	8+000	P	G		G							G	LD	F
8+000	9+000	P+E	G		G							G	ULD	F
9+000	10+000	P+E	G		G							G	ULD	F
10+000	11+300	P+E	G		G							G	ULD	F
11+300	11+900	P	G		G							G	LD	F
11+900	12+900	P+E	G		G							G	ULD	F
12+900	13+800	P+E	G		G							G	ULD	F
13+800	14+200	P	G		G							G	LD	F

Chainage (Km.)		Shoulder		Riding Quality		Pavement Condition							Road Side Drain	
From	To	Composition	Condition (G/F/P/VP)	Speed (Km./hr.)	Condition (G/F/P/VP)	Cracking (%)	Raveling (%)	Potholing (%)	Rutting	Patching (%)	Pavement Edge Drop (cm)	Embankment Condition (G/F/P)	Type (LD/ULD/CD/NO)	Condition (PF/F)
14+200	15+000	P+E	G		G							G	ULD	F
15+000	16+000	P+E	G		G							G	ULD	F
16+000	17+000	P+E	G		G							G	ULD	F
17+000	18+000	P+E	G		G							G	ULD	F
18+000	19+000	P+E	G		G							G	ULD	F
19+000	19+600	P+E	G		G							G	ULD	F
19+600	20+200	P	G		G							G	LD	F
20+200	21+000	P+E	G		G							G	ULD	F
21+000	22+000	P+E	G		G							G	ULD	F
22+000	23+000	P+E	G		G							G	ULD	F
23+000	24+000	P+E	G		G							G	ULD	F
24+000	25+100	P+E	G		G							G	ULD	F
25+100	26+321	P	G		G							G	LD	F

Condition: G=Good, F=Fair, P=Poor & VP=Very poor, Rutting: M=Moderate & S=Severe
Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Annexure 2: Condition of Bridges

S. No.	Chainage (Km.)	Type of Structure	Substructure	Super structure	Crash barrier	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Toe wall
Mundargi -Hadagali										
1	0+68	Minor	Good	Good	Good	-	Good	-	-	Good
2	3+324	Minor	Good	Good	Good	Good	Good	Good	Good	Good
3	9+275	Minor	Good	Good	Good	Good	Fair	-	Good	Good
4	11+705	Major	Good	Good	Good	-	Good	-	Good	Good
5	20+688	Minor	Good	Good	Good	Good	Fair	-	-	Good
6	21+844	Minor	Good	Good	Good	-	-	-	Good	Good
Hoovina Hadagali - Harapanahalli										
7	0+351	Minor	Good	Good	Good	Good	-	Good	Good	Good
8	6+906	Minor	Good	Good	Good	-	Good	-	Good	Good
9	7+289	Minor	Good	Good	Good	Good	Good	Good	Good	Good
10	10+278	Minor	Good	Good	Good	Good	Fair	-	Good	Good
11	11+237	Minor	Good	Good	Good	-	Good	-	Good	Good
12	16+781	Minor	Good	Good	Good	Good	Good	-	Good	Good

Annexure 3: Condition of Culverts

Pipe Culverts

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
Mundargi -Hadagali					
1	0+044	Pipe	Good	Fair	Good
2	1+696	Pipe	Good	Fair	Good
3	1+860	Pipe	Good	Fair	Good
4	2+203	Pipe	Good	Fair	Good
5	2+289	Pipe	Good	Fair	Good
6	2+727	Pipe	Good	Fair	Good
7	3+480	Pipe	Good	Fair	Good
8	3+636	Pipe	Good	Fair	Good
9	3+962	Pipe	Good	Fair	Good
10	4+513	Pipe	Good	Fair	Good
11	4+854	Pipe	Good	Fair	Good
12	6+962	Pipe	Good	Fair	Good
13	7+941	Pipe	Good	Fair	Good
14	8+640	Pipe	Good	Fair	Good
15	10+453	Pipe	Good	Fair	Good
16	11+069	Pipe	Good	Fair	Good
17	12+484	Pipe	Good	Fair	Good
18	14+512	Pipe	Good	Fair	Good
19	14+947	Pipe	Good	Fair	Good
20	15+339	Pipe	Good	Fair	Good
21	15+422	Pipe	Good	Fair	Good
22	15+703	Pipe	Good	Fair	Good
23	16+410	Pipe	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
24	16+710	Pipe	Good	Fair	Good
25	18+000	Pipe	Good	Fair	Good
26	18+426	Pipe	Good	Fair	Good
27	18+969	Pipe	Good	Fair	Good
28	19+425	Pipe	Good	Fair	Good
29	20+083	Pipe	Good	Fair	Good
30	20+459	Pipe	Good	Fair	Good
31	21+575	Pipe	Good	Fair	Good
32	24+415	Pipe	Good	Fair	Good
Hoovina Hadagali - Harapanahalli					
33	2+219	Pipe	Good	Fair	Good
34	2+677	Pipe	Good	Fair	Good
35	2+963	Pipe	Good	Fair	Good
36	4+341	Pipe	Good	Fair	Good
37	5+038	Pipe	Good	Fair	Good
38	5+203	Pipe	Good	Fair	Good
39	5+345	Pipe	Good	Fair	Good
40	5+588	Pipe	Good	Fair	Good
41	6+010	Pipe	Good	Fair	Good
42	6+441	Pipe	Good	Fair	Good
43	6+923	Pipe	Good	Fair	Good
44	8+320	Pipe	Good	Fair	Good
45	9+172	Pipe	Good	Fair	Good
46	10+646	Pipe	Good	Fair	Good
47	12+510	Pipe	Good	Fair	Good
48	13+158	Pipe	Good	Fair	Good

S. No.	Chainage (Km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
49	13+874	Pipe	Good	Fair	Good
50	14+100	Pipe	Good	Fair	Good
51	14+285	Pipe	Good	Fair	Good
52	14+732	Pipe	Good	Fair	Good
53	15+185	Pipe	Good	Fair	Good
54	16+069	Pipe	Good	Fair	Good
55	17+960	Pipe	Good	Fair	Good
56	18+714	Pipe	Good	Fair	Good
57	19+473	Pipe	Good	Fair	Good
58	20+329	Pipe	Good	Fair	Good
59	20+787	Pipe	Good	Fair	Good
60	22+906	Pipe	Good	Fair	Good
61	23+283	Pipe	Good	Fair	Good
62	23+500	Pipe	Good	Fair	Good
63	24+182	Pipe	Good	Fair	Good
64	24+424	Pipe	Good	Fair	Good
65	26+099	Pipe	Good	Fair	Good

Box/Slab Culverts

S. No.	Chainage (Km.)	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall
Mundargi -Hadagali						
1	0+250	Box	Good	Fair	Good	Good
2	1+189	Box	Good	Fair	Good	Good
3	5+720	Box	Good	Fair	Good	Good
4	13+734	Box	Good	Fair	Good	Good
5	17+665	Box	Good	Fair	Good	Good
6	19+881	Slab	Good	Fair	Good	Good

S. No.	Chainage (Km.)	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall
7	21+319	Slab	Good	Fair	Good	Good
Hoovina Hadagali - Harapanahalli						
8	1+760	Slab	Good	Fair	Good	Good
9	3+248	Box	Good	Fair	Good	Good
10	3+921	Box	Good	Fair	Good	Good
11	4+053	Box	Good	Fair	Good	Good
12	4+629	Box	Good	Fair	Good	Good
13	4+901	Box	Good	Fair	Good	Good
14	7+453	Box	Good	Fair	Good	Good
15	10+866	Box	Good	Fair	Good	Good
16	11+209	Box	Good	Fair	Good	Good
17	11+867	Box	Good	Fair	Good	Good
18	25+462	Box	Good	Fair	Good	Good
19	25+846	Box	Good	Fair	Good	Good

Annexure 4: O&M Cost

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	51.21	12	4	350	8,60,328	04 nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	3.19	24	4	350	1,07,184	04 nos of Labour
3	Watering in Median Plants	Once in Week	Kms.	3.19	52	1	1939	3,21,641	01 nos of Labour
4	Watering in Avenue plants	Once in Week	Kms.	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Kms.	3.19	12	0	21000	-	02 nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Kms.	25.605	2	5	350	89,618	5 Nos of labour per KM. (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	84	2	2	650	2,18,400	3 nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Kms.	51.21	4	2	350	1,43,388	02 nos of Labour
9	Maintenance of Bus	Monthly	Nos.	9	6	2	350	37,800	2 nos/ Bus shelter/month

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	shelters								
10	General Cleaning in Building & Facilities	Daily	Nos.	2.00	6	60	350	2,52,000	02 nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	11	2	2	350	15,400	02 nos of Labour for removal of vegetation/Structure
								20,45,759	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12	1	10000	10,000	Considered Rs 10,000/- per vehice including maintenance
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	0.0	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Tractor Mounted Water tanker Cap 6 KL for ROW	Monthly	Nos.		12		160000	-	(800000 is the cost of vehicle, considering 20% Rental per year) including maintenance
4	Mechanical Sweeper	Monthly	Nos.		12		500000	-	(2500000 is the cost of vehicle, considering 20% Rental per year) including maintenance
5	Grass cutter	Monthly	Nos.	0.0	12	0	12000	-	(12000/year)
6	Manhoise/ Skyscrapper	Monthly	Nos.		12		400000	-	(2000000 is the cost of vehicle, considering 20% Rental per year)

S No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
									including maintenance
7	Bikes	Monthly	Nos.	0.0	12	0	2500	-	Per Supervisor/Per Month
8	Building Maintenance	Yearly			12	2	5000	1,20,000	5000/month
9	Toll plaza AMC	Yearly	Nos.		12	2	5000	1,20,000	5000/month
								2,50,000	
1	Patrolling vehicle	Monthly	Nos.	12	1	1	10000	10000	Considered Rs 10,000/- per vehice including maintenance
2	Ambulance	Monthly	Nos.	12		1	10000	10000	Considered Rs 10,000/- per vehice including maintenance
3	Tow away trucks and Crane	Monthly	Nos.	12		1	40000	40000	Considered Rs 40,000/- per vehice including maintenance
4	Consumables for Medical Aid Post and Ambulance	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
5	Consumables for Route Patrolling & Crane	Monthly	Nos.	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								1,20,000	
				Routine maintenance cost				**24,15,759.00**	

Incidental Cost

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	3943	516	20,34,588	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	1024	168	1,72,032	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	768.15	225	5,18,501	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Kms.	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considerd 500 nos)
5	MBCB	Monthly	RMT			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (Km. Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	51.21	4	13	2250	1,17,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Kms.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Kms.	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
	Panels								volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.	Yearly	Rmt.	0		0.00	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)
	Total amount for 1 Year							**31,22,121**	

Operational Expenses

S.no.	Particulars	Amount
1	Man Power	₹ 82,20,000
2	Fuel for Generator & Vehicles	₹ 17,88,000
3	Electricity	₹ 9,90,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 22,813
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 1,11,05,813**

Major Maintenance Summary

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores

Date of Estimation	30-01-2021					
Major Maintenance - Highway	01-04-2024	15,93,24,552	3.20	3.0%	17,46,19,709	17.46
Major Maintenance - Highway	01-04-2025	15,93,24,552	4.20	3.0%	17,93,99,446	17.94
				Total	**₹ 35,40,19,155**	**35.40**

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom,Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	5,12,100.00	14.00	71,69,400	5,12,100.00	14.00	71,69,400
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	20,484.00	7,480.00	15,32,20,320	20,484.00	7,480.00	15,32,20,320
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates	Cum	20,484.00	6,800.00	13,92,91,200	20,484.00	6,800.00	13,92,91,200

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	of size							
4	Micro surfacing	Sqm	-	160.00		-	160.00	
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considereing 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				**29,96,80,920**			**29,96,80,920**
	Junctions, Traffic Signs Marking and Other Appurtenances			-			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35.The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	11,949.00	516.00	61,65,684	11,949.00	516.00	61,65,684
3	Road Studs	Nos	17,070.00	750.00	1,28,02,500	17,070.00	750.00	1,28,02,500

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
4	Kerb painting		-	250.00		-	250.00	
	Total			-	**1,89,68,184**		-	**1,89,68,184**
	Grand Total				**31,86,49,104**			**31,86,49,104**

Annexure 5: Letter of Award

KARNATAKA ROAD DEVELOPMENT CORPORATION LTD.

KRDCL/WCP6/ LOA /2015-16 - 1910 **Date: 11-09-2015**

To
M/s Dilip Buildcon Limited,
Plot No. 5, Inside Govind Narayan Singh Gate,
Chuna Bhatti, Kolar Road,
Bhopal (M.P.) - 462 016

Kind Attn: MrDilipSuryavanshi
Email: db@dilipbuildcon.co.in

LETTER OF AWARD

Sir,

Sub: "Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Mundargi - Hadagali – Harapanahalli in the State of Karnataka on DBFOMT Annuity Basis (**WCP6**)"- Letter of Award (LoA)

Ref.: (i) RFP issued on 10th April 2015
(ii) Your bid submitted on June17th, 2015

This is to notify that your bid submitted for the captioned project (the "Project") for a semi-annual annuity quote of Rs17,73,00,000 (Rupees Seventeen Crore and Seventy Three Lakh only) is hereby accepted by the Government of Karnataka by declaring you as the "Selected Bidder". The concession period is 10 (ten) years including construction period of 24 (twenty four) months.

1. The semi-annual annuity quoted by you shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA).

2. Lumpsum Payment of Rs 64,65,20,000 (Rupees Sixty Four Crore, Sixty Five Lakh and Twenty Thousand) shall be disbursed in accordance with the provisions of Draft Concession Agreement (DCA) in four equal instalments.

3. In accordance with the clause 3.3.2 of the Project RFP Document, you are hereby requested to confirm your acceptance of this Letter of Award within 7 days of its receipt by signing and returning the duplicate copy of the LOA in acknowledgement thereof. Thereafter, pursuant to clause 1.3 of the Project RFP Document, you are required to execute the Concession Agreement within 45 days from the issue of LoA.

4. You shall promote and incorporate the Concessionaire as a limited liability company under the Companies Act 1956/2013 as applicable, as the entity which shall undertake and perform the obligations and exercise rights of the Bidder under the LoA, including the obligation to enter into the Concession Agreement pursuant to the LoA for executing the Project.

5. The Concessionaire shall, for the performance of its obligations hereunder during the Concession Period, provide to the Authority no later than 120 (one hundred and twenty) days from the date of the Agreement, an irrevocable and unconditional guarantee from a Bank for a sum equivalent of Rs10.26 Crore (Rupees Ten Crore and Twenty Six Lakh) in the form set forth in Schedule – F (the "Performance Security").

6. In case of Default on your part, action as per relevant conditions of Bid Document shall be taken.

Please acknowledge the receipt.

Yours faithfully,

Encl: LoA (in Duplicate)

Managing Director,
KRDCL

Copy submitted to:

1. Chief Secretary to the Government of Karnataka
2. Principal Secretary, Public Works, Ports & Inland Water Transport Department, Government of Karnataka
3. Principal Secretary, Finance Department, Government of Karnataka
4. Principal Secretary, Infrastructure Development Department, Government of Karnataka
5. Principal Secretary, Forest, Ecology & Environment Department, Government of Karnataka
6. Principal Secretary, Revenue Department, Government of Karnataka
7. Director, PPP Cell, Department of Economic Affairs, Government of Karnataka
8. Collector & District Magistrate, Gadag District, Gadag
9. Collector & District Magistrate, Bellary District, Bellary
10. Collector & District Magistrate, Davanagere District, Davanagere
11. Executive Engineer, KRDCL Project Office, Hubli
12. Principal Accountant General in Karnataka (Accounts), AG's office, New Building, Bangalore - 560001
13. Executive Director, PricewaterhouseCoopers

Annexure 6: Provisional Certificate

CONSULTING
ENGINEERS GROUP LTD
An ISO 9001:2000 Company
Bangalore Office
House No. 98-A, "Brahammagiri" 1st Block, 4th Cross, HT Line, KRS Gowda Extension, HMT Layout, Nagasandra Post, Bangalore-560073. KARNATAKA. Phone: 080-28379118.
CIN : U74140RJ1991PLC006329

No: CEG-BNG/IE/MHH/WCP-6/RA/03/2017-18/

To
Managing Director
M/s DBL Mundarg-Harappanahalli Tollways Limited
Plot 5, Inside Govind Narayan singh Gate
ChunaBhatti, Kolar Road
Bhopal -462026
Madhya Pradesh

Date:31th March 2018

Sub: Independent Engineer for WCP-6: Design, Build, Finance, Maintain and Transfer (DBFOMT) OF Existing State Highway Mundargi-Hadagali-Harapanahalli in the State of Karnataka of DBFOMT Annuity Basis; **Issue of Provisonal Certificate**

Ref: 1) Concessionaire letter No DMHTL/IE-CEG /WCP-06/2016-17/466A dt 20/11/2017
2) IE's letter no. CEG/RO-BNG/KRDCL/WCP-6/PCOD/01/2016-17 date 05/01/18
3) KRDCL letter No KRDCL/Co-Finace/WCP-06/2017-18 Dated 27/03/2018

Sir,

The Concessionair's letter vide under ref (1) wherein requested for issue of Provisional Certificate completion as per clause 14.3 of the article 14 for a length of 45.430 km. Accordingly , IE's letter vide under ref (2) has recommended to KRDCL to declare the project Highway can be provisionally fit to entry into commercial operation commenceing from 5th Feb 2018.

In pursuance of KRDCL vide its letter under ref (3) has given its consent for issuance of Provisional Certificate .Accordinly, as per the Schedule -J of the agreement the necessary Provisional Certificate is hereby notified .

Thanking You

Yours Sincerely
(B.T.Jwalendra Kumar)
Independent Engineer

CC: 1) Managing Director KRDLC Thimmaiah Road Cross, Vasanathanagar Bangalore-52 for kind Infromation
2) Col Sanjay Bajpai Head (Coordination) HQ
3) Executive Engineer , KRDCL Project Office –Hospet for Information
4) Team Leader CEG-Mundargi for information

9/4/18

Head Office: CEG Tower. B-11 (G), Malviya Industrial Area, Jaipur - 302017 (Rajasthan) INDIA Tel : 0141-275801/802/803 Fax : 275806.

CONSULTING
ENGINEERS GROUP LTD
An ISO 9001:2000 Company
Bangalore Office
House No. 98-A, "Brahammagiri" 1st Block, 4th Cross, HT Line, KRS Gowda Extension, HMT Layout, Nagasandra Post, Bangalore-560073. KARNATAKA. Phone: 080-28379118.
CIN: U74140RJ1991PLC006329

No/CEG/RO-BNG/KRDCL/WCP/PCOD/02/2017-18/ **Dated 31 / 03 / 2018**

PROVISIONAL CERTIFICATE

1. I, **B.T. Jwalendra Kumar** , acting as Independent Engineer, under and in accordance with the Concession Agreement dated 29.09.2016 on Design, Build, Finance, Operate and Maintain and Transfer (DBFOMT) the **Mundargi –Hadagali-Harapanahalli** in the state of Karnataka on DBFOMT Annuity Basis ,through DBL Mundargi Harapanahalli Tollways Limited ,hereby certify that the tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with Provisions of the Agreement.

2. Construction works that were found to be incomplete and/ or deficient have been specified in the punch list appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/ or rectify all such works in the time and manner set forth in the Agreement. Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the concessionaire, I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway, pending completion thereof.

3. In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the **5th day of February 2018.**

Signed Sealed and Delivered
For and on behalf of
Concessionaire by:

.... (Signature)

Md. Zijaur Rahman
..... (Name)

Project Manager
Designation

Address

Signed Sealed and Delivered
For and on behalf of
Independent Engineer by:

..... (Signature)

B.T.Jwalendra Kumar (Name)

Independent Engineer (Designation)

Head Office: CEG Tower. B-11 (G), Malviya Industrial Area, Jaipur - 302017 (Rajasthan) INDIA Tel : 0141-275801/802/803 Fax : 275806.

From: "Mundargi - CEG " <mundargi@cegindia.com>
To: <db@dilipbuildcon.co.in>, "'SAJILAL'" <rsajilal@dbl.co.in>
Cc: "'Managing Director'" <mdkrdcl@gmail.com>, "'Sanjay Bajpai - CEG'" <bajpaisanjay@cegindia.com>, "'ravindra nath'" <eekrdclhospet@gmail.com>, <tlmundargi@cegindia.com>, <bt.jwalendra@cegindia.com>

Date: Tuesday, April 03, 2018 10:00AM
Subject: Issue of Provisional Certificate

Dear Sir,

Please find attached here with Issue of Provisional Certificate

Thanks & Regards
Mundargi Office
WCP-06

Attachments:
CEG 03 (Issue of Provisional Certificate.pdf

https://mail.notes.na.collabserv.com/livemail/0/04573CFF68C00011694F7BA31723A32C/?OpenDocument&Form=h_PrintUI&ui=classic&sq=1

Annexure 7: Completion Certificate

CONSULTING
ENGINEERS GROUP LTD
An ISO 9001:2000 Company
Bangalore Office
House No. 98-A, "Brahanmagiri" 1st Block, 4th Cross, HT Line, KRS Gowda Extension, HMT Layout, Nagasandra Post, Bangalore-560073. KARNATAKA. Phone: 080-28379118.
CIN : U74140RJ1991PLC006329

NO/CEG /RO-BNG/ KRDCL/ WCP-6/PCOD/01/2017-

To,
The Managing Director
Karnataka Road Development Corporation Limited
1st Floor,#16/J,
Thimmaiah Road Cross,
Miller Tank bed Area
Vasanthanagar
Bangalore-560052

Date: - 23rd February 2018

Sub: Independent Engineer for WCP-6: Design, Build, Finance, Maintain and Transfer (DBFOMT) Of Existing State Highway Mundargi- Hadagali-Harapanahalli in the State of Karnataka on DBFOMT Annuity Basis - **Issuance of Provisional Certificate of Completion as per Clause 14.3 of Article 14 for 45.430 km**

Ref:-

1. Concessionaire Letter No: DMHTL/MD-KRDCL/WCP-06/2016-17/466A dt:- 20.11.2017
2. IE Letter No: CEG/Mund/WCP-06/Misc/2016-17/542dt:16.12.2017
3. Concessionaire Letter No: DMHTL/IE-CEG/WCP-06/2016- 17/522dt: 05.01.2018
4. KRDCL Letter No. KRDCL/co finance/WCP-6/1722 dt:-06.10.2016

Sir,

The KRDCL has taken up Design, Build, Finance, Operate, Maintenance and Transfer (DBFOMT) of State Highway Mundargi-Hadagali-Harapanahalli on DBFOMT (Hybrid Annuity) basis.

The project road extends in two state highway viz., SH-45Link -27C which starts on SH-45 from Mundargi (Hesarur Junction) and ends at HoovinaHadagali(24.885 km) and SH-47, Link 27D which starts from HoovinaHadagali and ends at Harapanahalli at Tahsildar Office on SH-25(26.321 km).

SH	Details	From	To	Length in m
SH-45	Link 27C Mundargi – Hadagali	0+000	24+885	24,885
SH-47	Link 27D Hadagali – Harapanahalli	0+000	26+321	26,321
	Total			**51,206**

The cursory details of the contract WCP-6 is as below:

Contract no.	WCP-6
Contract name	Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Mundaragi – Harapanahalli road in the State of Karnataka on DBFOMT Hybrid Annuity Basis
Length	51.206km
Estimated Construction cost	Rs 164.13 crore
Estimated Project cost	Rs 205.13crore
Lumpsum payment to be paid in 4 equal instalments during the Construction period	Rs 64.652crore (each @ Rs 16.163 crore)
Total Annuity Amount (16 nos. during Annuity payment period)	Rs 283.68 crore (each Rs 17.73 crore)

Head Office: CEG Tower, B-11 (G), Malviya Industrial Area, Jaipur - 302017 (Rajasthan) INDIA Tel : 0141-275801/802/803 Fax : 275806.

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Concessionaire	DBL Mundaragi - Harapanahalli Tollways Ltd.
Independent Engineer	M/s Consulting Engineers Group Ltd.
Date of signing of Concession Agreement	16.06.2015
Concession period	10 yrs including 2 yrs construction period
Date of signing of Supplementary Agreement	29.09.2016
Appointed date	29.09.2016
Scheduled 2-Laning Standard Date	28.09.2018

Pursuant to clause 14.3 of Article 14 of the Concessionaire Agreement, the Concessionaire has notified the Authority vide letter in ref (3) dated 5th Jan 2018 that they have completed 45.43 km of the project length which is 88.72% of total project length of 51.206 Kms and have requested for the issuance of Provisional Certificate of Completion as per the provisions of the Concession Agreement clause 14.3.

Sections of the road notified by the Concessionaire for issuance of Provisional Certificate of Completion are as under:

Link	Sl.No	From	To	Side	Length	Remarks
Link 27C "From Km.00+000 to Km.24+885"						
Link-27C	1	01+230	08+000	BHS	6670	
	2	08+300	09+120	BHS	820	
	3	09+370	10+100	BHS	730	
	4	10+600	13+970	BHS	3370	
	5	14+210	14+590	BHS	380	
	6	14+710	16+530	BHS	1820	
	7	16+915	17+950	BHS	1035	
	8	18+330	23+180	BHS	4850	
	9	24+000	24+300	BHS	300	
	10	24+450	24+885	BHS	435	
Link 27D "From Km.00+000 to Km.26+321"						
Link-27D	11	00+000	00+280	BHS	280	
	12	00+330	13+900	BHS	13570	
	13	14+040	19+880	BHS	5840	
	14	19+950	23+690	BHS	3740	
	15	23+710	23+800	BHS	90	
	16	24+100	25+500	BHS	1400	
TOTAL					**45.430**	**K.M**

In this connection, the following points are brought for the kind perusal:

1. Status of handing over of site:

The site handing over schedule as per the Schedule G of the Concession Agreement signed on 16.06.2015 and subsequently modified in the First Supplementary Agreement signed on 29.09.2016 with the approval of World Bank are as below;

R/6

Schedule G of the Concession Agreement signed on 16.06.2015			Modified clause of Schedule G as in the First Supplementary Agreement signed on 29.09.2016		
Stretch	**Site**	**Handing Over**	**Stretch**	**Site**	**Handing Over**
The stretches in possession of the Authority and is free from land acquisition and encumbrances	The Authority shall give the Concessionaire a minimum 80% of area of the site, free from land acquisition and encumbrances.	On or before the Appointed Date	The stretches in possession of the Authority and is free from land acquisition and encumbrances	The Authority shall give the Concessionaire a minimum 80% of the site free from land acquisition and encumbrances	On or before the Appointed Date
Balance stretches/locations where land acquisition / encumbrance clearance is involved.	The Authority shall give the Concessionaire the balance site, free from land acquisition and encumbrances.	**Within 6 months of the Appointed Date.**	Balance stretches/locations where land acquisition / encumbrance clearance is involved	The Authority shall hand over to the Concessionaire the balance site, free from land acquisition and encumbrances	**Within 8 months of the Appointed Date**

The site handed over to Concessionaire as on Appointed Date and due date of balance site handing over are as below:

Site Handing over details	**% site**
Handing over of site free from land acquisition and encumbrances **on Appointed Date.**	83.33%
Handing over of site free from land acquisition and encumbrances **within 8 months from Appointed Date**	5.39%
Total length handed over before the due date of 8 months from appointed date i.e., 28.05.2017	**88.72%**
Handing over of site free from land acquisition and encumbrances **after 8 months from Appointed Date till now**	3.33%
Total site handed over till date	**92.05%**
Balance site to be handed over as on date	**7.95%**

The 88.72 % of area mentioned above comprises a length of 45.43 Km covering the main carriage way, shoulders and cross drainage structures. Land acquisition and R & R was involved for constructing RCC drain in some town limits, toll plazas, Bus bays and major junctions. The concessionaire has substantially completed 45.43 Km of project highway out of 51.206 km except few minor items as detailed in the punch list-1 **(refer Annexure I)** which are pending mainly due to land acquisition, utility shifting and adjacent land owners obstructions. Balance length of 5.776 km is being handed over progressively as and when land acquisition process completes.

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2. Issue of Provisional completion certificate.

The relevant clause of the Concession Agreement including amendments made with concurrence of World Bank with regard to issue of Provisional Completion Certificate is as below:

10.3.5 The Concessionaire shall complete the construction on the land included in the Appendix for which the Right of Way has been granted within 8 months of the Appointed Date, before Project Completion Date. However, construction on the lands for which Right of Way is granted after the period of 8 months from the Appointed Date shall be completed within a reasonable period to be determined by the Independent Engineer in accordance with Good Industry Practice; provided that the issue of Provisional Certificate shall not be affected or delayed due to any construction remaining incomplete on the date of Tests, on account of Right of Way not having been granted over such part of the Site. It is further agreed that the obligation of the Concessionaire to complete the affected Construction Works shall subsist so long as the Authority continues to pay the Damages specified herein, and upon the Authority ceasing to pay such Damages after giving 60 (sixty) days' notice thereof to the Concessionaire, the obligation of the Concessionaire to complete such works on such part of the Site for which the Right of Way is granted after 8 months of the Appointed Date, shall cease forthwith.

*14.3 The Independent Engineer may, at the request of the Concessionaire and with the concurrence of the Authority in writing, issue a provisional certificate of completion substantially in the form set forth in Schedule-I (the "**Provisional Certificate**") if the Tests are successful and the Project Highway can be safely and reliably placed in commercial operation though certain works or things forming part thereof are outstanding and not yet complete. In such an event, the Provisional Certificate shall have appended thereto a list of outstanding items signed jointly by the Independent Engineer and the Concessionaire (the "**Punch List**"); provided that the Independent Engineer shall not withhold the Provisional Certificate for reason of any work remaining incomplete if the delay in completion thereof is attributable to the Authority.*

In terms of provision of Concession Agreement, the Concessionaire has completed a length of 45.43 kms which is handed over prior to due date which is 8 months from the appointed date i.e., 29.09.2016 to qualify for the issue of Provisional Completion Certificate with minor outstanding works not attributable to concessionaire as detailed in the **punch list-1, *Annexure I***

3. Balance site which is not handed over on or before 8 months from appointed date:
The balance works in the **site which is being handed over after 8 months from the appointed date** has been listed in the **punch list -2, *Annexure II (Balance works).*** Punch list items also cover the incomplete affected works pertaining to Provisional Completion Certificate stretches such as bus-bays,Junction improvements etc.As per the provision of Concession Agreement the balance works as listed in *Annexure-IV* shall be completed after the site is handed over by the Concessionaire within a reasonable period to be determined by the Independent Engineer in accordance with Good Industry Practice. Authority has handed

4/6

over 3.33% of site i.e., 1.69 km progressively after 8 months from the Appointed Date. The works in this reach are under progress.

4. Tests as per Schedule:

Prior to declaration of Provisional Completion, All tests to be undertaken on the project highway or part as per Concession Agreement clause 14.1.2 and Schedule- I. Accordingly the IE and Concessionaire have carried out all the tests in the sections notified by the Concessionaire and monitored and reviewed the results of the Tests and ensured necessary compliance. (Details enclosed as ***Annexure-III***)

5. Quality Assurance:

The part of Project Highway notified by Concessionaire has been constructed as specified in Schedule B and C and in conformity with the Specification and Standards set forth in Schedule –D of the Concession Agreement. The RFIs raised by the Concessionaire on daily basis for the material and construction activities have been verified by the IE.

6. Status of Compliance by the Concessionaire to the Non-Compliance Reports (NCRs):

During the execution of works, several NCRs were issued by the Independent Engineer to the Concessionaire. All lapses, defects or deficiencies observed by the Independent Engineer in the construction of the Project Highway are rectified and all NCRs issued are closed in accordance with the provision of the Concession Agreement, which have been complied.

7. Operation and Maintenance Manual:

In accordance with clause 17.3 of the CA, the Concessionaire has submitted to the Independent Engineer, the "Maintenance Manual" for the regular and preventive maintenance measures of the Project Highway in conformity with the Maintenance Requirements, Safety Requirements and Good Industry Practice. The IE has reviewed the manual and concurred.

8. Environmental Audit Report:

The Independent Engineer has carried out a check and determined conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits

9. Safety Audit Report:

Safety audit of the Project Highway have been undertaken by the Safety Consultant as set forth in Schedule-L, and on the basis of audit, the Independent Engineer has determined conformity of the Project Highway with the provisions of this Agreement.

All the pre-requisites for issuance of the Provisional Certificate of Completion have been carefully examined and all parameters mentioned in the checklist have been certified and complied as in ***Annexure-IV***.

10. Recommendations:

In terms of Concession Agreement the Concessionaire has completed the works substantially on the site handed over prior to due date **28th May 2017**i.e 8 months from the Appointed Date as specified in Schedule B and C and in conformity with the Specification and Standards set forth in Schedule –D of the Concession Agreement .The completed project length 45.43 kms

5/6

with minor outstanding works as detailed in punch list 1 is safe for commercial operation, therefore, Authority is requested for concurring issue of Provisional Certificate of Completion in terms of Concession Agreement clause 14.3 with a direction to complete the punch list items -1 within a period of 90 days.

In view of the above, the project highway can be provisionally declared fit for entry into commercial operation as on **05th February 2018**.

Encl: As above

Yours Sincerely

(Independent Engineer)

CC: 1) Chief Engineer, KRDCL, Thimmaiah Road Cross, Vasanathnagar Bangalore -52 for kind information
2) Col. Sanjay Bajpai Head (Coordination) HQ,-
3) Executive Engineer, KRDCL Division, Hospet for information
4) Team Leader, CEG, Mundargi
5) M/s DBL Mundargi-Harappanhalli Tollways Limted , Plot 5, Inside Govind Narayan Singh Gate, ChunaBhatti, Kolar Road, Bhopal-462026, Madhya Pradesh

c/c

Annexure-I

WCP-05 DESIGN, BUILD, FINANCE, OPERATE, MAINTAIN AND TRANSFER (DBFOMT) OF EXISTING STATE HIGHWAY MUNDARGI – HADAGALI - HARAPANAHALLI IN THE STATE OF KARNATAKA ON DBFOMT ANNUITY BASIS(Link 27C & 27D)

PUNCH LIST -1 FOR -PCOD (Link -27C & 27D)

PUNCH ID	Proposal	Status of Main Structure	Balance/Rectification Works
PL1/1	1 No of Box Culvert in 27C & 1 No of MNB in 27D	Completed	Protection works to be done
PL1/2	Isolated Locations in 27C & 27D	Completed	Cleaning of waterway and the structure, rectification of protection work, providing edge concreting for pitching and Shoulder protection to be done for all Structures.
PL1/3	1 No of MNB Link 27C (11+701)	Not Applicable	Maintenance of existing bridge to be done
PL1/4	1 No of HPC in 27C,4 Nos of HPC in 27D and 2 Nos of MNB in	Completed	Floor Apron to be done (BHS)
PL1/5	1 No of HPC in 27C	Completed	Drainage wall & Protection wall (adjucent to Head Wall) to be done
PL1/6	1 No of HPC in 27C	Completed	RHS-Pipe collars to be matched with headwall. Protection to be done. LHS-Cathpit walls to be constructed.
PL1/7	2 No of HPC in 27C	Completed	Honeycomb to be rectified.
PL1/8	3 Locations in 27C	Carriage way Completed	Connecting RCC Drain & Wheel load Drain not covered at Both ends.
PL1/9	8 mt in 27C and 18 mt in 27D	Carriage way Completed	RCC drain slab to be done
PL1/10	2 Nos in 27D	Carriage way Completed	Electrical Pole Foundation damaged. To be rectified
PL1/11	6 Locations in 27D	Carriage way Completed	Street light pole cables exposed on footpath, to be rectified
PL1/12	50 mt in 27D	Carriage way Completed	Kerb at Toe to be provided.
PL1/13	14+320(LHS)	Not Applicable	Rehabilitation of borrow area, to be done
PL1/14	10 mt in 27C & 60 mt in 27D	Carriage way Completed	Between BT edge to drain paving to be done
PL1/15	2 locations -17+010(LHS), 18+303(RHS)	Not Applicable	Filter media to be provided for ground water recharge pit/bore
PL1/16	16+700(RHS)	Not Applicable	Re-use/Disposal of 20% safely stored scarified bitumen at basecamp
PL1/17	3+636 -27C Widening HPC	Completed	RHS-Honey Comb rectification & Protection works to be done as per standards & approved drawings after clearnce of land owner objection.
PL1/18	18+985 -27C Widening HPC	Completed	BHS- 300mm floor apron to be done after clearnce of land owner objection.
PL1/19	21+861 -27C Reconstruction of MNB	Completed	RHS- Fair of stone pitching & aprons on A1 side (1st span width) to be executed after clearnce of land owner objection.
PL1/20	0+351 -27D Reconstruction of MNB	Completed	LHS- Flexible apron and curtain wall to be done after clearance of water pipeline and Electric pole. RHS- Flexible apron to be done after clearnce of UGD line.
PL1/21	3+247 -27D Reconstruction of Box Culvert	Completed	LHS- Flexible apron to be constructed after clearnce of land owner objection.
PL1/22	4+900 -27D Reconstruction of Box Culvert	Completed	RHS- Protection works to be done after clearnce of electric transformer and land owner objection. LHS- curtain wall constructed to be done per drawing after clearnce of land owner objection.
PL1/23	7+259 -27D Widening MNB	Completed	LHS- Protection works to be done as per drawing after clearance of Electric pole and house compound. RHS- Flexible apron to be done after clearance of land owner's objection
PL1/24	10+866 27D widening as per CA, Reconstruction at Site	Completed	RHS- Protection works to be done after clearance of land owner's objection.
PL1/25	11+867 27D Reconstruction of Box Culvert	Completed	RHS- Protection works to be carried after clearance of Electric pole and pipeline. LHS- Protection works to be carried out after clearnce of land Problem.
PL1/26	20+787 27D Widening HPC	Completed	RHS- Apron to be done after shiting of pipeline.

Concessionaire's Representative

Independent Engineer Representative

Annexure-II

WCP-46 DESIGN, BUILD, FINANCE, OPERATE, MAINTAIN AND TRANSFER (DBFOMT) OF EXISTING STATE HIGHWAY MUNDARGI – HADAGALI - HARAPANAHALLI IN THE STATE OF KARNATAKA ON DBFOMT ANNUITY BASIS(Link-27C & 27D)

PUNCH LIST-2 FOR -PCOD (Link -27C & 27D)

Punch ID	Location	Balance Work
PL2/1	00+000 00+930 (BHS)-27C-Mundargi Town limit	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/2	08+000 08+300 (BHS)-27C-Toll Plaza	Work to be executed after clearance of LA
PL2/3	10+100 10+600 (BHS)-27C-Korlahalli Village	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/4	13+970 14+210 (BHS)-27C-Kumbli village	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/5	14+590 14+710 (BHS)-27C-Water Pipeline	Work to be executed after clearance of Utility shifting
PL2/6	17+950 18+330 (BHS)-27C-Kaginoor Village	Work to be executed after clerance of LA,R&R and Utility shifting
PL2/7	23+180 24+000 (BHS)-27C-Hoovina Hadagali City	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/8	13+900 14+040 (BHS)-27D-Kanahalli Village	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/9	23+800 24+100 (BHS)-27D-Toll Plaza	Work to be executed after clearance of LA
PL2/10	25+554 25+910 (BHS)-27D-Harpanhalli City	Work to be executed after clearance of LA,R&R and Utility shifting
PL2/11	Link-27C Maktumpura (BHS 2 Nos), Bennehalli (BHS 2 Nos), Korlahalli (BHS 2 Nos), Huvina Hadagali (BHS 2 Nos). Link-27D Eradettinahalli (RHS 1 No), Vinobha Nagar (RHS 1 No), Bandri (RHS 1 No).	Bus Bays & Bus Shelter to be executed after clearance of LA and R&R.
PL2/12	Link-27C Korlahalli (BHS), Huvina Hadagali (BHS). Link-27D Nagati basapur (BHS), KM Tanda (RHS), Bandri (RHS), Chikkahalli (RHS), Harapanahalli (BHS)	RCC Drain work to be done after clearnce of LA, R&R and Local objection.
PL2/13	Link-27C Huvina Hadagali (BHS). Link-27D Huvina Hadagali (BHS), Nagati basapur (BHS).	Foot Path and paver blocks to be done after clearance of pipeline and LA.
PL2/14	Link-27C Korlahalli (BHS), Huvina Hadagali (BHS). Link-27D Nagati basapur (BHS), KM Tanda (RHS), Bandri (RHS), Chikkahalli (RHS), Harapanahalli (BHS)	Paved block to be done after clearnce of LA, R&R and Utility shifting.
PL2/15	Link-27C Huvina Hadagali (LHS). Link-27D KM Tanda (BHS)	Toe Kerb and paved blocks to be done after clearnce of LA

Concessionaire Representative

Independent Engineers Representative

ANNEXURE-III

WCP-08 DESIGN, BUILD, FINANCE, OPERATE, MAINTAIN AND TRANSFER (DBFOMT) OF EXISTING STATE HIGHWAY MUNDARGI – HADAGALI - HARAPANAHALLI IN THE STATE OF KARNATAKA ON DBFOMT ANNUITY BASIS(Link-27C & 27D)

Status of Tests as per SCHEDULE-I

Cl No.as per Schedule-I	Test Name	Date of Test	Test Results Submitted by the Concessionaire	Concurrance /Compliance by IE	Status	Remarks
1.2	Visual and Physical Test	12.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/526 dated 06.01.2018	CEG/Mund/WCP-06/Misc/2016-17/592 dated 30.01.2018	Concurred	
1.3	Test Drive	12.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/525 dated 06.01.2018	CEG/Mund/WCP-06/Misc/2016-17/581 dated 30.01.2018	Concurred	
1.4	Riding Quality Test	26.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/521 dated 04.01.2018	CEG/Mund/WCP-06/Misc/2016-17/583 dated 30.01.2018	Concurred	
1.5	Pavement Composition Te	13.12.2017 & 14.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/528 dated 06.01.2018	CEG/Mund/WCP-06/Misc/2016-17/579 dated 25.01.2018	Concurred	
1.6	Cross-section Test	22.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/527 dated 06.01.2018	CEG/Mund/WCP-06/Misc/2016-17/580 dated 30.01.2018	Concurred	
1.7	Structural Test for Bridges	15.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/519 dated 04.01.2018	CEG/Mund/WCP-06/Misc/2016-17/582 dated 30.01.2018	Concurred	Ultrasonic Pulse Velocity Test, Rebound Hammer Test
1.9	Environmental Audit	12.12.2017 & 13.12.2017	DMHTL/IE-CEG/WCP-06/2016-17/520 dated 04.01.2018	CEG/Mund/WCP-06/Misc/2016-17/587 dated 30.01.2018	Reviewed	
1.10	Safety Review	6.01.2018 & 07.01.2018	DMHTL/IE-CEG/WCP-06/2016-17/549 dated 02.02.2018		Reviewed	

Concessionaire's Representative

Independent Engineer Representative

Annexure-IV

Checklist for Independent Engineer regarding Provisional Completion Certificate

While issuing Provisional Completion Certificate for Project -WCP-6 (**Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Mundargi–Hadagali-Harapanahalli in the state of Karnataka on DBFOMT Annuity basis**) Independent Engineer (IE) has satisfied that all provisions and conditions laid down in the Concessionaire Agreement with regard to issue of such Provisional Completion Certificate have been complied with. Such satisfaction or IE shall among various such performances required, also include the following:

Sl. No	Description	Status
1.	The completed stretch of Project Highway (45.43 km out of 51.206 Km) has been constructed as specified in the Schedule-B and Schedule-C and in conformity with the Specifications and Standards set forth in Schedule-D of the Concession Agreement	Complied
2.	All tests have been conducted in accordance with schedule-I and have been witnessed by the representatives of the Authority. The IE shall observe, monitor and review the results of the Tests to determine compliance of the Project Highway with Specifications and Standards. The IE shall ensure that the Tests are successful and the Project Highway can be Safely and reliably placed in commercial operation.	Complied
3	IE shall ensure that the Concessionaire shall comply with the provisions of the Concession Agreement, Applicable Laws and Applicable Permits and conform to Good Industry Practice for securing the safety of the Users.	Complied
4.	Approval of the Competent Authority for proposal /issue of Change of Scope (positive/negative), if any has been obtained or at- least proposal for positive Change of Scope has been referred to the Authority for approval with the recommendations of IE	Complied
5.	In case of the Provisional Completion Certificate, list of outstanding items (Punch List) has been prepared and signed jointly by the Independent Engineer and the Concessionaire. The Punch List shall include only those items of work which are minor in nature and not affecting the safety and reliability of the Project Highway.	Complied
6.	All lapses, defects or deficiencies observed by the Independent Engineer in the construction of the Project Highway are rectified and all NCRs issued are closed in accordance with the provision of the Concession Agreement.	Complied
7.	All Drawings submitted by the concessionaire has reviewed by the Independent Engineer as per Schedule-Q of CA	Complied

Concessionaire Representative

Independent Engineer Representative

Annexure 8: Insurance

पॉलिसी अनुसूची/ *Policy Schedule* - Civil Engineering Completed Risk

Policy Number:
321300441910001999

जारीकर्ता कार्यालय/**Issuing Office**
कार्यालय कोड /Office Code: 321300
कार्यालय पता /Office Address: BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bhopal, Madhya Pradesh - 462022.
State Code 23 , Madhya Pradesh
GSTIN: 23AAACN9967E1ZB
Contact Number: 755 2682822
eMail: 321300@nic.co.in
Mobile Number:

व्यवसाय स्रोत /Business Source: 910355
विक्रय चैनल कोड/**Sales Channel** Code: 91035500000001
नाम /Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
सह दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL MUNDARGI HARAPANAHALLI TOLLWAYS LTD
पता/ Address: NO-77, BEHIND RMP QUARTERS,5TH STAGE, KUVEMPUNAGARA, MYSORE-570023, City: MYSORE, District: MYSORE, State: KARNATAKA, PIN: 570023.
Cell: 9826292328

ग्राहक आईडी /Customer ID: 9701881850
फोन /Phone:
ई-मेल /E-Mail:
पैन /PAN: AAFCD5003J

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

प्रीमियम/ Premium	₹ 16,29,627.00	कवर नोट संख्या और तिथि/ Cover Note Number and Date	NA
CGST	₹ 0.00		
SGST/UTGST	₹ 0.00		
IGST	₹ 2,93,333.00		
केरला बाढ़ उपकर/Kerala Flood Cess	₹ 0.00	प्रस्ताव संख्या और तिथि/Proposal Number and Date	880020032708721 6 Dt. 27/03/2020
कम:जीएसटी_टीडीएस / Less:GST_TDS	₹ 0.00		
पुनःप्राप्ति योग्य स्टाम्प ड्यूटी /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तिथि/Receipt Number and Date	321300811910007666 Dt. 27/03/2020
कुल /Total Amount	₹ 19,22,960.00	पिछली पॉलिसी संख्या और समाप्ती तिथि/ Previous Policy Number and Expiry Date	NA

(Rupees Nineteen Lakh Twenty Two Thousand Nine Hundred Sixty Only.)
Location: State Highway Mundargi ¿ Hadagali - Harapanahalli, Karnataka Gadag, Gadag, 582101.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE	Zone IV	1,54,85,00,000.00	1,00,000.00
2	Roads	Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	8,15,00,000.00	1,00,000.00

लागू खंडों,पृष्ठांकनों एवं वारंटी / Clauses, Endorsements and Warranties Applicable: Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause, Policy is subject to following conditions : POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
3.No Coverage for (Road) Transportaion Tunnels
4.No Coverage for Marine Vessel Impact Damage.
5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Mundargi Hadagali Harapanahalli in the state of Karnataka on DBFOMT Annuity Basis (WCP 6).

Name of the co insured under the policy is Dilip Buildcon Ltd. & KRDCL.
Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS.

Printed on 27/03/2020 by ID: 75159

Page no. 1

INSURANCE

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THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

POLICY STAMP PAID IN CONSOLIDATED AMOUNT VIDE TREASURY DEPARTMENT,GOVT.OF ORDER No.-440,DTD AUGUST,8,2017.

POLICY SCHEDULE FOR EMPLOYEES COMPENSATION INSURANCE

Insured's Name	:	M/S.DILIP BUILDCON LTD.			
Insured's Details			Issuing Office Details		
Customer ID	:	PO64533895	Office Code	:	BHOPAL DO-1 (450100)
Address	:	PLOT NO-5, INSIDE GOVIND NARAYAN SINGH GATE CHUNA BHATTI KOLAR ROAD BHOPAL BHOPAL ,MADHYA PRADESH, 462001	Address	:	C.D.U. - I , BLOCK NO 3, IIND FLOOR, PARYAVAS BHAWAN, ARERA HILLS, BHOPAL,462011
Phone No	:		Phone No	:	07554203271 / 07554203272
E-mail/Fax	:	db@dilipbuildcon.co.in, /	E-mail/Fax	:	nia.450100@newindia.co.in / 07554203274
PAN No	:	AACCD6124B	S.Tax Regn. No	:	AAACN4165CST178
GSTIN/UIN	:	23AACCD6124B2ZD / NA	GSTIN	:	23AAACN4165C1ZZ
	:		SAC	:	997139 (Other non-life insurance services excl RI)

Policy Details					
Policy Number	:	45010036190100000052	Business Source Code		
Period of Insurance	:	From: 08/02/2020 12:00:01 AM To: 07/02/2021 11:59:59 PM	Dev.Off level./Broker/Corp. Agent/Web Aggregator	:	GLOBAL INSURANCE BROKERS PRIVATE. LTD. - (1D5140053) 112700_AON GLOBAL INSURANCE (SI00062348)
Date of Proposal	:	08-Feb-20	Agent/Bancassurance/ Specified Person	:	
Prev. Policy no.	:		Phone No	:	02261485661, 9819676655 / NA
Client Type	:	Corporate	E-mail/Fax	:	girish.prabhu@globalinsurance.co.in, / /

Premium(₹)	GST(₹)	Total (₹)	Total (₹ in words)	Receipt No. & Date
5547	998	6545	RUPEES SIX THOUSAND FIVE HUNDRED FORTY-FIVE ONLY	4501008119000000752 3 - 12/02/20

Details of Employees with monthly wages upto ₹ 8000:

Categories	Sub Categories	No of Employee	Cash Total Wages

Details of Employees with monthly wages above ₹ 8000:

Categories	Sub Categories	No of Employee	Cash Total Wages

Trade Description	Particular of Works	Location Details	Included All Sub - Contractors
Construction of Road and Other civil work	Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Mundargi – Hadagali - Harapanahalli in the state of Karnataka on DBFOMT Annuity Basis (WCP-6)	Design, Build, Finance, Operate, Maintain and Transfer (DBFOMT) of Existing State Highway Mundargi – Hadagali - Harapanahalli in the state of Karnataka on DBFOMT Annuity Basis (WCP-6)	

Contractor/Sub-Contractor Details:

Serial No	Name of Contractor	Description	Categorie	No. of Workers			Amount Wages
				Skilled	Unskilled	Others	

Extensions under the Policy Cover

Name of the Extension	Sub Limit of the Extension	Deductibles of the Extension
Medical Extension	₹50000	NA

Signature valid
Digitally signed by Vishwanath Vaidyanathan
Date: 2020.02.12 16:52:14 IST

Policy No. : 45010036190100000052 Document generated by 37225 at 12/02/2020 16:52:13 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

Page 1 of 2

Signer: ATUL JERATH
Date: Fri, Dec 11, 2020 12:20:41 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/68**	**Prev Policy No**	:
Cover Note No	:	Cover Note Dt	:
Insured's Code	: 120168848	Issuing Office Code	: 171200
Insured's Name	: DBL MUNDARGI HARAPANAHALLI TOLLWAYS LIMITED (GSTIN: 29AAFCD5003J1ZQ)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: "No.77, Behind Rmp Quarters, Kuvempunagara 5th Stage, Mysore, Karnataka, 570023	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA MYSORE 570001	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000170 (1140)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898205111 PHONE NO 0265-2252274,BARODA,GUJARAT,390007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 07/12/2020 TO MIDNIGHT OF 06/12/2021

Collection No & Dt : DC_I_INDCSH 3214001221 - 07/12/2020 GST INVOICE NO :2419689122 UIN :0

Gross Premium : 4,488 GST : 808 Stamp Duty : 1 Total : 5,296

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 99,72,024

1 Location of the Risk : AS PER LIST ATTACHED
Road and bridge stretch connecting from Mundargi to Harapanahalli

KARNATAKA - 583131

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		99,72,024

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -
1) Equipment (other than Winchester Drive) - 5% of claim amount subject to a minimum of Rs.2,500/-

Place : -
Date : 07/12/2020

For and on behalf of
The Oriental Insurance Company Limited

THE NEW INDIA ASSURANCE CO. LTD.
(Government of India Undertaking)

Special Conditions	NO.OF EMPLOYEE-10 UPTO-15000(CASH TOTAL WAGE-18,00,000) ABOVE-15000(CASH TOTAL WAGE-6,00,000) TOTAL SUMINSURED-24,00,000 CATEGORIES-ROAD PAVING,TARRING & ROAD MAKING SUB CATEGORIES-CONSTRUCTION OF ROAD & OTHER CIVIL WORK EMPLOYEE COVERED - SKILLED/SEMI SKILLED/UN-SKILLED, SUPERVISOR, ENGINEERS & CONTACT LABOUR ETC
Special Exclusions	NA
Special Excess/Deductible	NA

The Policy shall be subject to EMPLOYEES COMPENSATION INSURANCE Policy clauses attached herewith.

Clauses	Description

Premium and GST Details

	Rate of Tax	Amount in INR
Premium		₹ 5547.00
SGST	9	499
CGST	9	499
IGST	0	0

In witness whereof the undersigned being duly authorised by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 12th day of February,2020.

For and on behalf of

Date of Issue: 12/02/2020

The New India Assurance Company Limited

Duly Constituted Attorney(s)

Stamp Duty under the Policy is ₹1

Mudrank_____Dt._____consolidated Stamp Fees Paid by Pay Order Number_____vide receipt number_____dt._____.

Tax Invoice No : 45010019P0009347

IRDA Registration Number: 190

Policy No. : 45010036190100000052 Document generated by 37225 at 12/02/2020 16:52:13 Hours.
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001. TOLL FREE No. 1 800 209 1415.

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Annexure 9: Change of Scope

Sl. No.	Description	Unit	As per contract Scope	Completed	Balance	
					To be Completed	To be De-Scope
1	Bus bay	No's	14	6	0	8
2	Bus shelter	No's	14	3	0	11
3	Minor & Major Junctions Improvement	No's	41	36	4	0
4	Structure Protection Work	No's	99	93	0	6
5	Reinforced cement concrete M15 grade Boundary pillars	No's	512	0	0	512

Concessionaire

Annexure 10: Project Photos

339/1
MNB
GX810

SHREM FINANCIAL PRIVATE LIMITED

Development of Mandsaur-Sitamau Road Section (SH-14) in the State of Madhya Pradesh on BOT Basis.

TECHNICAL DUE DILIGENCE REPORT

FEBRUARY, 2021

SUBMITTED BY

RUKY PROJECTS PRIVATE LIMITED
Hyderabad – 500 072
www.rukyprojects.com

Development of Mandsaur-Sitamau Road Section (SH-14) in the State of Madhya Pradesh on BOT Basis.

This document has been issued and amended as follows:

Report No.	Issue	Date	Description
RU-DD Report-Mandsaur – Sitamau	02	February 2021	Technical Due Diligence Report

RUKY Projects Private Ltd has prepared this report in accordance with the instructions of client, for the client's sole and specific use. Any other persons who use any information contained herein do so at their own risk.

RUKY Projects Private Limited
#1403A, Manjeera Trinity Corporate, JNTU-HITEC City Road,
Kukatpally, Hyderabad – 500 072, Telangana, India,
+91 40 4855 7777 / 2304 4777
www.rukyprojects.com

DISCLAIMER AND CONSENT FOR USE

This report has been prepared for the benefit of SHREM FINANCIAL PRIVATE LIMITED (SFPL), the investment Manager of Shrem InvIT (Trust), for and in connection with initial offer of units representing an undivided beneficial interest in the Trust. In Preparing this report, RUKY Projects Pvt Ltd has relied, in whole or in part, on data and information provided by SFPL and **SURYAVANSHI INFRASTRUCTURE PRIVATE LIMITED** which RUKY Project Pvt Ltd has assumed to be accurate, complete, reliable and correct.

This report may be reproduced and included in the preliminary placement memorandum, placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust and may be made available for inspection in the manner specified therein. In connection with the report, the following details in relation to the Technical Consultant may be included in preliminary placement memorandum and the placement memorandum and any other documents prepared in connection with the aforesaid initial offer of units of the Trust.

Technical Consultant:
RUKY PROJECTS PRIVATE LIMITED
Flat No. 1403A, 14th Floor,
Manjeera Trinity Corporate,
JNTU-Hitech City Road, Kukatpally,
Hyderabad – 500072
www.rukyprojects.com

Contact Person of Consultant: Mr. C Ramanaiah
Email: ramana_c@rukyprojects.com
Tel: +91 40 4855 7777

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CHAPTER 1. INTRODUCTION

1.1 General

Suryavanshi Infrastructure Private Limited. (herein after referred to as the "**Concessionaire**") had augmented the existing road into Intermediate carriageway from Mandsaur near ROB to Sitamau near Chambal River Bridge (Up to Rajasthan Boarder) (44 Km length) section of SH-14 (here in after called "**Project Highway**") in the state of Madhya Pradesh on design, build, operate and transfer (BOT), Toll basis in accordance with the terms and conditions set forth in the Concession Agreement executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "**MPRDC**") on July 10, 2007.

Project Highway starts from Mandsaur near ROB (Km.0+000) and terminates at Sitamau near Chambal River Bridge (Km.44+000). Total length of the Project Highway is 44 Km. The Project road passes through plain terrain predominantly agricultural land with pockets of barren lands. Project Location map is given at **Figure 1.1.**

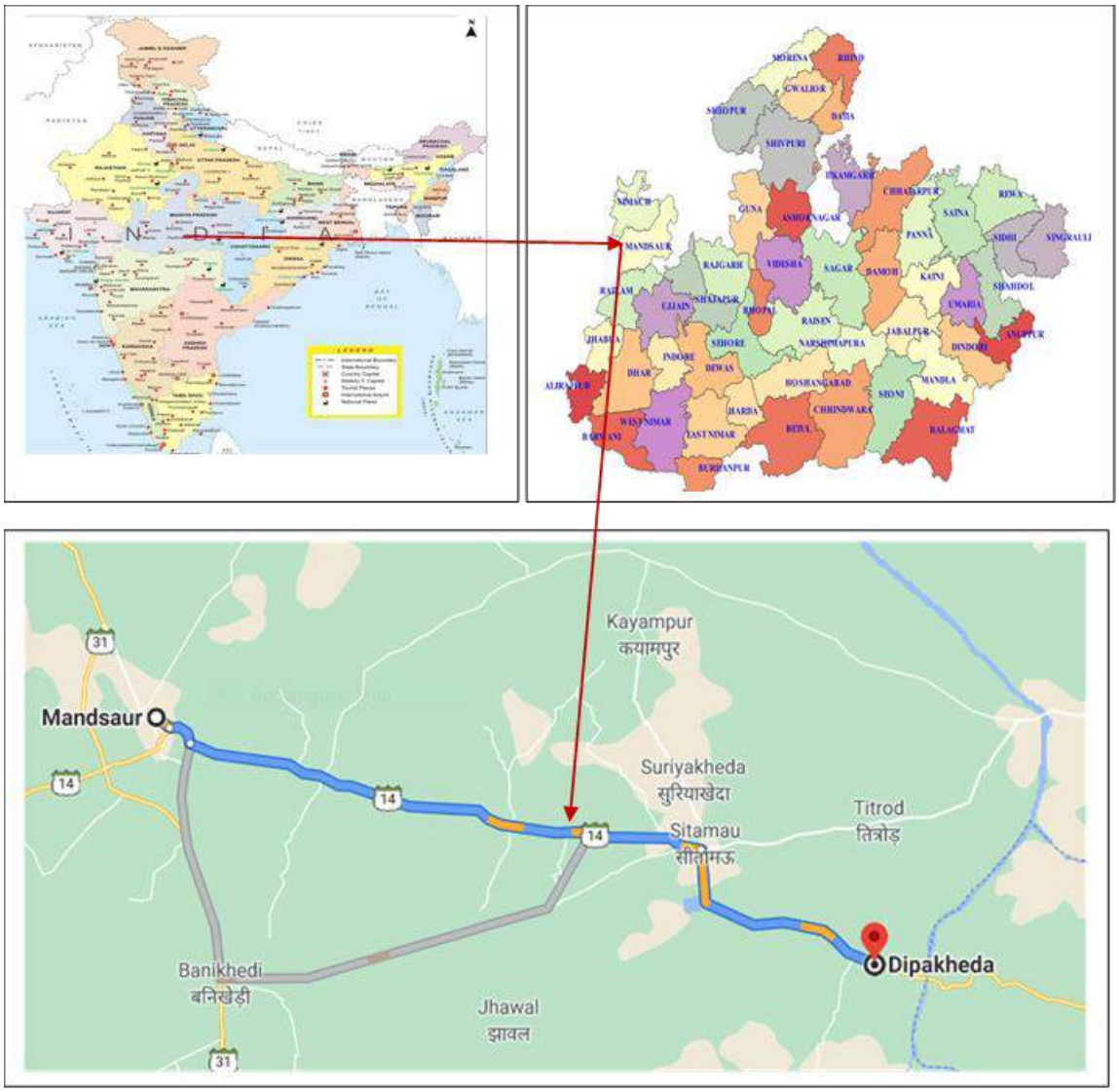

Figure 1.1: Project Location Map

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired SURYAVANSHI INFRASTRUCTURE PRIVATE LIMITED vide agreement dated 26.3.2018.

SHREM FINANCIAL PVT LTD (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Reconstruction, Strengthening, widening & Rehabilitation of Mandsaur-Sitamau from Km. 18+000 to Km. 62+000 on BOT basis
2	Road Type	State Highway
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	Suryavanshi Infrastructure Private Limited
5	Name of the BOT Contractor	Dilip Buildcon Limited
6	Date of LOA	16.03.2007
7	Date of Agreement	10.07.2007
8	Design Length as per Schedule I of CA	44.000 Km.
9	Actual Length Constructed	44.000 Km.
10	Project Lane Configuration	Intermediate carriageway with Hard Shoulder
11	EPC Cost	Rs. 27.87 Cr.
12	Grant	Rs. 9.9 Cr
13	Nature of contract	BOT (Toll)
14	Toll collected by	Concessionaire
15	Concession Period*	25 years from the Commencement date
16	Commencement date	November 27, 2007
17	Concession End Date	November 26, 2032
18	Construction Period	15 months from the Commencement date.
19	Schedule Completion Date	February 26, 2009
20	Date of issuance of Provisional Certificate (Commercial Operation Date)	February 05,2009

1.3 Scope of consultancy services

The scope of work includes providing Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the consultancy work order is listed below:

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

The salient features of the Project as per Schedule I of Concession Agreement (CA) including Change of scope are listed in the following Table.

Table 2.1: Salient Features

S No	Particulars	As per CA	As per COS*/Site requirement	As per Site
1	Total Length of Intermediate (Flexible)	43 Km	-	43 Km
2	Total Length of 5.5 to 7m wide (Flexible)	1 Km	-	1 Km
3	Toll Plaza	1 No.	-	1 No.
4	Major/Minor Junction	13 Nos.	-	13 Nos.
5	Major Bridges	1 No.	-	1 No.
6	Minor Bridges	3 Nos.	-	4* Nos.
7	Pipe Culverts	4 Nos.	-	27* Nos.
8	Slab Culverts	35Nos.		15* Nos.

*Additional structures were constructed as per site requirement.
*As per site requirement and additional 1 Minor Bridge and 23 Pipe Culverts are constructed.
*As per Site condition 20 nos. of Slab Culverts are not constructed.

2.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the Typical Cross Sections shown below as per schedule, during the construction.

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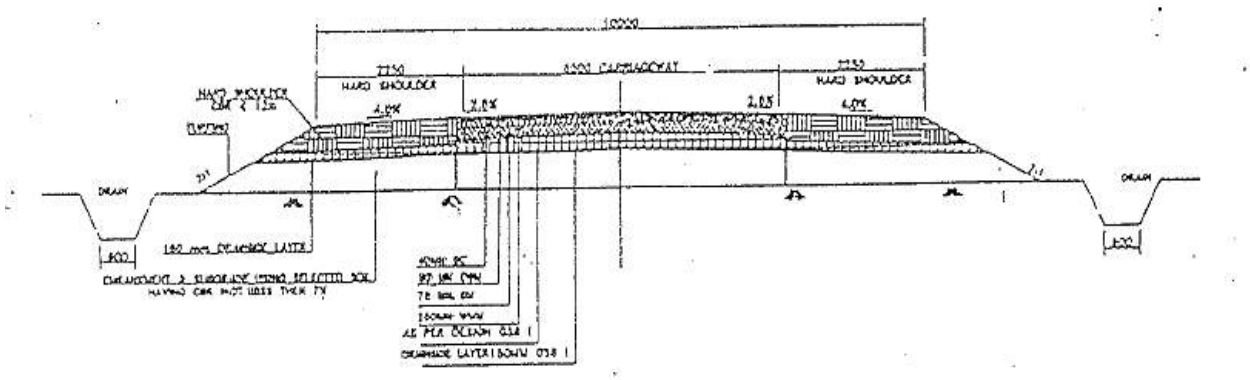

Figure 2.1: TCS-A of Schedule I of CA

Cross section for new construction (5.5m Carriageway + 2.25m Hard shoulder on both sides)

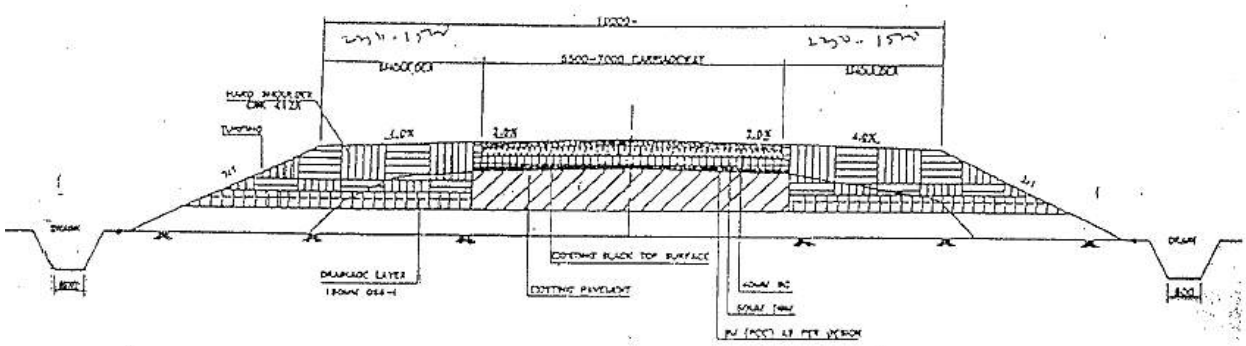

Figure 2.2: TCS- C of Schedule I of CA

Overlay on Existing Pavement (5.5m to 7m Carriageway + 2.25m to 1.5m on both sides)

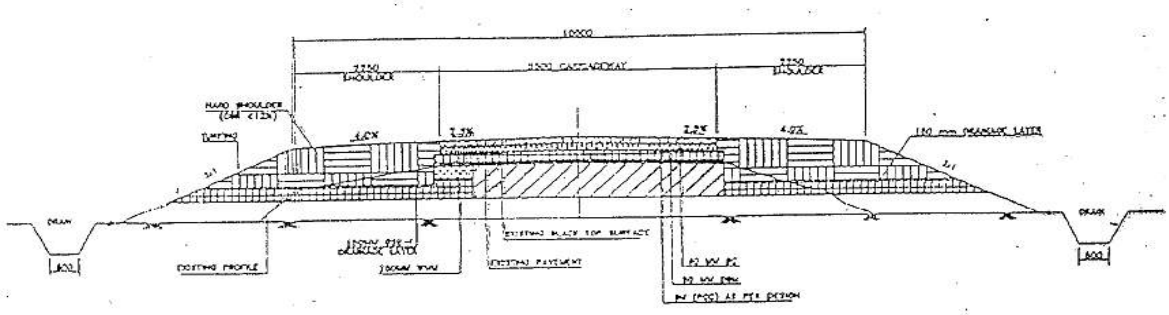

Figure 2.3: TCS-D of Schedule I of CA

(Overlay with widening (Both side) (5.5m Carriageway + 2.25m Hard shoulder on both sides)

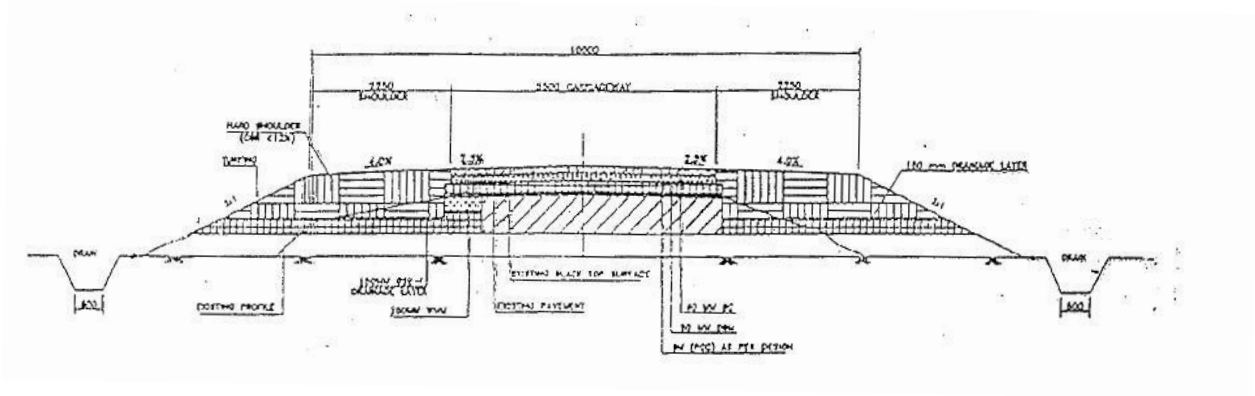

Figure 2.4: TCS-E of Schedule I of CA

Overlay with one side widening (5.5m Carriageway + 2.25m Hard shoulder on both sides)

As built drawings are verified and found in accordance with TCS.

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S No	From Chainage (Km)	To Chainage (Km)	Type of TCS
1	0+000	2+000	TCS-E of Schedule I of CA
2	2+000	10+000	TCS-D of Schedule I of CA
3	10+000	11+000	TCS-C of Schedule I of CA
4	11+000	12+000	TCS-D of Schedule I of CA

S No	From Chainage (Km)	To Chainage (Km)	Type of TCS
5	12+000	16+000	TCS-D of Schedule I of CA
6	16+000	19+000	TCS-D of Schedule I of CA
7	19+000	21+000	TCS-E of Schedule I of CA
8	21+000	43+000	TCS-D of Schedule I of CA
9	43+000	44+000	TCS-A of Schedule I of CA

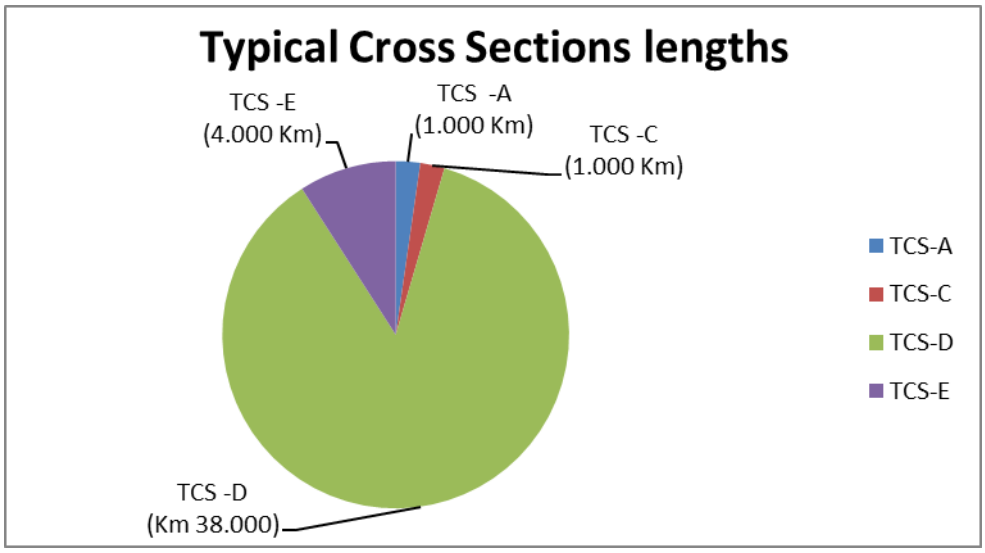

Figure 2.5: Pictorial Diagram of TCS Lengths.

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the Carriage way and to avoid accumulation of drainage from road side community on the Carriage Way, side drains are constructed along the main carriage way on both flanks as specified in Schedule I in conjunction with Schedule -J of the Concession Agreement.

2.4 Service Roads:

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule I of the Concession Agreement.

2.5 Bypass/Realignment:

There are no Bypass/Realignment in the Project, as per provisions of Schedule I of the Concession Agreement

2.6 Summary of the Carriageway and PavementDetails:

Table 2.3: Summary of Carriageway and pavement Details

S No.	Description	Flexible	Rigid	Remarks
1	Total Length of Intermediate (Flexible)	43 Kms.	---	Fig.I.1, Fig.I.3 & Fig.I.4 of Schedule I of CA
2	Total Length of 5.5 to 7m wide (Flexible)	1 Kms.	---	Fig.I.2 of Schedule I of CA
3	Total Length of the	44.000	---	

S No.	Description	Flexible	Rigid	Remarks
	Project	Kms.		
TYPE OF ALIGNMENT				
4	New Alignment	---	---	
5	Realignment	---	---	
6	Strengthening	---	---	
7	Reconstruction	44.000 Kms.	---	
8	Total Length of the Project	44.000 Kms.	---	

2.7 Summary of Structures:

Summary of Structures as per provisions of schedule B of the CA is given below

Table 2.4: Summary of Structures:

S No	Description	Nos.
1	Major Bridges	1 No.
2	Minor Bridges	3 Nos.
3	Hume Pipe Culverts	4 Nos.
4	Slab Culverts	35 Nos.

2.8 Toll Plazas:

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Km. 21+800. Salient features of Toll Plaza are provided below.

- Each side comprises of, one normal lane and one extra wide lane and one lane for bikes.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule J of CA having facilities like lighting, water supply and firefighting Arrangements.
- CCTV Cameras are installed and monitored in administrative building.

2.9 Bus shelters and truck lay byes:

There is no Bus Shelters and Truck lay Byes in the Project, as per provisions of Schedule I of the Concession Agreement.

Km. 16+000

Km. 20+800

Km. 21+000

Km. 30+000

Figure 2.6: Photos Representing Existing Road Features

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the following sections.

3.2 Road Inventory

Inventory of the project road was carried out physically and the same is summarized in the following table. Few representative photographs are presented below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1.	Terrain	Plain Terrain
2.	Land Use	Most of the land is agricultural
3.	Total Length of the Project 2 lane	44.000 Km.
4.	Earthen shoulder	1 m to 1.5 m Width on site
5.	Toll Plaza	Km.21+800
6.	Sign boards	Sign boards are provided as per requirement
7.	Road Markings	Lane markings are provided as per requirement
8.	Street Lighting	Highway lighting provided as per requirement

3.3 Pavement Condition

Pavement condition survey was carried out on the project road, based on observations supplemented with simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey:

The survey on general pavement condition was primarily undertaken by means of slow drive- over survey and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition is measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
  - Cracking (% of surface area)
  - Ravelling (%of surface area)
  - Potholes (%of surface area
  - Patching (%of surface area)
  - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
  - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good**.** The field measurements of the Pavement Condition survey are tabulated in the standard proforma as per IRC: SP-19 and is given in **ANNEXURE 1.** The summary of Pavement condition is given below.

Table 3-3: Pavement condition summary

From (km.)	To (km.)	Length (kms)	Condition
0+000	44+000	44.000	Good

Km. 10+559

Km. 27+170

Km. 30+000

Km. 32+900

Figure 3.1 Representative Photos of Pavement Condition.

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The details of structures at site is mentioned below.

Table 4.1 List of Structures

S. No.	Type of Structure	Numbers
1	Major bridges	01 Nos
2	Minor Bridge	04 Nos
3	Pipe culverts	27 Nos
4	Slab/Box Culverts	15 Nos

There is one Major bridge in the project stretch. The total length of the bridge is 144.5m with 17 spans of 8.5m. The superstructure is of RCC solid slab. The substructure is of wall type Course Rubble (CR) masonry piers and abutments, resting on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.**

The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.3 Details of Major Bridges

The total length of the major bridge at Km 5+400 is 144.5m with 17 spans. The superstructure is of RCC solid slab. The substructure is of wall type Course Rubble (CR) masonry piers and abutments, resting on open foundations. Superstructure is seated on Tar paper bearings. Expansion joints are of Buried type. Steel railings have been provided on both sides of the deck.

Table 4.2 List of Major Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	5+400	17 x 8.5m	144.5

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, drainage spouts are to be carried out.

4.4 Details of Minor Bridges

There are 04 Nos minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and RCC Girders and the substructure is RCC/PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are tar paper and elastomeric bearings. RCC crash barriers are provided on all structures.

Table 4.3 Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span (m)	Total Length of Bridge (m)	Description
1	7+863	2x4.8	9.6	It has RCC solid slab superstructure supported on RCC/PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tarpaper Bearings and buried type expansion joints.
2	16+095	3x16.6	49.8	It has RCC Girder type superstructure supported on RCC/PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Elastomeric Bearings and buried type expansion joints.
3	22+333	3 x 6.1	18.3	It has RCC solid slab superstructure supported on RCC/PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tarpaper Bearings and buried type expansion joints.
4	27+098	2 x 4.7	9.4	It has RCC solid slab superstructure supported on RCC/PCC wall type piers and abutment. Other features are RCC crash barrier, bituminous wearing coat, and Tar paper Bearings and buried type expansion joints.

Km. 7+863

Km. 16+095

Km. 22+333

Km. 27+098

Figure 4.1: Representative photos for minor bridges

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good. For some of the pipe culverts vegetation and vent cleaning is required. In general, the conditions of all the structures are found satisfactory. The detailed condition of the same are given the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3.**

4.5.1. Details of the Slab/ Box Culverts

There details of slab/Box culvert in the project stretch are given below.

Table 4.4 List of Slab/Box Culverts

S. No.	Chainage (Km.)	Span (m)	Vent Size (m)
1	0+400	2 x 2.9	1.00
2	5+700	1 x 1.8	1.20
3	6+558	1x3.4	1.50
4	10+558	1x3.4	1.20
5	23+150	2 x 4.9	2.50
6	30+440	1 x 5.7	2.50
7	31+650	1 x 3.9	1.50
8	31+950	1 x 5.6	2.00
9	32+346	1 x 7	2.00
10	32+909	1 x 3.2	1.50
11	34+160	1 x 6.9	1.80
12	35+970	1 x 5.6	2.10
13	36+240	1 x 5.6	2.00
14	36+535	1 x 5.6	1.60
15	39+762	1 x 6.3	3.00

The general condition of above slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

Km. 23+150

Km. 30+440

Km. 35+970

Km. 36+535

Figure 4.2: Representative photos of Slab Culverts

4.5.1. General Description of the Pipe Culverts

The details of the pipe culverts in the project stretch are given below.

Table 4.5: List of Pipe Culverts

S. No.	Chainage (Km.)	No. of Row/Dia.(m)
1	2+450	1 x 1.0
2	3+440	1 x 1.2
3	10+250	1 x 1.2
4	12+500	1 x 1.2
5	28+470	1 x 1.0
6	28+820	1 x 1.0
7	28+980	1 x 1.0
8	29+240	1 x 1.0
9	29+100	1 x 1.0
10	30+550	1 x 1.0
11	37+600	1 x 1.0
12	38+650	1 x 1.0
13	40+850	1 x 1.0
14	41+320	1 x 1.0

S. No.	Chainage (Km.)	No. of Row/Dia.(m)
15	1+150	2 x 1.0
16	6+900	2 x 1.2
17	13+062	2 x 1.2
18	18+880	2 x 1.2
19	19+920	2 x 1.2
20	24+940	2 x 1.2
21	27+420	2 x 1.0
22	39+220	2 x 1.0
23	42+170	2 x 1.0
24	12+060	3 x 1.2
25	18+450	3 x 1.2
26	27+823	3 x 1.0
27	41+850	3 x 1.0

The general condition of above slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5.PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design validation

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the surface with successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design/Adopted Parameters
1	Sub Grade CBR (%)	8%
2	Design Life (Years)	25 years
3	Design Traffic (MSA)	30 MSA
4	Surface course (BC)	40mm
5	Binder course (DBM)	100 mm
6	Base course (WMM)	250 mm
7	Sub Base course (GSB)	200 mm

5.3 Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”.

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

Table 5.2: Real Time Traffic from COD and Project Traffic Current years with 5% growth for CMSA

FY Year	AADT in Vehicles					CVPD (Veh.)	MSA	CMSA	Year	Remarks
	Car	LCV	BUS	2-AT	MAV					
2016	997	566	99	47	129	840	0.81	0.81	9	Actual
2017	1026	501	95	45	139	780	0.75	1.55	10	Actual
2018	937	397	75	45	159	676	0.65	2.20	11	Actual
2019	1082	466	76	39	151	732	0.70	2.90	12	Actual
2020	1216	403	69	35	146	653	0.63	3.53	13	Actual
2021	1276	424	72	37	153	686	0.66	4.18	14	Projected
2022	1340	445	76	39	161	720	0.69	4.87	15	Projected
2023	1407	467	80	41	169	756	0.72	5.60	16	Projected
2024	1478	490	84	43	178	794	0.76	6.36	17	Projected
2025	1552	515	88	45	186	834	0.80	7.16	18	Projected
2026	1629	541	92	47	196	876	0.84	8.00	19	Projected
2027	1711	568	97	49	206	919	0.88	8.88	20	Projected
2028	1796	596	102	52	216	965	0.92	9.80	21	Projected
2029	1886	626	107	54	227	1014	0.97	10.78	22	Projected
2030	1980	657	112	57	238	1064	1.02	11.79	23	Projected
2031	2079	690	118	60	250	1118	1.07	12.87	24	Projected
2032	2183	725	124	63	262	1173	1.12	13.99	25	Projected

Based on the above actual traffic, estimated MSA at 14 years, 20 years and 25 years are 4.18, 8.88 and 13.99 of TP respectively.

Traffic considered in pavement design is more than projected traffic evaluated based on actual traffic up to 2020. Hence the pavement design adopted is found in order.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 30 MSA for a design life of 25 years for Bituminous layers and Granular layers (up to end of year 2032), whereas the estimated traffic is 4.18 MSA, 8.88 MSA and 13.99 MSA for 14 years 20 years and 25 years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I, II & III of design life (as per pavement design report) and prior to the end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of BC. The detail maintenance schedule is summarized below.

Routine maintenance - Every year
Periodic Renewal for Flexible Pavement - Proposed on or before 2021-22.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as "the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users".

Road Safety is a multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals. Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC:SP- 88	Manual of Road Safety Audit

6.2 Road Safety Audit

During the site visit, it is observed that all safety items are provided as shown in the following table

S. No.	Item Description		Status	Condition
1	Sign Boards	Chevron signs	Available as per site requirement	Good
		Village sign Board	Available as per site requirement	Good
		Informatory Boards	Available as per site requirement	Good
		Object Hazard Markers at culverts	Available as per site requirement	Good
2	Road Marking	Lane Marking	Available as per site requirement	Fair

S. No.	Item Description		Status	Condition
3	W Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Km. 1+650

Km. 7+683

Km. 16+000

Km. 20+800

Km. 23+150

Km. 32+900

Figure 6.1 Representative Photos during road safety audit

6.3 Conclusion

Safety arrangements are made for road users along the Project road are found to be in conformity with project road requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the maintenance period.

CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll Plazas on the project road at Km.21+800. Each side comprises of 1 normal lanes, 1 extra wide lane and 1 bike lane. The lane width in normal lanes was 3.2 m and extra wide lane was 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza administrative building is G+1 RCC building with 8 rooms one of which is used as control room, one for UPS and one for Pantry.

7.2 Tolling Equipment and Control Room Equipment

List of equipment provided at toll plaza and control room is given below.

Table 7.1 List of Equipment at Toll Plaza and Control Room

S. No.	Item	Nos.
1	TLC (Toll lane Controller)	4
2	Monitor	4
3	Printer	4
4	Keyboard	4
5	CCTV Booth	4
6	Intercom-S	4
7	LPC	4
8	IC Camera	4
9	RFID	4
10	Barrier	4
11	Old Server	1
12	Technova Server	1
13	Check Post Server	1
14	Monitor	1
15	Keyboard	1
16	Monitor	1
17	Manager System	1
18	Keyboard	1
19	Monitor	1
20	WIFI HHT-Check Post	2
21	Fastag HHT	2
22	MPRDC System	1
23	Audit System	1
24	Keyboard	1
25	Monitor	1
26	Scanner	1
27	Printer	1
28	Biometric Machine	1
29	Intercom-M	1
30	Wifi-Router Tenda	1
31	Wifi-Router- CHECK POST	1
32	CCTV-Manager Room	1
33	CCTV- Server Room	1

S. No.	Item	Nos.
34	NVR	1
35	POE Switch	1
36	LED	1
37	HHM(Hand Held Machine)	2
38	CCTV	1
39	PTZ-LHS	1
40	PTZ-RHS	1
41	Check Post Booth CAMRA	1
42	PTZ- CHECK POST	1

7.3 Vehicles

The list of vehicles, which were observed at site, for operation of Highway and Toll Plaza are presented below.

Table 7.2 List of Vehicles

S. No.	Vehicle Type	No.
1	Patrol Vehicle	1
2	Ambulance	1

Toll Plaza

Toll Building

Figure 7.1: Representative Photos of Toll plaza at 21+800

CHAPTER 8. TOLL REVENUE

8.1 Toll Revenue Calculations

In accordance with clause 6.1, the Concessionaire entitled to collect appropriate fee from the users.

Accordingly, the Concessionaire provided toll plaza wise details. Based on the data made available the summarized annual classified Traffic census details for the past eleven years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Annual Average Compound Growth Rate)

Table 8.1: Year wise Traffic (Vehicles) Details

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2009	138294	62661	46931	13750	26118	287754
2010	190847	105155	61533	21021	35873	414429
2011	225591	123640	65973	18951	53747	487902
2012	242408	152182	89654	21953	39829	546026
2013	316222	212567	79645	26332	54486	689252
2014	351799	203761	53506	23132	60057	692255
2015	364751	207143	36311	17053	47093	672351
2016	374672	182830	34582	16487	50647	659218
2017	342046	144739	27390	16509	58096	588780
2018	394754	169919	27785	14341	55017	661816
2019	444948	147668	25199	12820	53454	684089
AACGR*						**10.06%**

* AACGR - Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 17.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8.2.

Table 8.2: Summary of 2019-20 Tollable traffic and revenue collected at Toll Plaza

S. No.	Details	No. of Vehicles	Fee Collected (in lakh Rs.)
1	Car	245197	8581895
	Local S.J. car	21867	393606
	Local Personal Car	10959	287665
2	Mini Bus	89557	7522788
	Local S.J. Mini Bus	11974	502908
3	Bus	17825	3101550
	Local S.J. Bus	1308	113796
4	Truck	9390	1962510
	Local S.J. Truck	2264	237720
5	Heavy Truck	46721	19482657
	Local S.J. Heavy Truck	5098	1065482
	Grand Total	**462160**	**43252577**

Note: S.J.-Single Journey

The figures shown in Table 8.1 are Real time traffic data on project road for the past eleven years and the growth rate is calculated to be 10.06%. It is pertinent to note that the figures given in table 8.1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8.2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (table 8-2) is considered as a base year traffic and the projected traffic growth rate is restricted to 5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

Table 8.3: Projected traffic

FY Year	AADT in Vehicles					CVPD* (Veh.)	AADT in PCU					CVPD* (PCU)	Remarks
	Car	LCV	BUS	2-AT	MAV		Car	LCV	BUS	2-AT	MAV		
PCU Factor							1	1.5	3	3	4.5		
2020	732	278	52	32	142	504	732	417	157	96	639	1309	Actual
2021	768	292	55	34	149	530	768	438	165	101	671	1375	Projected
2022	807	307	58	35	157	556	807	460	173	106	704	1443	Projected
2023	847	322	61	37	164	584	847	483	182	111	740	1516	Projected
2024	889	338	64	39	173	613	889	507	191	116	777	1591	Projected
2025	934	355	67	41	181	644	934	533	201	122	815	1671	Projected
2026	981	373	70	43	190	676	981	559	211	128	856	1754	Projected
2027	1030	391	74	45	200	710	1030	587	221	135	899	1842	Projected
2028	1081	411	77	47	210	745	1081	616	232	142	944	1934	Projected

FY	AADT in Vehicles					CVPD*	AADT in PCU					CVPD*	Remarks
2029	1135	432	81	50	220	783	1135	647	244	149	991	2031	Projected
2030	1192	453	85	52	231	822	1192	680	256	156	1041	2132	Projected
2031	1251	476	90	55	243	863	1251	714	269	164	1093	2239	Projected
2032	1314	500	94	57	255	906	1314	749	282	172	1147	2351	Projected
2033	1380	525	99	60	268	951	1380	787	297	181	1205	2469	Projected

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 Toll Revenue Calculations

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in table 8.4

Table 8.4: Toll Revenue inputs

Particular	Toll plaza
Location	Km.21+800
4 lane length in km	0
2 lane length in km	44
Agreement Date	30-06-2007
Appointed Date	27-11-2007
Concession period	25
Commercial operation date	30-01-2009
Concession End Date	26-11-2032
Traffic study year	2020
Vehicle Type	**AADT (Veh.)**
Car/Jeep/Van	732
2-axle Bus	278
LCV/LGV	52
2A-Truck	32
MAV (2A-6A)	142
Growth Rate (%)	5%

The split trip type based on the available toll data from Concessionaire is used to derive the annual toll collection for each plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Table 8.5 Toll Revenue Estimated (in Rs. lakhs)

Financial Year	Annual Revenue of TP @ Km.21+800	Remarks
2019-20	432.526	Actual
2020-21	472.664	Projected
2021-22	515.110	Projected

Financial Year	Annual Revenue of TP @ Km.21+800	Remarks
2022-23	560.413	Projected
2023-24	609.593	Projected
2024-25	661.851	Projected
2025-26	717.811	Projected
2026-27	778.104	Projected
2027-28	843.836	Projected
2028-29	912.324	Projected
2029-30	986.189	Projected
2030-31	1064.684	Projected
2031-32	1148.563	Projected
2032-33	814.483	240 Days

CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

As per Chapter XVI of the Concession Agreement (CA), the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in the Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines and instructions with respect to toll system.

9.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
2 Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
3 Carrying out preventive and periodic maintenance of the Project road;
4 Undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;

6 Functioning of the lighting system;
7 Functioning of the Patrolling System
8 Functioning of rescue and medical aid services
9 Ambulance as and when required
10 Functioning of the Project Facilities
11 Administrative, Operational and Maintenance Base Camp
12 Truck Lay byes
13 Pickup Bus stops / Bus Bays
14 Protection of the environment and provision of equipment and materials therefor;
15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
16 Complying with Safety Requirements in accordance with Chapter XVIII.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year. Road maintenance can be carried out in four ways as listed below.

1. Preventive Maintenance
2. Routine Maintenance
3. Periodic Maintenance
4. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance:

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as "functional overlays," as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a "structural overlay" they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 9.1: Schedule and status of for Periodic Maintenance

S. No.	Major Maintenance	Schedule	Status at site
1	1st Periodic Maintenance	2016	Completed
2	2nd Periodic Maintenance Phase I	2021	Planned to execute
3	2nd Periodic Maintenance Phase II	2022	Planned to execute
4	3rd Periodic Maintenance	2028	Planned to execute
5	4th Periodic Maintenance	2033	Planned to execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

a. Culvert and bridge repairs
b. Retaining wall repairs and construction;
c. Construction of Diversions;
d. Floodway repairs; and
e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

9.6.1. Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of January 2020. As per Schedule M of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

9.6.2. Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in January 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5.**

Table 9.2 Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.149	0.126		0.45	**0.72**
2021	0.153	0.130	1.81	0.46	**2.55**
2022	0.158	0.134	4.36	0.47	**5.13**
2023	0.162	0.138		0.49	**0.79**
2024	0.167	0.142		0.50	**0.81**
2025	0.172	0.146		0.52	**0.84**
2026	0.177	0.151		0.53	**0.86**
2027	0.183	0.155		0.55	**0.89**
2028	0.188	0.160	7.31	0.57	**8.22**
2029	0.194	0.165		0.58	**0.94**
2030	0.200	0.170		0.60	**0.97**
2031	0.206	0.175		0.62	**1.00**
2032	0.212	0.180		0.64	**1.03**
2033	0.143	0.122	8.39	0.43	**9.09**
Total	**2.463**	**2.094**	**21.87**	**7.41**	**33.84**

CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Chapter II)

Chapter II provides the scope of work, which includes the following.

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-J.

- Operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA)

- Performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time.

10.3 Conditions precedent (Chapter IV)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

- Provide performance security to the Authority as per Cl.5.1
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule A
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

10.4 Performance Security (Chapter V)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date

Performance Security shall be released upon the Concessionaire expending on Project Construction an Aggregate sum that is not less than 50% of the Total Project Cost and 100% of its equity as certified by IE and auditors of concessionaire.

10.5 Major Obligations of the Concessionaire (Chapter VII)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the CA

10.6 Provisional Completion Certificate (Chapter XIII)

- A section of the project shall be deemed to be completed to open for traffic only when the completion certificate or provisional certificate for that section is issued in accordance with the Cl 15. Copy enclosed at **ANNEXURE-6.**

10.7 Change of scope (Chapter XV)

No change of scope proposals was initiated during construction period.

10.8 O&M Obligations of the Concessionaire (Chapter XVI)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.9 Project monitoring Fee

As per clause 6.10.3, Project Monitoring fee shall be paid by the Concessionaire at the rate of 1% of annual toll collected for the first ten years. Thereafter 2% from 11th to 15th year and 3% for remaining concession period.

10.10 Maintenance Requirements (Clause 16.2)

The Contractor shall procure that at all times during the Operations period; the Project road conforms to the maintenance requirements set forth in Schedule M of CA (The "**Maintenance Requirements**").

10.11 Maintenance Manual (Clause 16.2)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the "**Maintenance Manual**") for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority

and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

10.12 Maintenance Programme (Clause 16.3)

- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

10.13 Monthly status reports (Chapter XVII)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.14 Monthly Fee Statement (Clause 17.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee.

10.15 Grant/Subsidy (Chapter XXII)

MPRDC agrees to pay to the concessionaire grant or subsidy as cash supported by way of outright grant equal to the sum set forth in the bid of the bidder and accepted by MPRDC namely Rs. 9.9 Crores in accordance with the province of this class-XXII.

10.16 Force Majeure (Chapter XXVIII)

Non-political event mean act of God or events beyond the reasonable control of the affected party.

10.17 Change in Law (Chapter XXXI)

If as a result of change in law, the concessionaire suffers an increase in costs or reduction in revenues or other financial burden, the aggregate financial effect of which exceeds Rs. 35 Lacs or 0.5% of the realizable fee whichever is higher.

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 26.1 of the Concession Agreement, the Concessionaire shall affect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks. Copy of Insurances are enclosed at **ANNEXURE-7.**

Table 11.1 Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Electronic Equipment Insurance Policy schedule	Oriental Insurance Company Ltd	171200/44/2021/50	7.10.2020	6.10.2021	EEI Equipment installed in the Project Highway
Fire Industrial All Risk Policy	Oriental Insurance Company Ltd	171200/11/2021/395	4.02.2021	3.02.2022	Roads Inclusive of Service Road, Structures, Bridges (Major, Minor, Railway, River Including all Other Bridges) , Underpasses, Culverts, drainages, Utilities, Slabs Box, Causeways, Machineries
Standard Fire & Special Perils Policy	Oriental Insurance Company Ltd	171200/11/2021/394	4.02.2021	3.02.2022	Toll Plaza Building & Booths, TMS, HTMS, Office & IT Equipment, Road Furniture, Fixtures, Electrical Poles, Lighting & Fittings, Signboard, Safety/concrete/protection barrier, gantry various equipment.
Employees Compensation Insurance Policy	HDFC ERGO General Insurance Company Ltd	31142033879769000 00	19.5.2020	18.05.2021	All categories of Employees of the Contractor & sub-contractor engaged in the Project

CHAPTER 12. CONCLUSION

12.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

General condition of Bridges is good. No major structural defects were noticed. General condition of Culverts is good. Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

12.4 Traffic Growth

Based on real time traffic, the traffic growth observed is 10.06%, whereas 5% growth is considered while evaluating forecast of traffic volumes.

12.5 Project Facilities:

Toll Plaza is located at Km. 21+800 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Medical Aid posts found in functional condition. Avenue plantation and landscaping at Toll Plaza is provided and being maintained.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of signboards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance will be carried out in 2021, 2028 and 2033.

12.8 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work, being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

ANNEXURES

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
0+000	1+000								G		E	F	F	ULD	PF	
1+000	2+000								G		E	F	F	ULD	PF	
2+000	3+000								G		E	F	F	ULD	PF	
3+000	4+000								G		E	F	F	ULD	PF	
4+000	5+000								G		E	F	F	ULD	PF	
5+000	6+000								G		E	F	F	ULD	PF	
6+000	7+000								G		E	F	F	ULD	PF	
7+000	8+000								G		E	F	F	ULD	PF	
8+000	9+000								G		E	F	F	ULD	PF	
9+000	10+000								G		E	F	F	ULD	PF	
10+000	11+000								G		E	F	F	ULD	PF	
11+000	12+000								G		E	F	F	ULD	PF	
12+000	13+000								G		E	F	F	ULD	PF	
13+000	14+000								G		E	F	F	ULD	PF	
14+000	15+000								G		E	F	F	ULD	PF	
15+000	16+000								G		E	F	F	ULD	PF	
16+000	17+000								G		E	F	F	ULD	PF	
17+000	18+000								G		E	F	F	ULD	PF	
18+000	19+000								G		E	F	F	ULD	PF	
19+000	20+000								G		E	F	F	ULD	PF	
20+000	21+000								G		E	F	F	ULD	PF	
21+000	22+000								G		E	F	F	ULD	PF	
22+000	23+000								G		E	F	F	ULD	PF	
23+000	24+000								G		E	F	F	ULD	PF	
24+000	25+000								G		E	F	F	ULD	PF	
25+000	26+000								G		E	F	F	ULD	PF	
26+000	27+000								G		E	F	F	ULD	PF	
27+000	28+000								G		E	F	F	ULD	PF	
28+000	29+000								G		E	F	F	ULD	PF	
29+000	30+000								G		E	F	F	ULD	PF	
30+000	31+000								G		E	F	F	ULD	PF	
31+000	32+000								G		E	F	F	ULD	PF	
32+000	33+000								G		E	F	F	ULD	PF	
33+000	34+000								G		E	F	F	ULD	PF	
34+000	35+000								G		E	F	F	ULD	PF	
35+000	36+000								G		E	F	F	ULD	PF	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Raveling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
36+000	37+000								G		E	F	F	ULD	PF	
37+000	38+000								G		E	F	F	ULD	PF	
38+000	39+000								G		E	F	F	ULD	PF	
39+000	40+000								G		E	F	F	ULD	PF	
40+000	41+000								G		E	F	F	ULD	PF	
41+000	42+000								G		E	F	F	ULD	PF	
42+000	43+000								G		E	F	F	ULD	PF	
43+000	44+000								G		E	F	F	ULD	PF	

Annexure 2: Condition of Structures

S. No.	Chainage (Km.)	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
1	5+400	Major Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Vegetation observed
2	7+863	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
3	16+095	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
4	22+333	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	27+098	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good

Annexure 3: Condition of Box/slab Culverts

S. No.	Chainage (Km.)	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	0+400	Good	Good	Fair	Fair	Fair
2	5+700	Good	Good	Fair	Fair	Fair
3	6+558	Good	Good	Fair	Fair	Fair
4	10+558	Good	Good	Fair	Fair	Fair
5	23+150	Good	Good	Fair	Fair	Fair
6	30+440	Good	Good	Fair	Fair	Fair
7	31+650	Good	Good	Fair	Fair	Fair
8	31+950	Good	Good	Fair	Fair	Fair
9	32+346	Good	Good	Fair	Fair	Fair
10	32+909	Good	Good	Fair	Fair	Fair
11	34+160	Good	Good	Fair	Fair	Fair
12	35+970	Good	Good	Fair	Fair	Fair
13	36+240	Good	Good	Fair	Fair	Fair
14	36+535	Good	Good	Fair	Fair	Fair
15	39+762	Good	Good	Fair	Fair	Fair

Condition of Hume Pipe Culverts

S. No.	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	2+450	Good	Fair	Fair	Fair
2	3+440	Good	Fair	Fair	Fair
3	10+250	Good	Fair	Fair	Fair
4	12+500	Good	Fair	Fair	Fair
5	28+470	Good	Fair	Fair	Fair
6	28+820	Good	Fair	Fair	Fair
7	28+980	Good	Fair	Fair	Fair
8	29+240	Good	Fair	Fair	Fair
9	29+100	Good	Fair	Fair	Fair
10	30+550	Good	Fair	Fair	Fair
11	37+600	Good	Fair	Fair	Fair
12	38+650	Good	Fair	Fair	Fair
13	40+850	Good	Fair	Fair	Fair
14	41+320	Good	Fair	Fair	Fair
15	1+150	Good	Fair	Fair	Fair
16	6+900	Good	Fair	Fair	Fair
17	13+062	Good	Fair	Fair	Fair
18	18+880	Good	Fair	Fair	Fair

S. No.	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
19	19+920	Good	Fair	Fair	Fair
20	24+940	Good	Fair	Fair	Fair
21	27+420	Good	Fair	Fair	Fair
22	39+220	Good	Fair	Fair	Fair
23	42+170	Good	Fair	Fair	Fair
24	12+060	Good	Fair	Fair	Fair
25	18+450	Good	Fair	Fair	Fair
26	27+823	Good	Fair	Fair	Fair
27	41+850	Good	Fair	Fair	Fair

Annexure 4: Toll Revenue Calculations

1. Tollable Traffic considered for Toll Revenue in No.s (AADT):

Table-1: Details of Tollable Traffic (Base Year 2019-20)

Vehicle Type	Traffic (AADT)
	Km.21+800
Car	732
LCV	278
Bus	52
Truck	32
MAV	142

2. Traffic Growth Rates:

Table-2: Details of Growth rates adopted (%)

Year	Car	LCV	BUS	Truck	MAV
2019-25	5.00	5.00	5.00	5.00	5.00
2025-30 Beyond	5.00	5.00	5.00	5.00	5.00

3. Trip Distribution Ratio as per the Toll Data:

Table-3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Return (Commercial)	Local Return (personal)	Total
Car	88%	8%	4%	100%
LCV	88%	12%		100%
Bus	93%	7%		100%
Truck	81%	19%		100%
MAV	90%	10%		100%

4. Toll Rates :

Table-4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km. 21+800
Car	35
LCV	84
Bus	174
Truck	209
MAV	417

Toll Plaza-1 Revenue:

Years	Car/Jeep	LCV	Bus	Trucks	MAV	Total in Rs.	Total in Lakhs.	Cumulative Lakhs.
2019-20	9263166	8025696	3215346	2200230	20548139	43252577	432.526	432.526
2020-21	10144767	8780656	3510499	2404553	22425935	47266409	472.664	905.190
2021-22	11043152	9551444	3830012	2623808	24462622	51511038	515.110	1420.300
2022-23	12006015	10377359	4165130	2845872	26646914	56041289	560.413	1980.713
2023-24	13037556	11334759	4532134	3097343	28957494	60959286	609.593	2590.306
2024-25	14142236	12285545	4925426	3366846	31465048	66185100	661.851	3252.157
2025-26	15324790	13303072	5346716	3655556	34150963	71781098	717.811	3969.968
2026-27	16590244	14475881	5788620	3964720	36990941	77810407	778.104	4748.072
2027-28	18105469	15644259	6271009	4295662	40067199	84383598	843.836	5591.908
2028-29	19561127	16893284	6787166	4632225	43358605	91232408	912.324	6504.232
2029-30	21117086	18325624	7328609	5010144	46837464	98618926	986.189	7490.421
2030-31	22779739	19756566	7918413	5414275	50599408	106468400	1064.684	8555.105
2031-32	24555864	21284788	8548876	5846293	54620454	114856274	1148.563	9703.668
2032-33	26452652	23029334	9210257	6307978	58869040	81448281	814.483	10518.151

Annexure 5: Operation & Maintenance cost

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	44	12	4	350	739,200	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	kms	1	24	4	350	33,600	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	1	52	1	1939	100,828	01 Nos of Labour
6	ROW Cleaning	Half yearly	Km	22	2	5	350	77,000	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	39	2	2	650	101,400	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	44	4	2	350	123,200	02 Nos of Labour
10	General Cleaning in Building & Facilities	Daily	Nos	1.00	6	60	350	126,000	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	3	2	2	350	4,200	02 Nos of Labour for removal of vegetation/Structure
								1,305,428	
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	50000	50,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
2	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								110,000	
1	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
2	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	2500	30000	2500 Per month for per set (Per set - Per toll plaza)
								70,000	
								1,485,428.00	

Incidental cost for 1 year

S. No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	1027	516	529,932	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sq.m	1	1	277	168	46,536	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	660	225	445,500	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			37.5	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	44	4	11	2250	99,000	5 % of total stones per year (unable to understand the backup)
	Total amount for 1 Year							**1,262,968**	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 3,432,000
2	Fuel for Generator & Vehicles	₹ 600,000
3	Electricity	₹ 330,000
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 20,453
6	Refurbishment of Toll Plaza Equipment	₹ 75,000
	Total Amount	**₹ 4,467,453**

Summary of Major maintenance

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 3% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2021	1,80,28,365	0.20	3.0%	1,81,36,535	1.81
1st Major Maintenance - Highways	01-04-2022	4,20,66,185	1.20	3.0%	4,35,80,568	4.36
2nd Major Maintenance - Highways	01-04-2028	6,00,94,550	7.20	3.0%	7,30,74,973	7.31
2nd Major Maintenance - Highways	01-04-2033	6,00,94,550	13.20	3.0%	8,38,91,992	8.39
				Total	₹ 21,86,84,067	21.87

Major maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with			-	

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	mechanical broom, Ref. to Technical specification 503.				
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	2,46,500.00	14.00	34,51,000
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	5,546.25	7,480.00	4,14,85,950
3	Micro surfacing	Sqm	61,625.00	160.00	98,60,000
	Total				**5,47,96,950**
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of **cement concrete kerb without channel** (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - **Consider 5% for construction period.**	Rmt	-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.	Sqm	10,266.67	516.00	52,97,600
3	Road Studs	Nos	-	750.00	
	Total			-	**52,97,600**
	Grand Total				**6,00,94,550**

Annexure 6: Provisional Completion Certificate

MPRDC

MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDDC/BOT/M-S/2009/2098
Bhopal, dated 27 June,2009

TO WHOMSOEVER IT MAY CONCERN

This is to certify that M/s Suryavanshi Infrastructure Pvt. Ltd. Bhopal were awarded the work of Development, Construction, Up-gradation and Maintenance of Mandsaur-Sitamau Road on BOT basis. M/s Suryavanshi Infrastructure Pvt. Ltd. appointed M/s Dilip Buildcon Pvt. Ltd. as their Engineering, Procurement & Construction (EPC) Contractor for construction of the project. The project was provisionally completed on 05.02.2009 and toll has started. As per the Statutory Auditor's certificate, Concessionaire has spent an amount of Rs. 32.08 crores on construction of the project.

This certificate is issued on the request of the company for the purpose of tendering, pre-qualification in other projects/bids only.

(Neeraj Vijay)
Dy.General Manager

Annexure 7: Insurance

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Wed, Nov 11, 2020 14:28:30 IST
Location: NOIDA
Reason: Signing Policy for OICL

ELECTRONIC EQUIPMENT INSURANCE POLICY SCHEDULE

Policy No	: **171200/44/2021/50**	**Prev Policy No**	:
Cover Note No	: ER1700203543	Cover Note Dt	: 07/10/2020
Insured's Code	: 116612568	Issuing Office Code	: 171200
Insured's Name	: Suryavanshi Infrastructure Pvt. Ltd. (GSTIN: 23AAKCS8735P1ZL)	Issuing Office Name	: CBU Vadodara (GSTIN: 24AAACT06
Address	: Plot No 5, Inside Govind Naryan Singh Gate, Chuna Bhatti, Kolar Road, Bhopal, Madhya Pradesh, 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: BHOPAL 462016	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in

Agent/Broker Details

Dev.Off.Code	:
Agent/Broker	: **LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD**
Address	: **601-602 ,6TH FLOOR AURAM NR VASNA,HP PETROL PUMP MARKAND DESAI RAOD VADODARA 390015 GUJARAT INDIA,MOB NO 9898295111 PHONE NO 0265-2252274,BARODA,GUJARAT,396007**
Tel/Fax/Email	: **0265-2252274/0265-2357445/0265-2356033/**

Period of Insurance : FROM 00:00 ON 07/10/2020 TO MIDNIGHT OF 06/10/2021

Collection No & Dt : DC_I_IND 3214001026 - 13/10/2020 GST INVOICE NO :2419569440 UIN :0

Gross Premium : 1,323 GST : 238 Stamp Duty : 1 Total : 1,561

RISK DETAILS

Section I : EEI - EQUIPMENT

Sum Insured : 29,40,009

1 Location of the Risk : AS PER LIST ATTACHED
¿Mandsaur- Sitamau Road¿ (SH-14) of M.P.
State Highway,
BOT Group-IV Road Projects, Mandsaur, Madhya Pradesh- 458001
MADHYA PRADESH - 458001

Sl No.	Description of Items	Manufacturer Name	Year of Manufacture	Annual Maintenance Contract	Identification No.	Escalation %	Sum Insured
1	AS PER LIST	AS PER LIST	2018		AS PER LIST		29,40,009

Deductible / Excess for : AS PER LIST ATTACHED

Excess :

(a) For equipment with value upto Rs. 1 lakh
1) For PC : 5% of claim amount subject to minimum of Rs.2500/-
2) For Equipment other than PC :
(i) Equipment (other than Winchester Drive and/or Hard Disc)- 5% of claim amount subject to a minimum of Rs.1000/-
(ii) Winchester Drive and/or Hard Disc-10% of claim amount subject to a minimum of Rs.2500/-

(b) For equipment with value more Rs. 1 lakh -

Place : -
Date : 12/10/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 1 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

This Document is Digitally Signed
Signer: ATUL JERATH
Date: Wed, Nov 11, 2020 14:28:30 IST
Location: NOIDA
Reason: Signing Policy for OICL

Attached to and forming part of policy number 171200/44/2021/50

2) Equipment (Other than Withheld Discs 25%) of Claim arising out of subject to an amount of Rs 10,000/600/-

In case of computers, the term 'equipment' shall include the entire computer system comprising of CPU, Key boards, Monitors, Printers, Stabilizers, UPS.

SCHEDULE OF PREMIUM

Cover Description	Premium
TOTAL PREMIUM	1,323
ADD :IGST	238
STAMP DUTY	1
TOTAL AMOUNT	1,561

Total Sum Insured In Words : Indian Rupees Twenty-Nine Lakhs Forty Thousand Nine Only
Total Amount Paid : Indian Rupees One Thousand Five Hundred Sixty-One Only

The Insurance under this policy is extended to cover risks of (as per forms attached):
EAR - EARTHQUAKE COVER
STFI Inclusion Cover

Excess / Deductible :
The following minimum deductibles are applicable based on Sum Insured of the policy

The Insurance under this policy is subject to warranties & Clauses (as per forms attached) :
In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
Communicable Disease Exclusion Clause
Exclusion-Any Direct or indirect loss by infectious or contagious disease

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at CBU Vadodara (GSTIN: 24AAACT0627R2Z4) on 12TH DAY OF OCTOBER 2020

For and on behalf of
The Oriental Insurance Company Limited

Entered By : FARHAN KHAN
Examined By : A K Parmar

Authorised Signatory

Place : -
Date : 12/10/2020

For and on behalf of
The Oriental Insurance Company Limited

This is an electronically generated document (Policy Schedule).The Policy document duly stamped will be sent by post.

In case of any query regarding the Policy please call Toll Free No. 1800 11 8485 and 011 33208485.

Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee Page 2 of 2

IRDA Regn. No. 556 - Now you can buy and renew selected policies online at www.orientalinsurance.org.in

FIRE INDUSTRIAL ALL RISK POLICY SCHEDULE

Policy No	**: 171200/11/2021/395**	**Prev Policy No**	**: 171200/11/2020/555**
Cover Note No	:	Cover Note Dt	:
Insured's Name	: 104353027 - Suryavanshi Infrastructure Pvt. Ltd. (GSTIN: 23AAKCS8735P1ZL)	Issuing Office	: 171200 - CBU Vadodara (GSTIN: 24AAACT0627R2Z4)
Address	: Plot no. 5, Inside Govind Narayan Singhgate, Chunabhatti, Kolar Road, Bhopal - 462016, M.P. BHOPAL 462016	Address	: Ist FLOOR, KIRTI TOWER, TILAK ROAD VADODARA GUJARAT 390001
Tel /Fax /Email	: / / 0 / NA	Tel /Fax /Email	: 0265-2427075 / 0265-2436654 / 171200@orientalinsurance.co.in
Dev.Officer	:	BROKER	: LC0000000179 (1149)UNISON INSURANCE BROKING SERVICES P LTD

Period of Insurance: FROM 00:00 ON 04/02/2021 TO MIDNIGHT OF 03/02/2022

Collection No & Dt : DC_I_INDCSH 3214001387 - 04/02/2021 GST INVOICE NO :2419815016 UIN :0

Gross Premium : 2,95,640 GST : 53,215 Stamp Duty : .5 Total : 3,48,855

Co Insurance Details :

S.No	Co Insurer Name	Share %
1	CBU Vadodara	60.00
2	BAJAJ ALLINZE GEN INSURANCE	40.00

SECTION I : IAR - STANDARD FIRE AND SPECIALS PERILS SECTION

Location of the Risk : Operation & maintenance of Roads, Bridges and any other property on the stretch asdescribed in the property to be covered
¿Mandsaur- Sitamau Road¿ (SH-14) of M.P. State Highway, BOT Group-IV Road Projects, Mandsaur, Madhya Pradesh- 458001

Deductible :

Risk Description : Roads

Block Description : 1

SMI Description	Nature of Stock	Sum Insured
Roads Incl Service Road, Structures, Bridges (Major, Minor, Railway, River Incl all Other Bridges) , Underpasses, Culverts, drainages, Utilities, Slabs Box, Causeways, Machineries(Full desc.-As per annexure)		30,75,91,165

Cover Wise Details	**Sum Insured**	**Premium**

Place :
Date : 04/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

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Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

Page 1 of 4

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Attached to and forming part of policy number 171200/11/2021/395

Cover Wise Details	Sum Insured	Premium
Fire Basic Cover	30,75,91,165	1,69,175.14
STFI Cover	30,75,91,165	1,07,656.91
Earth Quake	30,75,91,165	15,379.56

SECTION III : IAR-BREAKDOWN SECTION

Item Description	Identificaton No.	Year of Make
AS PER ANNEXURE		

SMI Description	Sum Insured
Machinery Sum Insured	1,00,00,000

Cover Wise Details	Sum Insured	Premium
Breakdown Cover	1,00,00,000	2,500.00

SECTION II : IAR-FLOP SECTION

Type of Industry	: CONTINUOUS INDUSTRY	Basis of Indemnity	: OUTPUT BASIS
Indemnity Period	: 12 Months	Annual Gross Profit	: 1000000
Total Sum Insured	: 10,00,000	Time Exclusion	:

Cover Wise Details	Sum Insured	Premium
Fire LOP-Basic Cover	10,00,000	928.00

SCHEDULE OF PREMIUM

Fire Basic Cover	1,69,175.14
ADD :STFI Cover	1,07,656.91
ADD :Earth Quake	15,379.56
Fire LOP-Basic Cover	928.00
Breakdown Cover	2,500.00
TOTAL PREMIUM	2,95,640.00
ADD :IGST	53,215.00
STAMP DUTY	0.50
TOTAL AMOUNT	3,48,855.00

Sum Insured In Words :
Machinery Damage : Indian Rupees Thirty Crores Seventy-Five Lakhs Ninety-One Thousand One Hundred Sixty-Five Only
(This Sum Insured Includes Machinery Breakdown Sum Insured Indian Rupees Only)

Place :
Date : 04/02/2021

IRDA-REGNO-556

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Attached to and forming part of policy number 171200/11/2021/395

Business Interruption :
(I) FLOP Indian Rupees Ten Lakhs Only
(II) MLOP Nil
Total Premium In Words : Indian Rupees Three Lakhs Forty-Eight Thousand Eight Hundred Fifty-Five Only

The Insurance under this policy is to cover Risks otherwise stated and attached hereto :

STFI Cover
Earth Quake

Excess / deductiable : The following minimum deductibles are applicable based on the per location sum insured of the policy (MD + BI sum insured combined)

Sum Insured band INR (MD+BI sum insured combined) per location	MATERIAL DAMAGE		BUSINESS INTERRUPTION		
	% of Claim	Subject to Minimum Deductible in INR	FLOP (no. of days of standard Gross Profit)		MLOP (no. of days of Standard Gross Profit)
			for other than Petro Chemical Risks	for Petro Chemical Risks	
Upto 100 Cr	5	5,000,00	7	14	14
Above100 Cr and upto 1500 Cr	5	10,000,00	7	14	14
Above 1500 Cr and upto 2500 Cr	5	25,000,00	7	14	14
Above 2500 Cr	5	50,000,00	14	21	21

The Insurance under this policy is subject to warranties & Clauses otherwise stated herein:

1. Removal Of Debris Clause (Upto 1% Of The Claim Amount)
2. Reinstatement Value Policies Clause
3. Architects, Surveyors And Consulting Engineer S Fees (Upto 3% Of The Claim Amount)
4. Held in Trust Clause;Waiver of Subrogation Clause;STFI Clause;72 Hours ClauseOn account payment Clause.
5. Nominated Adjustor Clause(Upto Rs. RO Limit)- 1) Bhatawadekar IS&LAPL, 2) Proclaim IS&LAPL, 3) Protocol IS&LAPL, 4) Mehta & Padamsey IS&LAPL
6. Add on Cover:Minor Works cover upto 1,00,00,000 - AOA Limit Rs.20 Lac and AOY Rs.1 Cr,Loss Minimization / Fire Fighting Expenses,Expediting Expenses,Cost of re writing records,Claims Preparation Expenses each covered upto Rs. 1,00,00,000/-
7. Co-Insured-Madhya Pradesh Road Development Corporation
8. In the event of a claim under the policy exceeding Rs.1lac or a claim for refund of premium exceeding Rs1lac,the insured will comply with the provisions of the AML policy of the Company.The AML policy is available in all our operaing Offices as well as company's website.
9. Class Of Constriction
10. Plinth & Foundation
11. Endorsement - Earthquake (Fire And Shock) - Add On Cover
12. Designation Of Property Clause
13. Local Authorities Clause
14. Add on Cover:Immediate Repairs ,ROD,Architect & Surveyor fees each covered upto Rs. 1 Cr.,Omission to insure,Escalation each covered upto 5% of BMA SI.
15. CO INSURANCE CONDITION

Financier's Names are as stated herein None

Place :
Date : 04/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

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Attached to and forming part of policy number 171200/11/2021/395

The insurance under this policy is subject to conditions, clauses, warranties, endorsements as per forms attached.

Warranted that in case of dishonour of premium cheque(s) the Company shall not be liable under the policy and the policy shall be void abinitio (from inception).

In witness whereof the undersigned being authorised by and on behalf of the company has/have herein to set his/their hands at on 04TH DAY OF FEBRUARY 2021

For and on behalf of
The Oriental Insurance Company Limited

Entered By : SUMAN BHARTI

Examined By : A K Parmar

Policy Printed By : 970042 IP :

Policy Printed On : 04-FEB-21 15:53:57

Authorised Signatory

Place :
Date : 04/02/2021

IRDA-REGNO-556

For and on behalf of
The Oriental Insurance Company Limited

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Authorised Signatory

CIN: U66010DL1947GOI007158 All the Amounts mentioned in this policy are in Indian Rupee

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HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

May 13, 2020

SURYAVANSHI INFRASTRUCTURE PVT LTD

PLOT NO. 5, GOVIND NARAYAN SINGH GATE,
CHUNA BHATTI, BHOPAL,
BHOPAL,
MADHYA PRADESH,462016.

Dear Customer,

Sub: Employees Compensation Insurance Policy No: 3114203387976900000

We thank you for having preferred us for your *Insurance* requirements. We at HDFC ERGO General Insurance believe "*Insurance*" as not only to be an assurance to indemnify in the event of unfortunate circumstances, but one that signifies protection and support, which you can count on when you need it most.

The Insurance Policy enclosed herewith is a written agreement providing confirmation of our responsibility towards you that puts insurance coverage into effect against stipulated perils.

Please note that the policy has been issued based on the information contained in the proposal form and / or documents received from you or your representative / broker.

Name of the Intermediary	:	GLOBAL INSURANCE BROKERS PVT LTD
Intermediary Code	:	200113159601

Where the proposal form is not received, information obtained from you or your representative /broker, whether orally or otherwise, is captured in the policy document.

If you wish to contact us in reference to your existing policy and /or other general insurance solutions offered by us, you may write to our correspondence address as mentioned below. Alternatively, you may visit our website www.hdfcergo.com . To enable us to serve you better, you are requested to quote your Policy Number in all correspondences.

Thanking you once again for choosing HDFC ERGO General Insurance Company Limited and looking forward to many more years of association.

Yours sincerely,

Authorised Signatory

3114203387976900000 Page 1 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117

Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, H. T. Parekh Marg, Churchgate, Mumbai - 400 020 | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), LBS Marg, Bhandup (West), Mumbai - 400 078 | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699 Email : care@hdfcergo.com

HDFC ERGO General Insurance Company Limited

HDFC ERGO
Take it easy!

Certificate of Insurance cum Policy Schedule

Policy No. 3114203387976900000 **Employees Compensation Insurance**

Insured Name	SURYAVANSHI INFRASTRUCTURE PVT LTD (PAN Number:AACCD6124B)	**Business**	OTHERS
Correspondence Address	PLOT NO. 5, GOVIND NARAYAN SINGH GATE,CHUNA BHATTI, BHOPAL,BHOPAL,MADHYA PRADESH,462016.		

Mobile		**Phone**		**E Mail**		**Policy Issuance Date**	13/05/2020

Period of Insurance	From Date & Time	19/05/2020 00:01 AM	To Date & Time	18/05/2021 Midnight

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005
3114203387976900000 Page 2 of 13

HDFC ERGO General Insurance Company Limited (Formerly HDFC General Insurance Limited) UIN : IRDAN125P0017V02201112 | IRDAI Reg No.146 | CIN : U66030MH2007PLC177117
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation, | Customer Service Address: D-301, 3rd Floor, Eastern Business District (Magnet Mall), | Toll Free Number: 1800 2700 700 Telephone : +91 22 6638 3600 Fax: 91 22 6638 3699

Annexure 8: Project Photos

ANNEXURE C

TRAFFIC CONSULTANT'S REPORT

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Intended for

Shrem Financial Private Ltd

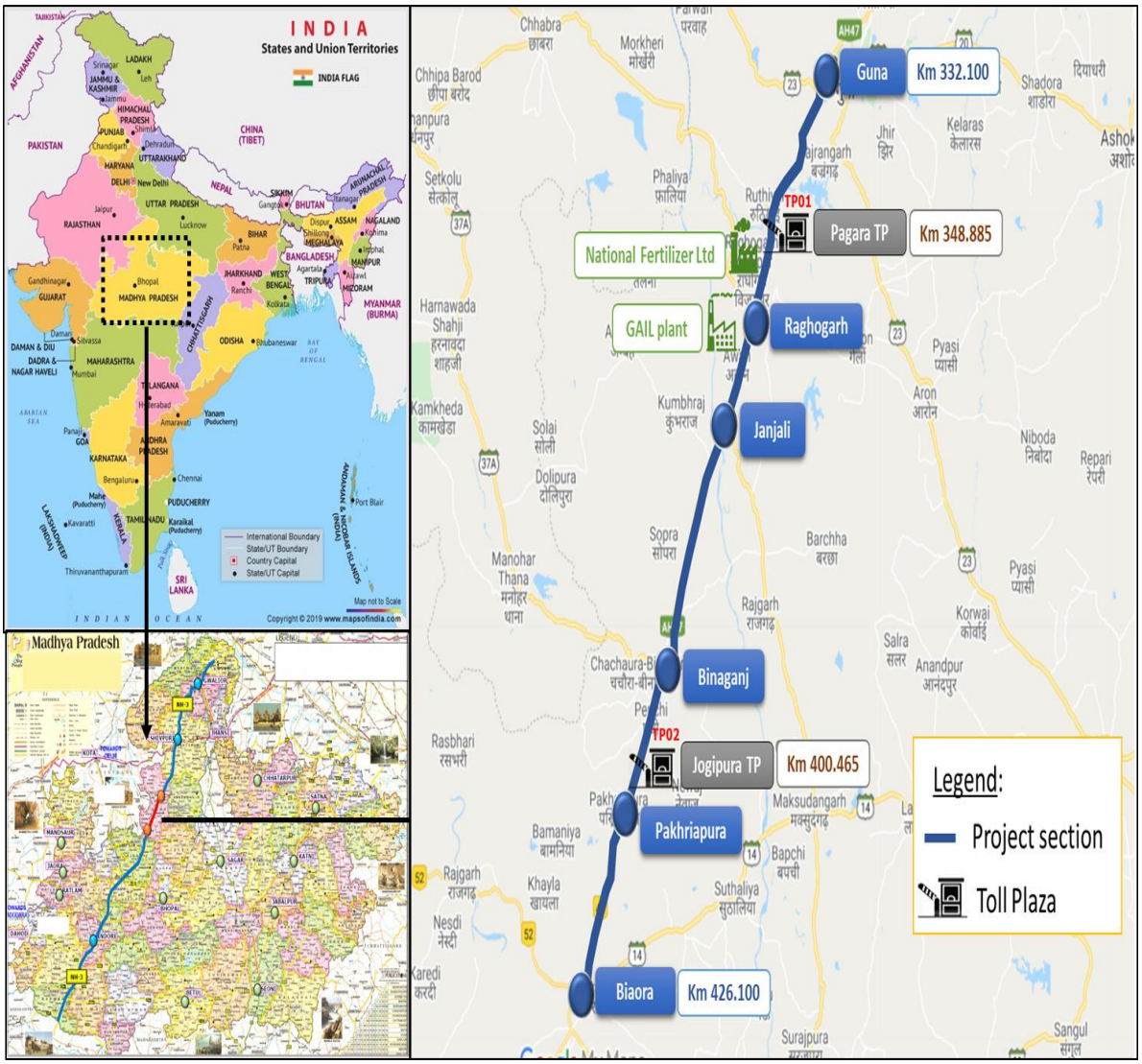
Document type

Final Traffic Study Report

Date

February 2021

TRAFFIC STUDY FOR GUNA BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH



RAMBOLL

Revision	**00**
Date	**27/1/2021**
Made by	**Rahul/Harpreet**
Checked by	**Meenakshi Asija**
Approved by	**Srinivas Chekuri**
Description	**Final Traffic Study Report**

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ABBREVIATIONS

%	Percentage
2A	2 Axle truck
3A	3 Axle truck
AADT	Annual Average Daily Traffic
ADT	Average Daily Traffic
AR	Alternate Route
BIA	Broad Influence Area
CA	Concession Agreement
CAGR	Compounded Annual Growth Rate
DBFOT	Design, Build, Finance, Operate and Transfer
DME	Delhi Mumbai Expressway
EIA	External Influence Area
FY	Financial Year
GAIL	Gas Authority of India Ltd
GDP	Gross Domestic Product
GSDP	Gross State Domestic Product
HCV	Heavy Commercial Vehicles
HME	Heavy Machinery and Equipment
IIA	Immediate Influence Area
IRC	Indian Road Congress
Km	Kilometre
LCV	Light Commercial Vehicle
M Bus	Minibus
MAV	Multi Axle Vehicle
MH	Maharashtra
MLCV	Mini LCV
MP	Madhya Pradesh
NCT	National Capital Territory
NFL	National Fertilizer Limited
NH	National Highway
NHAI	National Highway Authority of India
NHDP	National Highway Development Program
NHTIS	National Highway Toll Information System
NPV	Net Present Value
OD	Origin-Destination survey
OECD	Organisation for Economic Cooperation and Development
PCU	Passenger Car Unit
PHF	Peak Hour Factor
PIA	Project Influence Area

Q	Quarter
RFP	Request for Proposal (Document)
RUCS	Road User Cost Study
SEZ	Special Economic Zone
SH	State Highway
SPV	Special Purpose Vehicle
TP	Toll Plaza
TVC	Traffic Volume Count
VOC	Vehicle Operating Cost
VOT	Value of Time
WPI	Wholesale Price Index
YOY	Year on Year

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1. INTRODUCTION

1.1 General

The project road, Guna-Biaora, is part of NH-3 which starts at Guna (km 332.100) and ends at Biaora (km 426.100) with a length of about 93.5 km. The project road as part of the upgradation of National Highways in India under NHDP Phase IV was upgraded from 2-lane to 4-lane highway and was awarded to M/s Dilip Buildcon Limited which in turn formed an SPV M/s Jalpa Devi Tollways Pvt. Ltd. The project is undertaken on Design, Build, Finance, Operate and Transfer (DBFOT) basis for a concession period of 26 years. The asset is operational since June 2018.

The National Highway 3 (NH-3) connects the city of Agra with Mumbai, the financial capital of India. This 1,161 km-long road spans across the states of Uttar Pradesh, Rajasthan, Madhya Pradesh and Maharashtra. It acts as a major connection between economic centres falling on and around the corridor such as New Delhi, Agra, Gwalior, Bhopal, Indore, Nashik, Mumbai, Pune.

Figure 1-1 shows the alignment of NH-3 with major places along the highway.

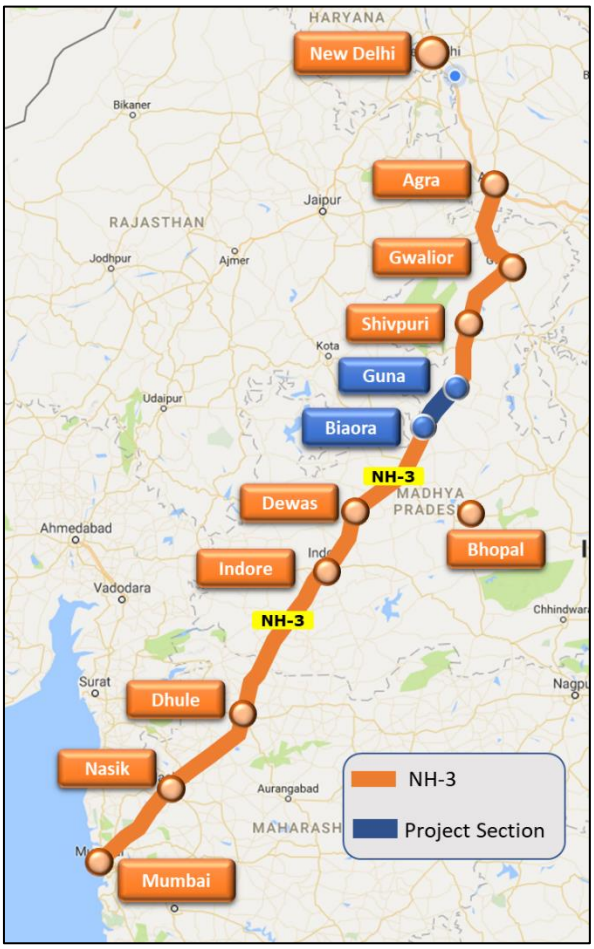

Figure 1-1: Alignment of NH-3 with major places

Shrem Financial Pvt Ltd, has appointed Ramboll India Private Ltd as the Traffic Consultant to carry out a study for assessing the present traffic levels, travel pattern and revenue

estimation duly considering the network characteristics, future economic perspective in the influence area of the project and the provisions in the Concession Agreement of the project for the balance concession period.

1.2 Objective and Scope of Services

The objective of the study is to study the existing tollable traffic and travel pattern of the project road.

- Undertake Traffic Survey on the highway section as per the following:
  - Seven days, 24 hours, Videography Traffic Counts at 2 existing toll plaza locations on the project road
  - One-day Origin-Destination survey at 2 existing toll plaza locations to assess the existing travel pattern of vehicles plying on the project road - origin and destination, commodity carried for freight vehicles, purpose of travel for cars
- Establish seasonality factors using available past traffic data and/or from using fuel sales data or any relevant data
- Estimation of the base year AADT using available toll data for the year or seasonality factors for conversion of ADT to AADT
- Review of past traffic studies, traffic data and other relevant reports as may be available to determine category wise volume of traffic for past years
- To identify competing route and analyse the network conditions, traffic characteristics & level of toll charged, future plans of tolling the alternative routes and the advantage/ disadvantage of the competing road and their impact on the project traffic.
- Analysis of OD data to cover:
  - Trip matrix and influence factors for different zones contributing traffic on the corridor
  - Identification of Project Influence Area from analysis of travel pattern - regional distribution of traffic,
  - Commodity composition- Goods type distribution
  - Top OD pairs by vehicle types
  - Travel frequency and trip purpose distribution
- Analysis of commodity movement on project road – major commodities carried, origin and destination of commodities carried etc.
- Carry out a study of past economic performance of influence area

- To study the impact of traffic diversion (from/to project road) in present condition and future improved scenario, a cost ratio-based diversion analysis using spreadsheet-based modelling for potential OD pairs to be undertaken
    - Assessment of the potential divertible/corridor traffic sensitive to network improvements based on the observed travel pattern.
    - An assessment of generalised cost of travel (vehicle operating cost, travel time costs and toll charges) using the project road and alternate road will be done and a cost ratio of travel determined.
    - The diversion percentages will be estimated using diversion curve equations and diverted traffic (to/from project road) to be estimated.
- Identification of Project Influence Area and traffic generators (industrial areas, towns, ports etc.)
- Preparation of traffic projections for the balance concession period in three scenarios – low, most likely and high
- Review of Concession Agreement and Capacity analysis of the road
- Estimation of tollable traffic streams by toll category and estimation of toll revenue as per categories of traffic streams stipulated in the tolling schedule for the concession period.
- Review future road and transportation network developments in the area of influence of the project and identify those schemes that may impact positively or negatively traffic on the toll road
- Identify factors which may have a positive and / or negative impact on the traffic - all major developments like industrial corridors, economic corridors, ports, Bharatmala, Sagarmala
- Upcoming developments and future development potential of the region would be assessed for the induced/newly generated traffic
- Estimation of toll revenue as per categories of traffic streams stipulated in the tolling schedule for the concession period
- Scenario Analysis of toll revenue - Critical parameters of diversion (if applicable) and three scenarios of traffic growth (most likely, low and high)

1.3 Report Structure

This report is divided into four chapters, including this introduction chapter. Chapter 2 details upon the project road characteristics and socio – economic profile of the districts in the project influence area including the estimation of AADT and travel characteristics in the Project Influence Area (PIA). Chapter 3 contains the details on the derivation of

traffic growth rates used for traffic forecasting. Chapter 4 presents the details regarding tolling strategy, toll rates and the revenue projections for the duration of the concession.

2. TRAFFIC SURVEY AND ANALYSIS

2.1 General

In order to understand the traffic characteristics, the volume of traffic and travel pattern of vehicles plying on the project road were collected through primary surveys. This chapter presents the details of the project road characteristics, traffic surveys carried out, their analysis and the salient findings. The results of the analysis will be utilized in assessing the traffic growth and estimation of traffic and revenue forecast on the project road for the remaining concession period.

2.2 Project Road Characteristics

The project road section, Guna-Biaora, a part of the NH-3 in the state of Madhya Pradesh, starts at km 332.100 near Guna and ends at km 426.100 at Biaora with a length of about 93.5km. The project road falls under the jurisdiction of Guna district and Rajgarh district passing through settlements of Guna, Raghogarh, Janjali, Binaganj, Pakhripura and Biaora. There are two operational toll plazas on the project road, one near Pagara (km 348.885) and other at Jogipura (km 400.465) as part of the concession.

The alignment of project road and toll plaza locations is shown in **Figure 2-1.**

Figure 2-1: Project road and location of toll plazas

The project road, in wider context, serves the long-distance traffic, which is majorly plying from Gwalior, Agra and beyond on the north towards Nasik, Mumbai, Pune and beyond on the south. Apart from long distance traffic, it also serves the short distance traffic which is mainly generated within project corridor between Shivpuri, Guna, Biaora, Indore, Bhopal and surrounding areas.

Also, the project road has presence of two large scale industries/plants in the vicinity which influence the traffic on the corridor viz, National Fertilizer Ltd (largest in the state) and the Gas Authority of India Ltd (GAIL).

2.2.1 Profile of Project Influence Area Districts

Guna district

Guna district is situated in the north west part of Madhya Pradesh with an area of 6,390 sq.km. It is surrounded by the districts of Shivpuri on the north, Ashokanagar on the north east, Rajgarh on the south, and Vidisha on the south east in Madhya Pradesh and shares border with the states of Rajasthan on the west. The city of Guna is the administrative headquarters of Guna district.

Guna is predominantly an agricultural region and the prime share of revenue comes from the agriculture and related products. Wheat, mustard, coriander and soya bean are the major crops produced. The economy also thrives on the small-scale industries for soya bean oil and mustard oil mostly located in Guna.

Also, National Fertilizer Limited (NFL), largest in the state located in Vijapura is a Central public sector enterprise (Govt of India Undertaking) unit involved in manufacturing of fertilizers. The district also has the presence of Gas Authority of India Ltd (GAIL) involved in distribution of Liquified petroleum gas (LPG).

The district population as per Census 2011 is 1.24 million with a decadal growth rate of about 30.20 percent.

Rajgarh district

Rajgarh district is located on the north western part of Madhya Pradesh with an area of 6,154 sq. km. It is spread over 6 tehsils viz, Rajgarh, Khilchipur, Jirapur, Biaora, Narisghgarh, Sarangpur and Pachore with Rajgarh as the district headquarter.

The district is bounded by Rajasthan state to the north, district of Guna to the north east, Bhopal to the east, Sehore on the south east, and Shajapur to the south and west.

The economy of the district mainly depends upon agriculture and related products.

According to 2011 census, the district has a population of 1.54 million with decadal growth of about 23.83 percent.

2.3 Traffic Surveys

In order to understand the characteristics and the volume of traffic using the project road, data on road network, traffic and travel pattern of vehicles plying on the project road were collected through primary traffic surveys. Traffic volume video graphic survey for seven days and origin-destination (OD) survey as roadside interview for one day at toll plaza locations were conducted on the project road. The schedule of the traffic surveys and location on the project road are given in **Table 2-1.**

Location	Chainage	Duration	Date(s)
Classified Traffic Volume Counts			
TP01-Pagara	km 348.885	7 Days	30th Dec 2020 –5th Jan, 2021
TP02-Jogipura	km 400.465		
Origin and Destination Survey			
TP01-Pagara	km 348.885	1 Day	30th Dec 2020
TP02-Jogipura	km 400.465		

Table 2-1: Traffic Survey Location and Schedule

Trained enumerators were engaged for conducting traffic surveys under the supervision of experienced transport planner. The vehicle classification as generally used in the traffic surveys of NHAI studies along with their PCU values, as suggested in IRC: 64 – 1990, are presented in **Table 2-2.**

Vehicle Type	PCU Factor
Motorized Vehicles	
Car, Jeep, Van &Taxi	1.0
Two –Wheeler	0.5
Three-Wheeler (Auto-Rickshaw)	1.0
Mini-Bus/ School Bus	1.5
Govt. Bus/ Private Bus	3.0
Mini LCV/Max Pick Up	1.0
Light Commercial Vehicle (LCV)	1.5
2-Axle Truck	3.0
3-Axle Truck	3.0
Multi-Axle Vehicle (MAV 4-6 Axle)	4.5
HME	4.5
Agricultural Tractor	1.5
Agricultural Tractor with Trailer	4.5
Non – Motorised Vehicles	
Cycle	0.5
Cycle Rickshaw	2.0
Animal Drawn Cart	6.0

Table 2-2: Vehicle classification and PCU factors

2.4 Traffic Characteristics

The data collected from the traffic volume count survey was analysed in order to get the results with respect to existing traffic intensity, flow pattern, hourly variation and composition of traffic on the study road network. The various traffic characteristics have been analysed under the following heads:

- Average Daily Traffic (ADT)
  - Daily variation of traffic
  - Peak hour traffic and hourly variation

- Directional distribution
- Traffic composition

- Annual Average Daily Traffic (AADT)

2.4.1 Average Daily Traffic (ADT)

The traffic volume data collected at the toll plaza locations during the seven days survey has been analysed. The summary of ADT in terms of vehicles and PCUs is presented in **Table 2-3.**

Mode	TP01	TP02
Tollable vehicles		
Car/Jeep/Van/Taxi	3,472	2,700
Minibus	112	33
Standard Bus	476	403
Mini LCV	362	325
LCV	1,110	1,007
2 Axle	933	856
3 Axle	1,491	1,502
MAV (4-6 Axle)	2,536	2,434
HMV/ MAV (=>7 Axle)	6	6
Non Tollable vehicles		
Two-Wheeler	4,969	1,736
Auto Rickshaw	200	79
Agri. Tractors	110	117
Total Non-Motorised	86	7
Total Vehicles/PCUs		
Total Tollable Vehicles	**10,498**	**9,266**
Total Non Tollable Vehicles	**5,365**	**1,939**
Total Vehicles	**15,863**	**11,204**
Total PCU	**28,997**	**25,312**
Tollable PCU	**25,807**	**23,847**

Table 2-3: Average Daily Traffic

- The observed total vehicles are around 15,863 and 11,204 respectively at TP01 and TP02. The higher traffic at TP01 can be attributed to interaction from/to NFL/GAIL plants.
- The share of passenger vehicles in total traffic is 58.7 and 44.2 percent, respectively at TP01 and TP02.
- Car traffic has a share of around 22.0 percent (3,472 vehicles) and 24.0 percent (2,700 vehicles) of total traffic at TP01 and TP02 respectively.
- Freight vehicles account for a share of 41.3 percent at TP01 and 55.8 percent at TP02. Within the freight traffic, MAV accounts for 16.0 percent (2,542 vehicles) and 21.8 percent (2,440 vehicles) at TP01 and TP02 respectively.

- The tollable traffic recorded at TP01 and TP02 are 66.0 percent and 83.0 percent respectively. The remaining non-tollable traffic mainly comprise of two wheelers and auto rickshaws.

Daily Variation of Traffic

The day wise variation of total passenger and freight traffic at the toll plaza locations in terms of vehicles and PCUs are shown in **Figure 2-2** and **Figure 2-3**.

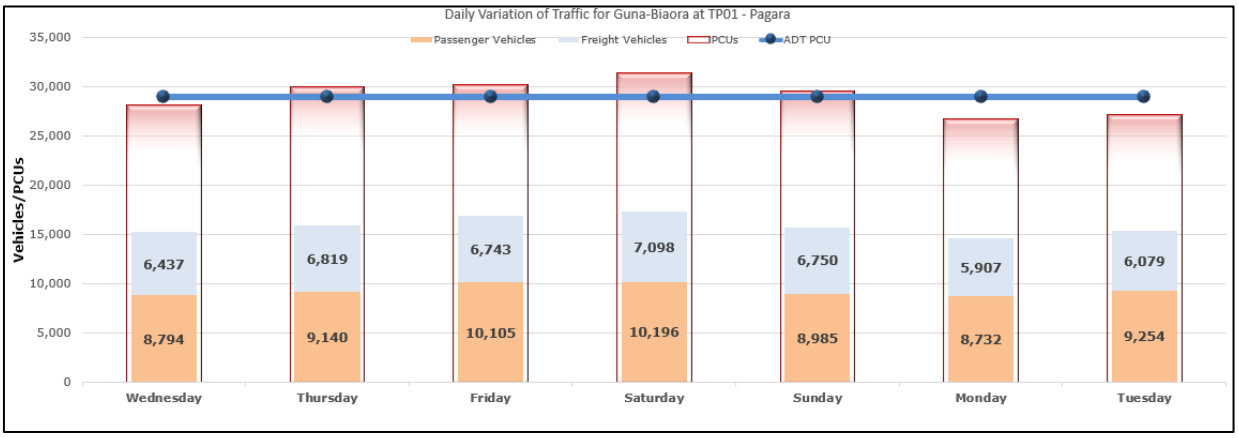

Figure 2-2: Daily Variation of Traffic at TP01

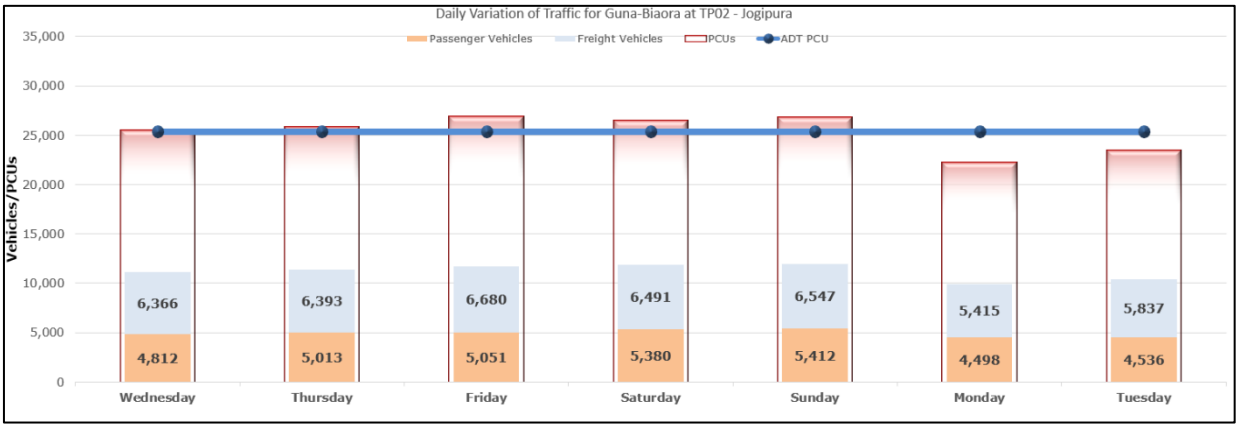

Figure 2-3: Daily Variation of Total Traffic at TP02

It was observed that the traffic at toll plaza locations is almost consistent throughout the seven days with some minor fluctuations.

Peak Hour Traffic and Hourly Variation

The hourly variation of traffic illustrates the distribution of traffic over the day with respect to time, and the peak hour factor (PHF) is the maximum percentage of the total traffic that uses the project highway in one single hour of the day. Highway capacities and design calculations are based on PHF. The peak hour factor observed at the count locations is summarized in **Table 2-4**.

Survey Location	Peak Hour Traffic (PCUs)	Peak hour %	Observed Peak Hour
TP01	1,719	5.9	15:00 - 16:00
TP02	1,361	5.4	16:00 - 17:00

Table 2-4: Observed Peak Hour Factor

The peak hour volume at TP01 is 5.9 percent in PCUs which was observed during afternoon (15.00 - 16.00) and at TP02, it was 5.4 percent which was observed during 16:00 – 17:00 hours.

Figure 2-4 shows the hourly variation of ADT in terms of number of vehicles and PCUs observed at the toll plaza locations.

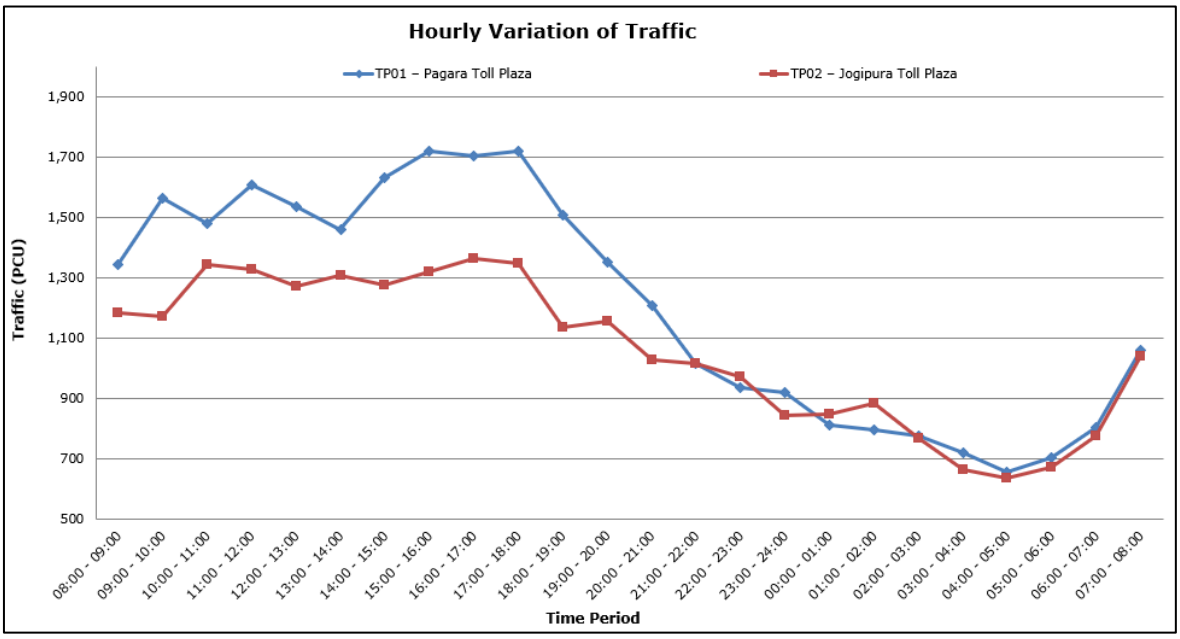

Figure 2-4 : Hourly Variation of Total Traffic at toll plaza locations

The hourly variation graph indicates that the traffic flow is almost the same during the day and tapering off at night.

Directional Distribution

The directional distribution analysis, as reported in **Table 2-5**, indicates that there is an almost equal distribution of directional traffic (PCUs) at the toll plaza locations.

Direction/Location	TP01	TP02
Guna - Biaora	48.1%	51.8%
Biaora - Guna	51.9%	48.2%

Table 2-5 : Directional distribution (in PCU)

Traffic Composition

Analysis was carried out to find the composition of traffic in terms of fast- and slow-moving traffic. The total traffic composition at the toll plaza locations is presented in **Figure 2-5.**

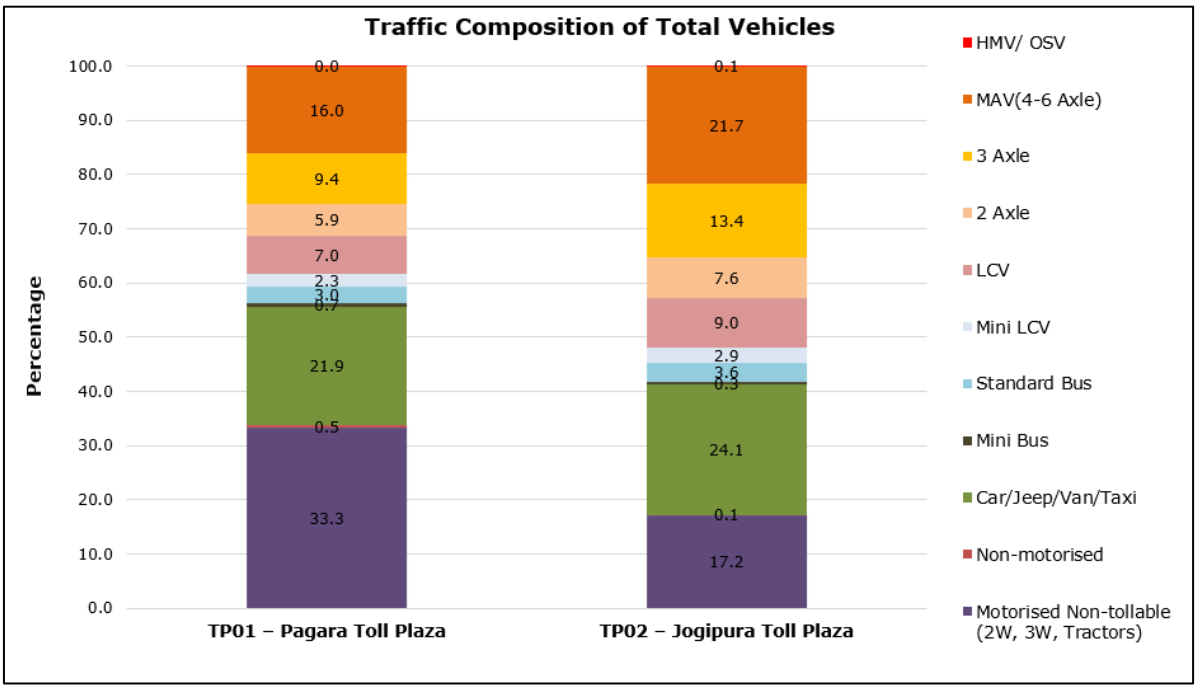

Figure 2-5: Total Traffic Composition at the toll plaza locations

- Non- motorised vehicles are very minimal and negligible at toll plaza locations.
- Other non-tollable vehicles (two-wheeler, auto rikshaw and tractor) account for about 33.3 percent at TP01 and 17.2 percent at TP02.

The traffic composition of tollable vehicles is presented in **Figure 2-6**.

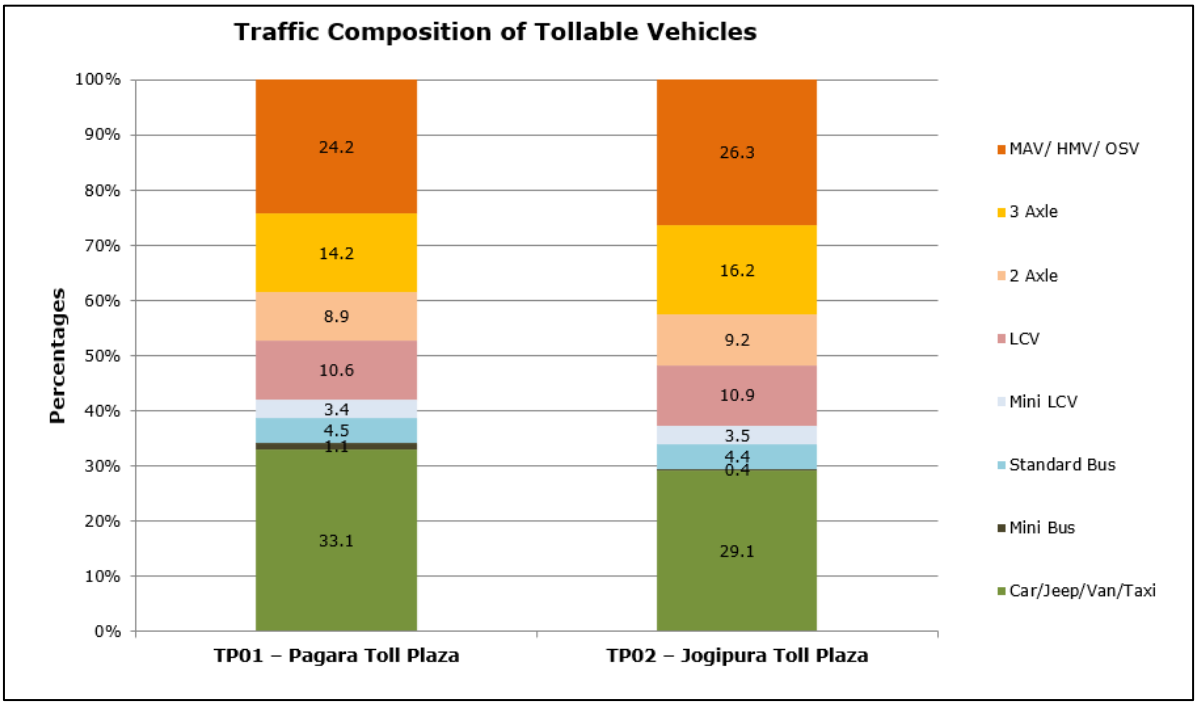

Figure 2-6: Traffic Composition of tollable vehicles at the toll plaza locations

- In case of passenger traffic, car traffic is having a share about 33.1 percent at TP01 and 29.1 percent at TP02.
- The share 2A traffic is about 8.9 percent and 9.2 percent at TP01 and TP02 respectively.

- In case of freight traffic, MAVs are having the highest share at both toll plazas with 24.2 percent and 26.3 percent at TP01 and TP02 respectively.

2.4.2 Annual Average Daily Traffic (AADT)

For the present study, the toll traffic data was provided by the client since the commencement of toll operations (June-18 to Dec-20). This dataset was analysed to understand the traffic characteristics of the project road. Month-wise toll data since the operation is presented in **Appendix 2.1.**

The derivation of FY21 AADT has been done by looking at the quarter on quarter behaviour of traffic in FY21 vs FY20. The first quarter showed a decline in traffic in freight modes due to a complete lockdown in view of COVID-19. The traffic showed recovery in second and third quarter of FY21 as the lockdowns were eased and economic activities slowly started to pick up. Based on this comparison of quarterly behaviour, an estimate of the recovery trends for the fourth quarter of FY21 has been done. The quarterly traffic and the estimated AADT for FY21 is presented in **Table 2-6**.

Description/ Mode	Car	LCV	BUS	2A	3A	MAV	OSV
TP01-Pagara							
Traffic in FY21							
Q1-Actual	2,942	447	493	750	1,066	2,152	3
Q2-Actual	3,899	518	526	1,399	1,463	2,633	3
Q3-Actual	4,342	595	414	1,629	1,568	2,693	3
Q4-Estimate	4,753	631	414	1,652	1,577	2,659	3
AADT							
FY21	**3,984**	**548**	**462**	**1,357**	**1,418**	**2,534**	**3**
TP02-Jogipura							
Traffic in FY21							
Q1-Actual	2,199	404	553	589	1,000	1994	3
Q2-Actual	3,055	421	590	1,214	1,393	2,556	4
Q3-Actual	3,326	434	405	1,492	1,511	2,539	3
Q4-Estimate	3,539	437	405	1,418	1,547	2,545	3
AADT							
FY21	**3,030**	**424**	**488**	**1,178**	**1,363**	**2,409**	**3**

Table 2-6: AADT – FY21 as per Tolling Categories

In case of buses, Q4 of FY20 had shown a drastic increase and cannot be adopted as the base traffic. Therefore, the bus number in Q4 of FY21 has been assumed to be same as Q3 of FY21. While fixing the recovery factors for Q4 of FY21, due consideration has been given to the release of pent up demand by freight vehicles and likely growth for future quarters.

2.5 Travel Characteristics

2.5.1 Survey Methodology

In order to understand the travel demand pattern in the region and tollable traffic streams, origin and destination (OD) surveys were carried out at the toll plaza locations. The OD survey was carried out for 24 hours, by roadside interview method as described

in IRC: 102-1988. Both passenger and commercial vehicles plying on the project road were stopped on a random sampling basis and interviewed.

The travel characteristics obtained by OD survey facilitate the identification of:

1. Local and through traffic on the project road.
2. Potential divertible traffic to/from project road to various alternative routes.

Trained enumerators under the supervision of transport planners collected the trip characteristics using survey forms designed for this purpose. The OD survey elicited characteristics like origin, destination, frequency, purpose of trip for passenger vehicles and commodity being transported for goods vehicles. The information pertaining to origin and destination of trips collected during roadside interviews was analysed to obtain the trip distribution based on a zoning system suitably designed for the present study.

2.5.2 Traffic Zoning System

To understand the spatial dimensions of the trip characteristics of the vehicles interviewed during the O-D survey, a detailed zoning system was developed giving due consideration to the following factors:

- The road network catering to the traffic on the project road and its generating points
- Important towns, villages, factories and industrial centres around the project road area
- Administrative boundaries of districts and states.
- Configuration of the project road in the regional road network with respect to other roads

Two major types of areas were identified for analysis purpose: -

Immediate Influence Area (IIA): It includes the cities/towns/villages and districts along the project road and adjacent to it, which generate/attract trips to the project road. In this study, it consists of districts of Guna and Rajgarh in the state of Madhya Pradesh.

Broad Influence Area (BIA): It includes the remaining districts of Madhya Pradesh and other neighbouring states such as Uttar Pradesh, Rajasthan, Maharashtra and remaining states of India.

Detailed zoning system is prepared for IIA, while more aggregate or broad zoning is developed for BIA. The zoning system adopted for data collection was based on 79 zones and is presented in **Appendix 2.2.**

2.5.3 Sample Size

The vehicles during the OD surveys were interviewed on a random sample basis. **Table 2-7** shows the AADT and the sample size (both in absolute numbers and in percentage terms) captured during the exercise.

Modes	Car	Bus	LCV	2A	3A	MAV/ Oversize
TP01						
Sample	2,050	216	474	775	863	1,272
AADT	3,984	462	548	1,357	1,418	2,537
Percentage (%)	51.5	46.8	86.5	57.1	60.8	50.1
TP02						
Sample	2,068	204	299	824	851	1,314
AADT	3,030	488	424	1,178	1,363	2,412
Percentage (%)	68.3	41.8	70.5	69.9	62.4	54.5

Table 2-7: Sample size collected in OD

Based on the sample size of different categories of vehicles interviewed during the OD survey, direction-wise expansion factors were calculated based on FY21 AADT. The OD matrices for all vehicle categories were generated and analysis was done in terms of regional distribution, travel pattern, commodity distribution and trip purpose for cars. The mode wise OD matrices are presented in **Appendix 2.3.**

2.5.4 Regional Distribution

Based on the OD matrices, the regional distribution of tollable vehicles at the toll plaza locations has been calculated. **Table 2-8** gives the distribution indicating the attraction and generation zones for the traffic on the project road.

Region/Modes	Car	Bus	LCV	2A	3A	MAV
TP01						
Madhya Pradesh	82.9	75.7	68.2	46.0	41.2	35.6
Uttar Pradesh	6.4	8.3	7.9	15.7	17.8	19.8
Maharashtra	3.5	6.3	7.2	10.9	14.0	15.5
Delhi	2.3	1.0	6.5	10.2	10.2	8.3
Gujarat	1.3	5.4	2.3	4.7	4.8	6.9
Rest of North India states	2.4	3.4	2.6	5.5	5.9	5.0
South India states	0.6	0.0	2.2	3.4	3.0	3.0
Rest of India	0.6	0.0	3.0	3.7	3.1	5.7
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
TP02						
Madhya Pradesh	83.9	76.3	60.1	49.7	36.6	32.0
Uttar Pradesh	9.4	9.0	10.4	14.9	19.4	20.5
Maharashtra	2.9	6.4	10.2	12.7	16.0	18.6
Delhi	1.5	1.9	7.5	8.8	8.0	6.7
Gujarat	1.0	3.5	3.2	3.1	5.7	7.9
Rest of North India states	1.1	1.5	2.4	4.4	5.6	5.0

Region/Modes	Car	Bus	LCV	2A	3A	MAV
South India states	0.1	0.9	3.3	3.7	4.7	2.4
Rest of India	0.0	0.5	2.9	2.7	4.1	6.9
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Combined						
Madhya Pradesh	83.3	76.0	64.7	47.7	38.9	33.9
Uttar Pradesh	7.7	8.7	9.0	15.3	18.6	20.2
Maharashtra	3.2	6.3	8.6	11.8	15.0	17.0
Delhi	2.0	1.4	6.9	9.5	9.1	7.5
Gujarat	1.1	4.4	2.7	4.0	5.3	7.4
Rest of North India states	1.9	2.4	2.5	5.0	5.7	5.0
South India states	0.4	0.5	2.7	3.5	3.8	2.7
Rest of India	0.4	0.3	3.0	3.2	3.5	6.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 2-8: Regional Distribution of Tollable Traffic (in %) on project road

Passenger traffic:

- In case of car traffic, Madhya Pradesh contributes about 82.9 and 83.9 percent at TP01 and TP02 respectively. However, Uttar Pradesh and Maharashtra contribute about 7-9 percent and 3-4 percent at both the toll plazas.
- Within the state of Madhya Pradesh, Guna district accounts for 38.0 percent and 26.0 percent at TP01 and TP02 respectively for car traffic.
- In case of Bus traffic, Madhya Pradesh contributes about 75.7 percent and 76.3 percent at TP01 and TP02 respectively, followed by Uttar Pradesh accounting for 8-9 percent at both toll plazas.
- The car traffic is observed to be having Guna- Ragogarh and Guna-Indore as top OD pair at TP01 and TP02 respectively.

Freight Traffic

- In case of LCV traffic, Madhya Pradesh contributes about 68.2 and 60.1 percent at TP01 and TP02 respectively, followed by Uttar Pradesh and Maharashtra accounting for 7-10 percent each at both the toll plazas.
- In case of MAVs, share of Madhya Pradesh state at TP01 and TP02 is about 35.6 and 32.0 percent respectively. Uttar Pradesh contributes around 20-21 percent at both the toll plaza locations. Maharashtra contributes 15.5 percent at TP01 and 18.6 percent at TP02.Delhi and Gujarat also have a reasonable share at TP01, about 8.3 percent and 6.9 percent, while at TP02 it is about 6.7 percent and 7.9 percent.
- The MAV traffic is observed to be having Indore- Lucknow/Kanpur as top OD pair at TP01 and TP02 respectively.

The mode wise top 20 OD pairs are given in **Appendix 2.4**.

2.5.5 Travel Pattern

In order to assess the travel pattern of vehicles, the important streams of traffic plying on the project road are estimated. The list of the popular movements found at the toll plaza locations is presented in **Table 2-9** and **Table 2-10** respectively.

S. No	Traffic Streams	Cars	Bus	LCV	2A	3A	MAV
1	Guna & surroundings - Biaora & surroundings	339	56	16	14	7	18
		8.5%	12.1%	3.0%	1.0%	0.5%	0.7%
2	Guna & surroundings - Beyond Biaora	721	100	30	70	84	84
		18.1%	21.6%	5.4%	5.2%	5.9%	3.3%
3	Gwalior/Shivpuri & surroundings - Biaora & beyond	800	102	81	250	265	432
		20.1%	22.1%	14.8%	18.4%	18.6%	17.0%
4	Agra/Lucknow/Kanpur & surroundings - Biaora & beyond	507	77	83	397	468	952
		12.7%	16.6%	15.1%	29.2%	33.0%	37.5%
5	Delhi NCR & beyond to Biaora/Indore/Ujjain/Bhopal & surroundings	154	7	64	198	194	209
		3.9%	1.6%	11.7%	14.6%	13.7%	8.2%
6	Delhi NCR & beyond to Mumbai & surroundings	70	10	15	96	112	221
		1.8%	2.2%	2.7%	7.1%	7.9%	8.7%
7	Delhi NCR & beyond to Nagpur/Chhattisgarh/Jharkhand	4	0	3	19	31	41
		0.1%	0.0%	0.5%	1.4%	2.2%	1.6%
8	Delhi NCR & beyond to Ahmedabad & surroundings	27	12	2	38	35	63
		0.7%	2.7%	0.4%	2.8%	2.4%	2.5%
9	Delhi NCR & beyond to South India states	24	0	14	46	54	83
		0.6%	0.0%	2.5%	3.4%	3.8%	3.3%
10	Jaipur/Kota & surroundings - Biaora & beyond	23	0	3	10	13	15
		0.6%	0.0%	0.5%	0.8%	0.9%	0.6%
11	Bihar/West Bengal & beyond to Biaora & beyond	33	0	31	96	80	278
		0.8%	0.0%	5.7%	7.1%	5.7%	11.0%
12	Guna & beyond to Zones Between TP01 & TP02	1,284	97	207	123	76	143
		32.2%	21.1%	37.8%	9.0%	5.3%	5.6%
Total		**3,984**	**462**	**548**	**1,357**	**1,418**	**2,537**

Table 2-9: Traffic Streams on TP01

S. No	Traffic Streams	Cars	Bus	LCV	2A	3A	MAV
1	Guna & surroundings - Biaora & surroundings	364	23	29	32	24	31
		12.0%	4.6%	6.8%	2.7%	1.8%	1.3%
2	Guna & surroundings - Beyond Biaora	812	229	26	88	59	100
		26.8%	46.9%	6.2%	7.5%	4.4%	4.1%
3	Gwalior/Shivpuri & surroundings - Biaora & beyond	699	44	141	240	214	358
		23.1%	9.0%	33.3%	20.4%	15.7%	14.9%
4	Agra/Lucknow/Kanpur & surroundings - Biaora & beyond	555	88	85	315	501	960
		18.3%	18.1%	20.1%	26.7%	36.8%	39.8%
5	Delhi NCR & beyond to Biaora/Indore/Ujjain/Bhopal & surroundings	106	28	34	141	140	147
		3.5%	5.8%	8.0%	11.9%	10.2%	6.1%
6		26	0	10	126	137	232

S. No	Traffic Streams	Cars	Bus	LCV	2A	3A	MAV
	Delhi NCR & beyond to Mumbai & surroundings	0.8%	0.0%	2.4%	10.7%	10.0%	9.6%
7	Delhi NCR & beyond to Nagpur/Chhattisgarh/Jharkhand	0	0	22	27	41	77
		0.0%	0.0%	5.1%	2.3%	3.0%	3.2%
8	Delhi NCR & beyond to Ahmedabad & surroundings	3	0	5	10	21	76
		0.1%	0.0%	1.1%	0.8%	1.5%	3.2%
9	Delhi NCR & beyond to South India states	6	0	17	43	44	21
		0.2%	0.0%	3.9%	3.7%	3.2%	0.9%
10	Jaipur/Kota & surroundings - Biaora & beyond	34	5	0	0	12	25
		1.1%	0.9%	0.0%	0.0%	0.9%	1.0%
11	Bihar/West Bengal & beyond to Biaora & beyond	3	5	24	60	107	327
		0.1%	1.0%	5.8%	5.1%	7.8%	13.5%
12	Zones Between TP01 & TP02 to Biaora & beyond	421	67	31	96	65	59
		13.9%	13.7%	7.3%	8.2%	4.8%	2.4%
Total		**3,030**	**488**	**424**	**1,178**	**1,363**	**2,412**

Table 2-10: Traffic Streams on TP02

Passenger traffic:

- The car traffic originating to/from Guna & surroundings to Biaora & surroundings (stream 1) at TP01 is about 8.5 percent (339 vehicles) and at TP02 is about 12.0 percent (364 vehicles) respectively.
- Local streams of car traffic (crossing single toll plaza - stream 12) is found to be around 1,284 (32.2 percent) at TP01 and 421 vehicles (13.9 percent) at TP02. The higher share of local traffic at TP01 is due to the presence of two large plants National Fertilizer Ltd and Gail Authority of India Ltd; also, Guna serves as the district administrative headquarter.
- Around 21.1 percent (800 vehicles) of cars at TP01 and 23.1 percent (699 vehicles) at TP02 are found to be travelling between Gwalior/Shivpuri & surroundings to Biaora & beyond (stream 3).
- In case of bus traffic, about 12.1 percent (56 vehicles) at TP01 and 4.6 percent (23 vehicles) at TP02 are found to be travelling between Guna & surroundings to Biaora & surroundings (stream 1).
- The local bus traffic (crossing single plaza-stream 12) is found be 21.1 percent (97 vehicles) at TP01 and about 13.7 percent (67 vehicles) at TP02 respectively.

Freight traffic:

- In case of 3A/MAV, around 94.5 percent (3,737 vehicles) and 96.7 percent (3,651 vehicles) at TP01 and TP02 is found to be crossing both the toll plazas.
- In case of MAVs, about 226 vehicles on an average are found to be travelling between Delhi NCR & beyond to Mumbai & surroundings (stream 6). Local streams of traffic

(crossing single toll plaza-stream 12) is found to be around 5.6 percent (143 vehicles) and 2.4 percent (59 vehicles) at TP01 and TP02 respectively.

- Similarly, about 111 Two-Axle trucks and 124 Three-Axle trucks on an average are found to be travelling between Delhi NCR & beyond to Mumbai & surroundings (stream 6).
- About 29.2 percent (397 vehicles) at TP01 and 26.7 percent (315 vehicles) of 2A traffic are found to travelling between Agra/Lucknow/Kanpur & surroundings to Biaora & beyond (stream 4).
- Also, in case of LCVs about 15.1 percent (83 vehicles) at TP01 and around 20.1 percent (85 vehicles) at TP02 are found to be travelling between Agra/Lucknow/Kanpur & surroundings to Biaora & beyond (stream 4).Local streams of traffic (crossing single toll plaza-stream 12) is found to be around 37.8 percent (207 vehicles) and 7.3 percent (31 vehicles) at TP01 and TP02 respectively. Higher share of LCV at TP01 for local traffic is due to interaction to/from GAIL/NFL plant, that carries smaller LPG cylinders and fertilizers to project influence areas.

2.5.6 Commodity Distribution

Analysis was also carried out to understand the different commercial vehicles being used to transport different commodities. **Table 2-11** and **Table 2-12** presents the commodity-wise share in the total commercial traffic on the project road at both toll plazas, respectively.

Commodity Type	LCV	2 Axle	3 Axle	MAV
Food Grains and Cash Crops	5.9	8.6	12.9	7.6
Fruits & Vegetables	20.7	17.7	19.8	23.0
Building Materials	0.8	0.9	2.5	1.7
Iron & Steel Products	2.5	3.2	3.8	4.4
Petroleum Products, Chemicals and Gas	7.6	8.9	7.1	9.4
Heavy Machinery & Industrial Equipment's	1.7	2.8	1.4	4.1
Industrial Products & Equipment	8.9	9.0	5.1	6.1
Consumer Items	8.0	14.5	19.5	9.1
Automobile and New Chassis	8.4	8.3	5.6	12.4
Containers	0.4	0.0	0.0	0.0
Ores & Minerals (Coal, Bauxite, limestone)	0.4	0.0	0.0	0.5
Miscellaneous Items (Medicines, Powder, Livestock, Forest products, Fertilizers, Milk, etc.)	9.3	7.9	8.2	9.4
Parcels	10.1	10.1	7.1	8.2
Empty Vehicles	15.2	8.1	7.1	3.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Table 2-11: Commodity distribution at TP01(%)

Commodity Type	LCV	2 Axle	3 Axle	MAV
Food Grains and Cash Crops	5.7	7.3	10.7	8.9
Fruits & Vegetables	13.4	16.7	15.5	19.3
Building Materials	1.7	1.7	2.8	1.8
Iron & Steel Products	3.3	4.5	4.1	5.6
Petroleum Products, Chemicals and Gas	3.7	5.5	6.2	12.3
Heavy Machinery & Industrial Equipment's	1.7	1.3	1.2	2.7
Industrial Products & Equipment	12.4	8.3	8.0	6.0
Consumer Items	15.4	18.0	20.8	12.4
Automobile and New Chassis	10.0	8.6	5.6	13.9
Containers	0.0	0.0	0.6	0.1
Ores & Minerals (Coal, Bauxite, limestone)	0.0	0.5	0.2	0.8
Miscellaneous Items (Medicines, Powder, Livestock, Forest products, Fertilizers, Milk, etc.)	8.7	5.8	6.7	7.1
Parcels	7.7	7.4	6.2	4.3
Empty Vehicles	16.4	14.4	11.3	4.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Table 2-12: Commodity distribution at TP02(%)

- Major commodities being transported across both the toll plazas are fruits and vegetables, food grains, automobiles, parcels, petroleum/gas products, miscellaneous products, etc.
- About 23 percent and 20 percent MAVs at TP01 and TP02, respectively have been found to transport fruits and vegetables (potatoes, onions, garlic etc) across the toll plazas. It may be noted that these commodities are laden from the southern side of the project viz, Indore, Bhopal, Nasik etc and travel to north towards Shivpuri, Gwalior, Agra and other city centres. After dropping these commodities to the mandis/city centres these MAVs trucks return empty.
- Also, about 15-19 percent of 2A and 3A are found to be transporting fruits and vegetables across both the toll plazas.
- Around 12 percent and 14 percent MAVs at TP01 and TP02 are found carrying automobile vehicles (cars & motorbikes) from long distance such as Delhi/Agra/Lucknow and destined to Indore/Maharashtra & surroundings.
- About 6-7 percent of 3-Axle trucks and around 10-12 percent of MAVs have been found laden with chemical/gas products (LPG) in high share across both the toll plazas. GAIL distributive plant is located along the project road from where chemical/gas products (LPG) are capsuled and distributed to nearby demand centres - towns/ cities.
- About 8-10 percent of LCVs, 2-Axle & 3-Axle trucks across both the toll plazas were found to be transporting parcels to nearby towns and cities along the project road.

- About 8-10 percent of LCVs, 2-Axle & 3-Axle trucks have been found to be transporting miscellaneous items.
- About 15-20 percent of 2-Axle trucks and 3A trucks have been found to be transporting consumer items to nearby town/cities across both the toll plazas.

2.5.7 Trip Purpose Distribution

An analysis was also carried out to assess the purpose of car trips on the project road. **Table 2-13** summarises the purpose-wise share of the passenger cars at the O-D survey location.

Purpose	TP01	TP02
Work & Business	78.5	78.0
Education	3.5	2.9
Social	9.0	9.8
Shopping	3.2	2.1
Religious	5.4	6.5
Others	0.5	0.7
Total	**100.0**	**100.0**

Table 2-13: Purpose - wise distribution of Car Trips

- Work and business trips account for about 78-79 percent across both the toll plazas. At both the toll plazas, shopping trips account for about 2-3 percent each.
- Social trips were observed to be around 9-10 percent whereas education trips account for another 3-4 percent across the two toll plazas.
- Religious trips account for about 5-6 percent across both the toll plazas.

3. TRAFFIC GROWTH RATE AND PROJECTIONS

3.1 General

As the project road has been executed on a DBFOT basis under NHDP Phase 4 with a concession period of 26 years, an estimation of the traffic using the tolled highway and its future growth are important elements to assess the project's economics as they are generally the main/sole source of revenue for the project. The Guna – Biaora section of NH-3 is around 93.50 km in length. This chapter details various aspects of the current traffic of the project road and its growth potential.

3.2 Project Road Traffic

The traffic that is likely to use the project road was estimated on the basis of the traffic and travel characteristics using the toll data made available by the client. The traffic on the project road would normally consist of the following components:

- Normal Traffic
- Diverted Traffic
- Induced/Developmental Traffic

3.2.1 Normal Traffic

Normal traffic is the traffic which is already plying on the project road as assessed in Table 2-6 .

3.2.2 Diverted Traffic

Diverted traffic is generally dictated by the presence of an alternative route at a lower generalised cost, which is in-turn defined by the road configuration and its condition, the type of vehicle and its operating costs, the average riding speed, the route distance and any tolling that may apply on a specific route.

In context of the project road, there are no routes in vicinity of toll plazas to avoid the project road. The development of the under-construction green-field Delhi-Mumbai Expressway (DME) may impact the project road traffic.

<u>Delhi – Mumbai Expressway</u>

Delhi–Mumbai Expressway is an under-construction 1,296 km long controlled-access highway connecting the national capital Delhi with India's commercial capital Mumbai. The expressway is proposed on a greenfield-alignment and will be a 12-lane facility (6 lanes in each direction). Being a signal-free access-controlled corridor between the two cities running across five states will cut down the travel time from 25 hours to 12 hours.

This Expressway was first announced in April 2018 by Union Minister Nitin Gadkari and as per the latest update, it is targeted to be completed by January 2023. Around 18 packages out of 50 packages are already under construction, and tenders for several

route sections are being awarded and under various stages of implementation as per latest NHAI update.

The alignment of proposed Delhi – Mumbai expressway is parallel to the project section and it passes through the states of Haryana (80km), Rajasthan (375km), Madhya Pradesh (245km), Gujarat (425 km) and Maharashtra (170km). The alignment of Delhi-Mumbai expressway is presented in Figure 3-1.

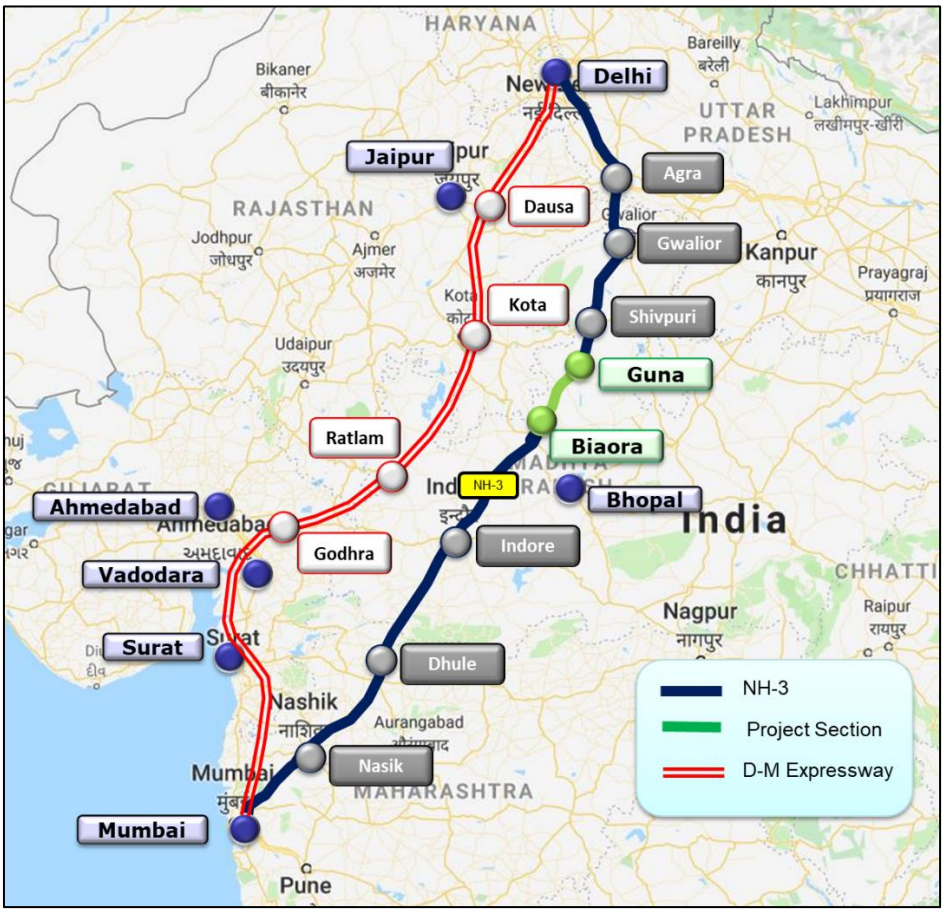

Figure 3-1: Alignment of Delhi-Mumbai Expressway

The route via project section is about 1,387 km as against 1,296 km via DME. Thus, the route via DME is about 90 km shorter than the route via PR. The toll rates for DME are considered as 1.5 times the normal NHAI per km toll rates (accounting for 1.25 times for normal length of expressway and increase for the likely equivalent structure length). Once completed, some of the freight vehicles currently using the project road travelling between Delhi & beyond to Mumbai & surroundings, may find Delhi Mumbai Expressway attractive and may divert from the project road traffic.

The assessment of any likely traffic addition to/diversion away from the Project Road (PR) has been done using the cost ratio analysis as described below:

- Assessment of the potential divertible traffic sensitive to network improvements based on the observed travel pattern

- Calculation of road user cost of travelling on the project road and the alternative route. The road user cost includes vehicle operating cost (VOC), travel time cost (TTC) and toll cost (TC), if any.

The road user cost is estimated based on vehicle operating cost equations presented in Updation of Road User Cost Study (RUCS) carried out by Central Road Research Institute in 2009 for Ministry of Road Transport and Highways. Using the likely traffic stream speeds and lane configuration, the vehicle operating, and travel time costs are estimated for each of the routes. Road user cost on the identified routes is calculated and diversion percentages are estimated using diversion curve method mainly for trucks. In this method, traffic likely to be diverted from/to the project road, was estimated using Logit model, which computes expected diversion percentage based on the ratio of perceived cost on the existing and proposed facilities. The perceived cost is the financial vehicle operating cost and the time saving cost including toll charges (if any). According to the model, a vehicle will shift if the perceived cost on an alternative route is lower in comparison to existing route. The diversion equations for estimating diversion have been adopted from IRC 108:2015. These equations are presented in **Table 3-1**.

Vehicle	Cost Ratio (CR) Interval	Equations
Car	<= 0.634	% Div. = 98.750 - (CR/0.634) * 8.125
	0.634 <= CR <= 1.465	% Div. = 90.625 - ((CR-0.634)/0.831) * 84.375
	1.465 <= CR <= 2.0	% Div. = 6.25 - ((CR-1.465)/0.535) * 5.25
Truck & Bus	<= 0.750	% Div. = 100 - ((CR/0.75) * 5)
	0.750 <= CR <= 1.250	% Div. = 95 - ((CR-0.75)/0.5) * 90
	1.250 <= CR <= 2.0	% Div. = ((2-CR)/0.75) * 5

Source: IRC 108-2015

Table 3-1: Diversion Equations Used for Analysis

The diversion percentages are estimated for the future conditions keeping in view, the updated project road network and surrounding road network. The diversion percentages are then applied to the potential divertible traffic/corridor by OD pair to calculate the traffic that would divert to/from the project road.

The share of project road after the opening of Delhi-Mumbai expressway has been estimated using cost ratio analysis. The assessment has been done for traffic stream between Delhi & beyond to Mumbai & surroundings as derived from the OD analysis of the two toll plazas. The estimated diversion for freight vehicles based on the route choice analysis is presented in **Table 3-2.**

Modes	2A	3A	MAV
Potential traffic	111	124	226
Future Project Road share (%)	41.1	35.3	41.4
Future Project Road traffic	46	44	94
Expected loss from PR	66	80	133

Table 3-2: Impact of Delhi-Mumbai Expressway

The development of the Delhi-Mumbai expressway is expected to result in a loss of about 66-2A, 80-3A, and 133-MAVs. This diversion to DME has been considered in the base case.

As DME is likely to be operational in FY24, the traffic on expressway might take some time to shift on to the expressway. In view of a slow built of traffic on DME, 50 percent of the expected loss due to DME operation has been considered in FY24 and 75 percent for FY25 increasing to 100 percent from FY26 onwards.

3.2.3 Induced/ Development traffic

Developmental /new generated traffic is the one which would be generated, over and above normal growth, because of lowering of transport costs or new developments in the immediate influence area of the project road. In case of the project road, there is no development envisaged in the vicinity of the project road.

Bharatmala Pariyojana is the second largest highways construction project in the country since NHDP, under which almost 50,000 km or highway roads were targeted across the country. It will look to improve connectivity particularly on economic corridors, border areas and far flung areas with an aim of quicker movement of cargo and boosting exports.

It will connect 550 district headquarters to minimum 4-lane highway by raising the number of corridors to 50 (from current 6) and move 80 percent freight traffic (currently 40 percent) to national highways by connecting 24 logistics parks and 7 north east multimodal waterway ports.

The Phase-I includes economic corridors of around 9,000 km; inter-corridor and feeder routes of around 6,000 km; 5,000 km roads under the National Corridors Efficiency Program, border and international connectivity roads of around 2,000 km; coastal and port connectivity roads of around 2,000 km; expressways of around 800 km and 10,000 km of NHDP roads. The total length in phase 1 comes to around 34,800 km.

In the context of the project influence area, there are a few economic corridors and inter corridors listed in the Madhya Pradesh plan. The economic corridors are planned from Jaipur/ Chittorgarh- Indore, Indore-Nagpur and Ahmedabad-Sagar as economic corridors and is likely to improve connectivity with an aim to provide quicker movement of cargo. **Figure 3-2.** presents the details of the upcoming projects under Bharatmala in the project influence area in the context of the project section.

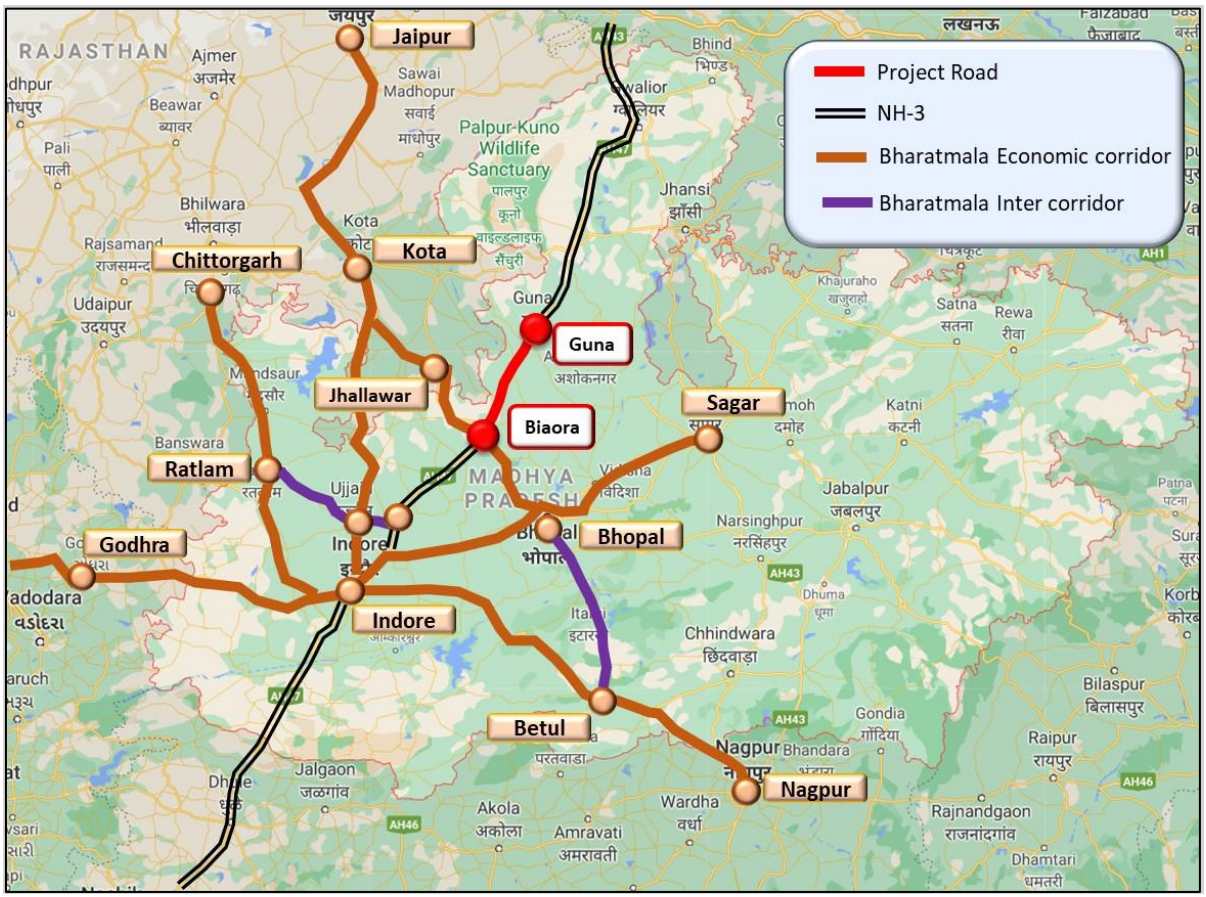

Figure 3-2: Alignment of the Economic Corridors and Feeder Roads

As the project road is a caters to the long-distance traffic, it is likely to remain an important highway for the North-South movement and may see sustained growth in the future. With Ayodhya gaining importance as the tourist hub due to the construction of the new temple, the project road will serve the connectivity between Ayodhya and Ujjain & other religious towns of MP.

3.3 Traffic Growth Rate Estimation

3.3.1 Methodology

Traffic growth for both passenger and freight vehicles has been estimated using the econometric approach as described in IRC-108, 1996. For freight traffic, due consideration has been given to the total tonnage transported and the shift in types of vehicles used for moving goods.

The econometric model applied, relates traffic growth to changes in state (or district) domestic product via an elasticity factor. According to IRC guidelines, elasticity based econometric model for highway projects should be derived in the following form:

$Log_e(P) = A0 + A1\ Log_e\ (EI)$, where:

P = traffic volume;

EI = Economic Indicator;

A0 = Regression constant;

A1 = Regression co-efficient (Elasticity Index).

In order to estimate traffic on the project road the methodology described below has been followed:

- Identify the influence area - From the analysis of OD survey data carried out as part of the present study, the project influencing states and districts, which are likely to impact the traffic growth on the project road, were identified.
- Review Past traffic Data – Based on toll data available for the project, a review of past traffic and tonnage growth is carried out.
- Analysis of economic growth of the Project Influencing Area (PIA) - For each PIA state an economic profile describing past performance and future outlook was prepared. This also considers India's past economic performance and its future outlook.
- Estimation of traffic elasticity to income – in order to translate economic growth into traffic growth, an elasticity factor was estimated.
- Derivation of traffic growth rates – On the basis of the weighted (based on OD shares) PIA outlook and related traffic elasticity, traffic growth rates were estimated.

The methodology thus adopted incorporates, as basic data inputs, the perspective growth envisaged in the influence area and the changes in transport demand elasticities over a period of time. The traffic growth rates by vehicle type for the project road have been determined in line with the concession period of 26 years up to FY42.

3.3.2 Traffic Pattern and Influence Area

The travel pattern as derived from origin and destination survey analysis reveals the predominance of Madhya Pradesh in both passenger and freight vehicles. Besides Madhya Pradesh, the states of Uttar Pradesh, Maharashtra, Delhi and Gujarat do contribute to the project road traffic.

Looking at the predominance of Madhya Pradesh, Uttar Pradesh, Maharashtra, Delhi and Gujarat, these states have been considered as the PIA state for both passenger and freight vehicles. The normalised shares of all the influencing states for the existing toll plazas are presented in **Table 3-3**.

State/ Modes	Car	Bus	LCV	2A	3A	MAV
Madhya Pradesh	85.5	78.5	70.4	54.0	44.8	39.4
Uttar Pradesh	7.9	9.0	9.8	17.4	21.4	23.4
Maharashtra	3.3	6.5	9.3	13.3	17.3	19.8
Delhi	2.0	1.5	7.5	10.8	10.5	8.8
Gujarat	1.2	4.6	2.9	4.5	6.0	8.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 3-3: Normalised OD shares for the project road (%)

The travel pattern on the project road reveals that around 85.5 percent of cars are being generated from the state of Madhya Pradesh. In case of Buses, around 78.5 percent are being generated from the state of Madhya Pradesh. The state of Uttar Pradesh contributes around 8 percent in the car traffic and 9 percent in bus traffic.

The share of LCV is more than 70 percent from Madhya Pradesh and 10 percent from Uttar Pradesh. The Madhya Pradesh contributes around 54 percent in the 2A trucks, around 17 percent share is from Uttar Pradesh, 13 percent from Maharashtra and 11 percent from Delhi. In case of 3A trucks, Madhya Pradesh contributes around 45 percent traffic, while Uttar Pradesh has a share around of 21 percent and Maharashtra has a share of 17 percent. For MAVs, around 39 percent of traffic is being generated from Madhya Pradesh, 23 percent from Uttar Pradesh, 19.8 percent from Maharashtra and about 8 percent each from Delhi and Gujarat.

In the context of the project road, Guna and Rajgarh districts of Madhya Pradesh are the top contributors to the project road traffic.

3.4 Past Economic Growth of PIA

Growth of traffic on the project road depends on existing development and future growth prospects of the connecting regions. A number of economic indicators for the PIA state, as published by Central Statistical Organisation (2011-12 prices), have been studied to assess their past performance.

Madhya Pradesh

- Madhya Pradesh's Gross State Domestic Product (GSDP) stood at Rs 5,618 billion in 2019-20 and has been growing at a compounded annual growth rate of 7.4 per cent since 2011-12.
- The state's growth had been between 3-5 per cent since 2013-15 and picked up to 12.4 per cent in 2016-17. It has shown a growth of around 5.8 percent in FY19 and 7.6 percent in FY20.
- The services sector is the largest contributor to GSDP (41 percent), agriculture allied activities sector at 34.9 percent, secondary sector at 24.1 per cent of the GSDP in 2019-20.

The change of sectoral composition of GSDP over the years is presented in **Figure 3-3.**

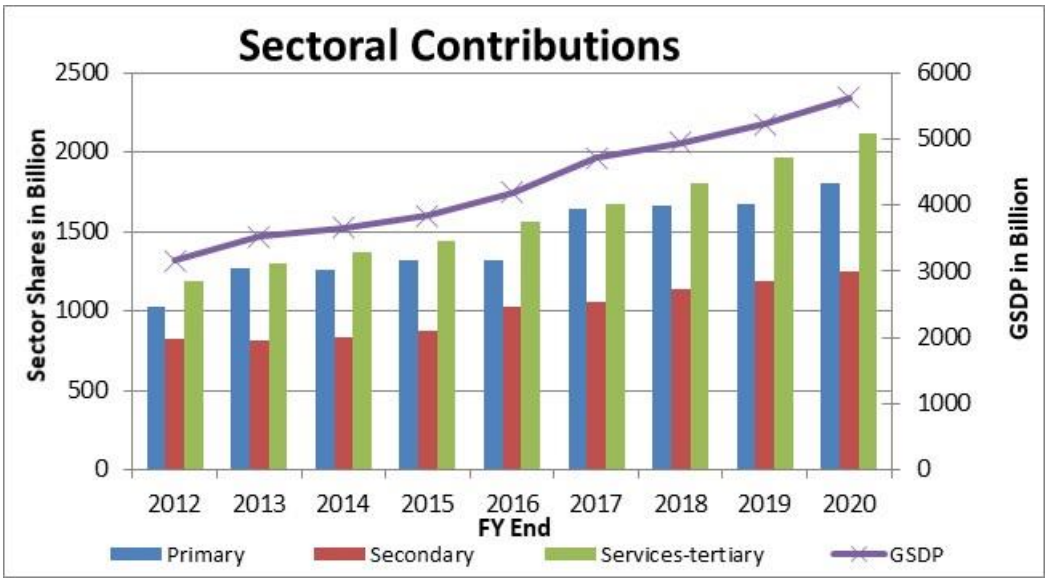

Figure 3-3: GSDP (in Rs billion) and its sectoral composition for Madhya Pradesh

The performance of the state economy and its different sectors has been studied using time trend analysis. The average annual growth rates as obtained using regression analysis are presented in **Table 3-4.**

Particulars	2011-12 to 2018-19	2014-15 to 2018-19
GSDP	7.4%	7.7%
Agriculture and Allied	6.7%	6.8%
Industry	6.2%	6.8%
Services	7.3%	8.0%
Construction	3.5%	4.9%
Per Capita Income	5.8%	6.2%

Table 3-4 : Average Annual Growth Rates (%) of State Income for Madhya Pradesh

Economy of Madhya Pradesh is highly dependent on agriculture, although services and industries play an increasingly significant role in the economy of the state. The construction sector is one of the main drivers of the industrial growth of Madhya Pradesh.

The state is manufacturing base for a number of large and medium scale industries from diverse sectors such as automobile and auto-components, cement, agro-processing, consumer goods, pharmaceuticals, etc. The state has large mineral resources of coal, copper, limestone, and magnesium. The main industries are in the cement, minerals and textile sectors.

Bhopal, Indore, Gwalior and Jabalpur are the major locations where SEZs have been approved. These SEZs have been proposed for mineral-based, agro-based and multi-product industries. There is one operational multi-product SEZ in Indore. Madhya Pradesh will attract encouraging investments and is poised to become a pharmaceutical hub.

The per capita income of Madhya Pradesh is Rs 67,770 in the year 2019-20 and has been growing at 5.8 percent during 2011-12 to 2019-20. The growth in per capita income is presented in **Figure 3-4.**

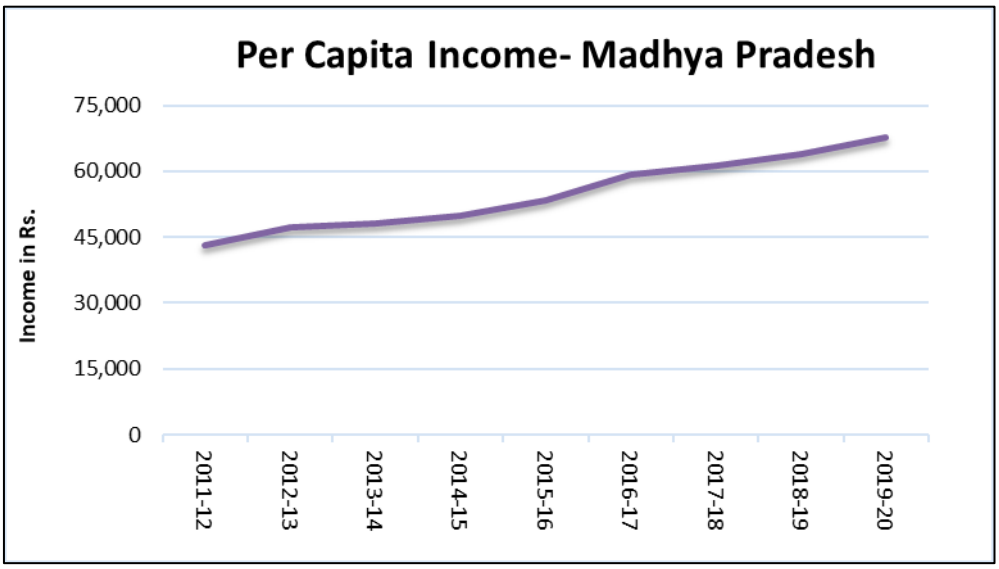

Figure 3-4: Per Capita Income of Maharashtra from 2011-12 to 2019-20

Other PIA States

The other PIA states contributing to the traffic on the project road are Uttar Pradesh, Maharashtra, Delhi and Gujarat.

- Uttar Pradesh's Gross State Domestic Product (GSDP) stood at Rs 11,872.71 billion in 2019-20 and has been growing at a compounded annual growth rate of 6.9 percent since 2011-12. The industrial Policy of one District one product will provide a boost to the economy of the state and has provided direct and indirect employment opportunities to many people in the state.
- Gross State Domestic Product (GSDP) of Maharashtra stood at Rs 20,390 billion in 2018-19 and has been growing at a compounded annual growth rate of 8.5 per cent since 2011-12.
- Delhi's Gross State Domestic Product (GSDP) stood at Rs 6,344 billion in 2019-20 and has been growing at a compounded annual growth rate of 8.2 percent since 2011-12.
- Gross State Domestic Product (GSDP) of Gujarat stood at Rs 11,863.7 billion in 2018-19 and has been growing at a compounded annual growth rate of 9.8 per cent since 2011-12.
- The services sector is the largest contributor to GSDP of the PIA states, 49 percent in Uttar Pradesh, 56 percent in Maharashtra, 85 percent in Delhi and 36 percent in Gujarat. The secondary sector contributes 29 percent and 31 percent in Uttar Pradesh and Maharashtra respectively. This share accounts for about 13 and 47 percent in case of Delhi and Gujarat.

The average annual growth rates as obtained using regression analysis till the last available year (FY12-FY20) are presented in **Table 3-5.**

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State/Particular	Uttar Pradesh	Maharashtra*	Delhi	Gujarat*
GSDP	6.9	8.5	8.2	9.8
Primary	3.9	3.0	0.8	6.8
Secondary	8.8	8.3	8.0	11.2
Tertiary	7.3	9.7	8.2	8.4
Construction	4.9	5.0	5.4	3.1
Per Capita Income	5.2	7.2	6.0	8.2

***- Till FY19**

Table 3-5: Average Annual Growth Rates (%) of State Income for other PIA states

The GSDP over the years for the states of Uttar Pradesh, Maharashtra, Delhi and Gujarat are presented in **Figure 3-5.**

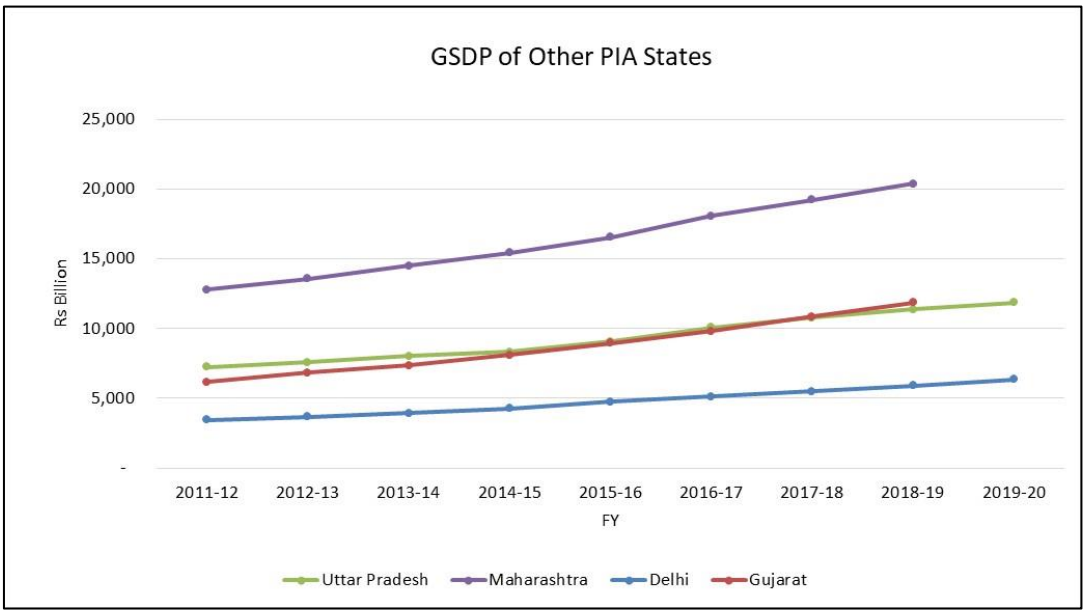

Figure 3-5: GSDP (in Rs billion) for other influencing states of other PIA states

3.5 India and PIA Outlook

3.5.1 India's past performance and outlook for future

India's growth trend during the recent years has been presented in **Figure 3-6**.

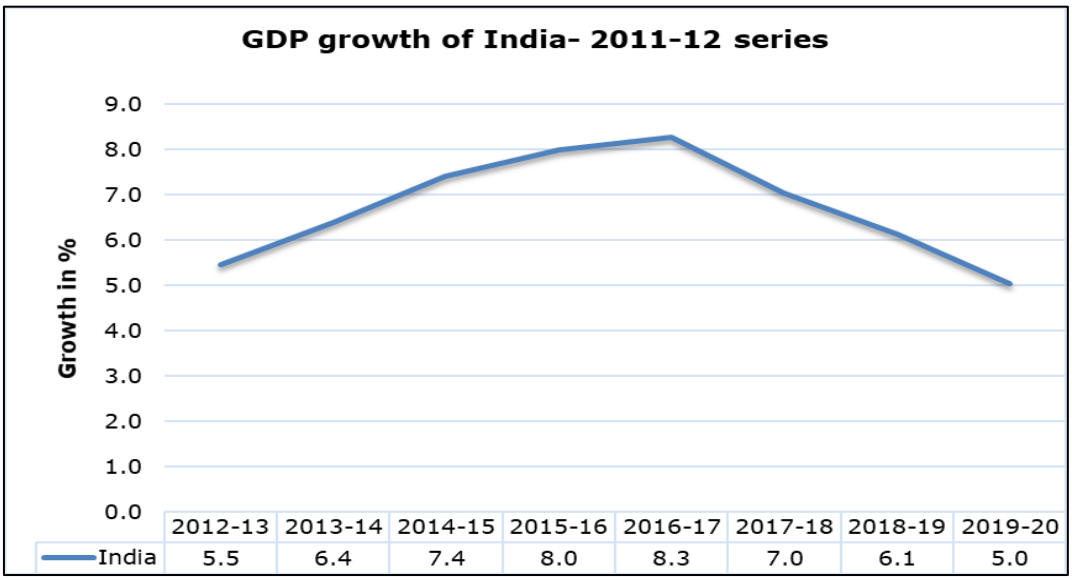

Figure 3-6: GDP growth in India

Economic growth in India has been broadly on an accelerating path till FY18. It is likely to be the fastest growing major economy in the world in the medium-term. The growth in real GDP was 8.3 percent for FY17 and 7.0 percent in FY18, while the growth in FY19 was slightly lower at 6.1 percent. The long-term trend line growth of 7.2 percent has been achieved between FY12 to FY19. During FY20, growth has slowed down due to some structural issues and global headwinds resulting in an average GDP growth rate of 4.2 percent.

With the outbreak of COVID-19, global recession is likely to be witnessed across all the economies. The lockdown period announced by Indian government had an adverse impact on the economy. The first quarter estimated for FY21 has indicated a contraction of 23.9 percent and second quarter showed a rebound in growth by contracting 7.5 percent. The forecast for next two quarters is expected to be minor positive growth (Q3 at 0.1 percent and 0.7 percent in Q4) with economic activities picking up slowly. The resultant contraction for FY21 is expected to be around 7 to 8 percent.

The Indian economy is likely to see the impact of global slowdown due to COVID-19 and hence, the GDP forecast for India by various international agencies has been revised for the next two years. ICRA, Moody and SBI have recently predicted a growth of around -9 to -11 percent for FY21. S&P has predicted -7 percent for FY21 and a strong revival in FY22 with a likely growth of 10 percent. The forecast by IMF on January 26, 2021 for FY21 is -8 percent, 11 percent for FY22 and 6.8 percent for FY23. World Bank on October 9, 2020 has forecasted a growth of around -9.6 percent for FY21 and 5.4 percent for FY22. As per ADB's latest update (December 20), India's GDP is expected to grow by -8 percent in 2021 and 8 percent in FY22. Organisation for Economic Cooperation and Development (OECD) has forecasted the GDP growth to be around -9.9 percent in FY21 and 8.0 percent for FY22.

In light of grim outlook being predicted by various agencies for the current years and likely revival thereafter spread over a couple of years, India's outlook adopted for the present study is around 8.0 percent for FY22. For the long term, the GDP growth is envisaged to be 6.0 percent till FY25, 5.5 percent from FY26 to FY35 and 5.0 percent till the end of concession period.

As per NITI Aayog in the document "Strategy for New India @ 75", the Indian Economy GDP is expected to reach $4.0 trillion by FY23 and the government is providing a push through various reforms to reach a target of $5 trillion by 2025.

The Oxford Economics forecast for 2034 provided under various scenarios suggest Indian Economy to reach $6.8 trillion in scenario 1 - pushing old ways faster (focus on investment in education, health and human capital), $7.4 trillion under scenario 2- turbocharging investment (rapid and significant investment in physical infrastructure) and $10.4 trillion under the most optimistic scenario 3- the winning leap (additional focus on R&D and innovation). The long-term forecast by Deutsche Bank and Bloomberg also estimate the size of Indian Economy by 2030 to be around 7 and 8.4 trillion dollars respectively.

With the present crisis and recent growth trends, target of 5 trillion economy might be difficult to achieve by 2025 and likely to delayed by 2-3 years due to impact of COVID19 and resultant economic slowdown. With the current size of the economy at $3.2 trillion in FY20 and with the adopted GDP growth rates, the economy size of $5 trillion is likely to be achieved by 2029. Also, the forecast is likely to be closer to the Scenario 2 of Oxford Economics which envisages an economy size of $7.4 trillion by 2035.

3.5.2 PIA states outlook

A snapshot of the main economic indicators in the past and the growth adopted for future for the PIA state is presented in **Table 3-6**.

Indicators	Madhya Pradesh	Uttar Pradesh	Maharashtra*	Delhi	Gujarat*
GSDP in Rs Billion	5,618	11,375	20,391	6,344	11,864
GSDP growth (2011/12 to last year) in %	7.4%	6.9%	8.5%	8.2%	9.8%
Per capita Income in Rs (FY20)	67,770	52,154	1,67,581	3,16,650	1,75,630
Sector share in %, FY20					
Agriculture and allied	34.9%	23.0%	13.1%	2.0%	17.1%
Industry	24.1%	29.6%	31.0%	13.5%	47.0%
Services	41.0%	47.3%	55.9%	84.5%	35.9%

**-Till FY19*

Table 3-6: Main Economic indicators of PIA states

Income estimates are available till FY20 for all the PIA states except Maharashtra and Gujarat. The income growth of PIA states of Maharashtra and Gujarat as observed in the

past years (FY12 to FY19) is assumed to continue for FY20. In order to arrive at the forecast of the PIA states, past performance of the State GDPs vis-a-vis India GDP has been studied and the multipliers have been derived for both short term and long term. A reality check is done in the background as to whether adoption of these applicable growth rates for all the states of India lead to achieving the overall target set for India as a whole. The adopted multipliers along with the states' outlook are presented in **Table 3-7**.

Period	India	Madhya Pradesh	Uttar Pradesh	Maharashtra	Delhi	Gujarat
Past growth						
2011-12 to 2019-20	7.0%	9.1%	7.0%	7.1%	8.2%	9.8%
2014-15 to 2019-20	7.0%	11.4%	8.2%	7.3%	8.0%	10.0%
Past Multipliers vis-a-vis India						
2011-12 to 2019-20		1.30	1.00	1.00	1.17	1.40
2014-15 to 2019-20		1.65	1.19	1.06	1.15	1.44
Multipliers adopted for future						
FY22-FY35		1.10	0.90	1.00	1.10	1.20
Outlook adopted for future in %						
FY21-FY22	8.00	8.8	7.2	8.0	8.8	9.6
FY23-FY25	6.00	6.6	5.4	6.0	6.6	7.2
FY26-FY30	5.50	6.1	5.0	5.5	6.1	6.6
FY31-FY35	5.50	6.1	5.0	5.5	6.1	6.6
Beyond 2035	5.00	5.5	4.5	5.0	5.5	6.0

Table 3-7: Past multipliers and future outlook of PIA states

Based on the normalised OD shares of the toll plazas (Table 3-3) and the outlooks adopted for PIA states, the future weighted income is presented in **Table 3-8**.

Period/Modes	Cars	Bus	LCV	2A	3A	MAV
FY22	8.55	8.53	8.45	8.28	8.21	8.19
FY23-FY25	6.41	6.40	6.33	6.21	6.15	6.14
FY26-FY30	5.88	5.86	5.81	5.70	5.64	5.63
FY31-FY35	5.88	5.86	5.81	5.70	5.64	5.63
Beyond FY35	5.35	5.33	5.28	5.18	5.13	5.12

Table 3-8: Future weighted income of PIA states

3.6 Review of Past Traffic Data

Past toll data was available for the toll plaza locations since the start of operations from June 2018 till December 2020. A comparison of the toll data is presented in **Table 3-9**.

FY/Mode	Car	LCV	Bus	2A	3A	MAV
TP01						
FY19	2,147	625	310	1,058	1,293	2,301
FY20	2,748	615	527	1,020	1,273	2,327
FY21	3,984	548	462	1,357	1,418	2,534
YOY Growth Rate in %						

FY/Mode	Car	LCV	Bus	2A	3A	MAV
FY20 vs FY19	28.0%	-1.5%	70.0%	-3.6%	-1.6%	1.1%
FY21 vs FY20	45.0%	-11.0%	-12.3%	33.1%	11.5%	8.9%
End Point Growth in %						
FY21 vs FY19	36.2%	-6.4%	22.1%	13.2%	4.7%	4.9%
TP02						
FY19	1,365	411	348	879	1,216	2,151
FY20	1,824	393	678	723	1,205	2,225
FY21	3,030	424	488	1,178	1,363	2,409
YOY Growth Rate in %						
FY20 vs FY19	33.6%	-4.4%	94.5%	-17.7%	-0.9%	3.4%
FY21 vs FY20	66.1%	7.8%	-28.0%	62.9%	13.1%	8.3%
End Point Growth in %						
FY21 vs FY19	49.0%	1.5%	18.3%	15.7%	5.9%	5.8%

Table 3-9: Past traffic comparison

The comparison of the past data shows an exorbitant double-digit growth in cars at the toll plaza locations between FY19 and FY21. LCVs have shown a negative growth except for 7.8 percent at TP02 in FY21 vs FY19 comparison. The growth in 2A trucks has been negative in the initial year of operation but a double-digit growth is observed in FY21 vs FY20 comparison. MAVs have shown a growth between 8-9 percent at both the toll plazas for FY20 vs FY21 comparison whereas for 3A the growth has been around 11-13 percent for the same year. The end point growth between FY19 and FY21 has been in the range of 5-6 percent for both 3A and MAV.

3.7 Past and Future Transport Demand Elasticity

The econometric model applied for the project, relates traffic growth to changes in state domestic product via an elasticity factor according to IRC guidelines. The elasticity by vehicle types have been estimated based on the regression analysis of weighted income of PIA states with the actual traffic data.

A regression between GSDP (as independent variable) and registered vehicles (as dependant variable) of PIA state of Madhya Pradesh was carried out. The registered vehicle elasticity in case of cars is 1.21. In case of all trucks combined, the registered vehicle elasticity is 1.7.

Vehicle registration data is also used as a proxy wherein operational toll data is not available. Vehicle registration data represents all vehicles registered in the state, but does not indicate actual number of vehicles plying on the road as it does not account for factors such vehicles taken off the road due to lack road worthiness, those registered in a state but mostly used elsewhere, etc. Consequently, the elasticity values based on vehicle registration may not be representative of the traffic growth trends on the project road.

In general, the best measure of deriving traffic elasticity to income is time series data of traffic on the road. In case of the project road, past traffic data is available since the year

of operation of the toll plazas. The YOY mode wise traffic elasticity has been derived using rate of growth in the traffic vis a vis the rate of growth in income (weighted income derived from weighted OD shares). The elasticity estimates for different time periods have been done using regression analysis with mode wise traffic as dependent variable and weighted income as independent variable. The income growth of PIA state of Gujarat and Maharashtra as observed in the past years (FY12 to FY19) is assumed to continue for FY20. The year on year actual elasticity and trend line elasticity values between GSDP and traffic for the toll plazas is presented in **Table 3-10**.

FY/Mode	Car	LCV	Bus	2A	3A	MAV
TP01						
FY20 vs FY19	2.4	-0.1	6.4	-0.3	-0.2	0.1
FY21 vs FY20	8.1	-1.9	-2.1	5.2	1.7	1.3
TP02						
FY20 vs FY19	2.9	-0.4	8.6	-1.7	-0.1	0.3
FY21 vs FY20	12.0	1.3	-4.7	9.8	2.0	1.2

Table 3-10: Actual Traffic Elasticity

Cars

- The elasticity observed at the toll plazas in the first year of operation has been around 2.4-3.0 in FY19 and FY20. A further high elasticity of around 8.0-12.0 is seen in FY20 and FY21. This could be due to the completion of widening (to four lane) of all the sections on NH3. In case of cars, the elasticity values derived across the other national highways is between 1.0 to 1.5 varying from asset to asset. Some of the assets have shown an elasticity as high as 1.7 to 2.0. The elasticities and the past growth levels for cars are a result of increasing income levels, increasing vehicle ownership, and higher propensity to travel on highways in India due to network level developments and higher levels of service. These levels of growth are likely to continue in the near to medium term since car ownership levels are still very low and the road network is undergoing continual development. Considering all these aspects, coupled with the importance of the project road being the link for the towns of Gwalior and Guna in northern part of MP to Indore (financial capital of the state) and Bhopal (administrative capital of state), car elasticity has been considered as 1.4 for the period up to FY25 and tapering beyond that.
- The motorisations levels in India also play an important role in determining car growth. With the increasing car ownership levels, propensity to travel and network level improvements on National Highways, car growth is likely to be at a high rate as witnessed in the recent past. The low motorization rate suggests that there is room for continued growth for many years to come. The motorisation rate for cars (per 1000 population) in India has gone up from 6.6 in 2001 to 20 in 2015. Although India's car fleet has been growing at 10% for nearly 25 years, its motorization rate is low compared to other countries of similar wealth and much lower than developed

countries with motorization rate of around 450. The forecasts by different agencies indicate that number of cars will increase to 35 per thousand populations by 2025. With the continual increase in motorization rate and improved road network usage by cars for inter-urban travel, car growth is expected to be robust.

- It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity to GSDP can be expected to decline over time. With the anticipated growth momentum in the coming years, higher elasticity values have been considered for the slab up to FY25 and further tapering has been done in the next slab.

Bus

- Over the years in India, there has been a change in passenger's travel mode preferences with increasingly more people shifting from public transport systems towards personalised modes. This has resulted, in general, in elasticity of bus traffic/demand to GSDP lower than unity ranging between 0.3 to 0.7 across the operational National Highways.
- Bus elasticity has been considered as 1.0 for FY22 and 0.7 for the period FY23 to FY35 and 0.6 till the end of concession period.

Trucks

- For MAV category, an elasticity ranging between 1.2 and 1.3 was observed at TP01 and TP02 in FY20 to FY21 comparison whereas 3A trucks have shown an elasticity of 1.7-2.0 for the same year. With the existing share of 36 percent for 3A trucks amongst 3A and MAV, it is likely that with the tonnage shifts happening towards MAV due to their operational efficiencies, the share of 3A will further go down. Therefore, an elasticity of 0.6 has been adopted for 3A trucks and 1.0 for MAV trucks till FY25. 2A trucks have shown a very high growth/elasticity in last one year. Going forward, 0.9 has been adopted till FY25.
- It is likely that this growth would slow down over time as the market becomes more mature and saturated, therefore elasticity to GSDP can be expected to decline over time. With the anticipated growth momentum in the coming years, higher elasticity values have been considered for the slab up to FY25 and further tapering has been done in the next slab.

In India as a whole, the freight vehicle mix has been changing in the last decade favouring MAV to 2 Axle/ 3Axle vehicles for long-distance traffic, given the operational efficiencies achievable with larger vehicles. Considering the ongoing technical advancements in automobile industry, some of the standard 2 Axle/ 3 Axle trucks would gradually be replaced by MAVs. Mature National highways with tolling in operation for few years, have

already witnessed the shift in 2A/3A trucks to MAV for long distance movement and some of the 2A trucks are still being used for local movements.

The changing trend is clearly visible in the sales of trucks. Demand for the traditional 16T and 25T rigid trucks is declining while segments like 31T and 37T rigid trucks and 35T, 40T and 49T tractor-trailers are gaining major traction. In fact, the 37T multi-axle rigid truck segment is one of the fastest growing segments in HCVs.

As per SIAM, LCV goods carrier have shown a growth of 25 percent in FY17 to FY19 and M&HCV rigid/ trailer trucks witnessed a growth of around 17 percent during the same period. However, all the vehicles have shown a double-digit negative growth in FY20 due to the economic slowdown, COVID 19 and technology disruption in the form of compliance to Bharat Stage VI norms etc. The elasticity for LCV observed at the toll plazas is negative which could be partially due to Mini LCV being charged in car is gaining popularity for short distance traffic and more localised supply movements over the years. An elasticity of 0.6 for LCV category has been adopted up to FY35 and 0.5 has been considered till the end of concession period.

On an overall level, due consideration has been given to the tonnage shifts happening in the market with Mini LCV gaining importance for short distance movements over LCVs and MAVs being preferred over 2A/3A for long distance movements due to better operational efficiencies. Some of the 2A/3A trucks are also being used for local movements.

While assigning elasticities to different modes, freight travel pattern and over all elasticity of cargo tonnage with respect to weighted GSDP has been an important consideration. The recommended elasticity values adopted for all vehicle types in line with the traffic growth being observed on other national highways and changes in freight traffic pattern observed on the project road are presented in **Table 3-11.**

Period/Modes	Cars	Bus	LCV	2A	3A	MAV
FY22	1.4	1.0	0.6	0.9	0.6	1.0
FY23-FY25	1.4	0.7	0.6	0.9	0.6	1.0
FY26-FY30	1.3	0.7	0.6	0.8	0.5	1.0
FY31-FY35	1.2	0.7	0.6	0.7	0.5	0.9
Beyond FY35	1.1	0.6	0.5	0.6	0.4	0.8

Table 3-11: Recommended Elasticity for Project Road

3.8 Projected Traffic Growth Rates

Based on the moderated perspective elasticity values and the projected growth rates of the income for PIA states, the future average annual compound traffic growth rates by vehicle type have been estimated for the project road by using the following relationship:

Tgr = (GSDPgr) x E ; Where,

Tgr – Traffic growth rate for mode

GSDPgr – growth rate of GSDP

E – Elasticity value for mode

The estimated traffic growth rates for the project road have been presented in **Table 3-12.**

Period/Modes	Car	Bus	LCV	2A	3A	MAV
TP01 and TP02						
FY22	12.0	8.5	5.1	7.5	4.9	8.2
FY23-FY25	9.0	4.5	3.8	5.6	3.7	6.1
FY26-FY30	7.6	4.1	3.5	4.6	2.8	5.6
FY31-FY35	7.1	4.1	3.5	4.0	2.8	5.1
Beyond FY35	5.9	3.2	2.6	3.1	2.1	4.1

Table 3-12: Projected Traffic Growth Rates for PIA (%)

In derivation of above growth rates, the likely shift of buses to cars in case of passenger vehicles and the replacement/ tonnage shift of 2A/3A trucks to MAV for long distance in case of freight vehicles has been duly considered. Adopting these growth rates for 3A and MAV, the resultant market share of 3A goes down to 25 percent from the current level of 36 percent. Based on the above growth rates the average cargo growth (tonnage) is likely to be around 4.5 percent till the end of concession period.

The above growth rates relate to the most likely Base Case. In addition, two sets of traffic growth rates under low and high cases have also been considered and impact on toll revenue evaluated for both these cases. A growth rate of 200 basis point (2 per cent) lower than base case, for all types of vehicles modes has been considered in low growth scenario. A 100-basis point higher traffic growth rate than the base case has been considered for high growth scenario.

3.9 Modifications in Concession Period and Capacity Analysis

Table 3-13 presents the projections of the tollable vehicles after considering the impact of DME (from FY24 onwards) at the toll plazas on the project road based on the most likely growth rates till the end of concession as assessed in this study.

FY/TPs	TP01	TP02	Average
2021	25,934	23,607	24,770
2022	28,021	25,483	26,752
2023	29,687	26,973	28,330
2024	30,840	27,938	29,389
2025	32,366	29,260	30,813
2026	33,723	30,431	32,077
2027	35,502	32,012	33,757
2028	37,381	33,680	35,531
2029	39,368	35,442	37,405

FY/TPs	TP01	TP02	Average
2030	41,469	37,304	39,386
2031	43,519	39,120	41,319
2032	45,679	41,030	43,354
2033	47,953	43,040	45,497
2034	50,349	45,156	47,752
2035	52,873	47,382	50,127
2036	55,010	49,262	52,136
2037	57,241	51,224	54,232
2038	59,570	53,269	56,420
2039	62,003	55,404	58,703
2040	64,543	57,630	61,087
2041	67,196	59,954	63,575
2042	69,968	62,380	66,174

Table 3-13: Projected Traffic at the toll plazas

The target traffic as per RFP is deemed to be 27,136 PCUs as on 1st October 2025. Based on the above traffic forecast, the traffic estimated on the project road as the average of the traffic for the three consecutive accounting years (FY25 to FY27) is estimated to be 32,216 PCUs which is around 18.7 percent higher than the target traffic.

As per clause 29.2.1 of CA, if the Actual Average Traffic shall have fallen short of or exceeded the target traffic by more than 2.5 percent, then there will be an increase or reduction in concession period.

Based on the CA (clause 29.2.1), if the traffic in PCUs at target date is higher than the target traffic, then for every 1 percent increase, the concession period shall be decreased by 0.75 percent, and no more than 10 per cent of the base concession period.

The concession period may, therefore, be subject to a decrease by 2.6 years to 23.4 years. However, in lieu of reduction in concession period, the concessionaire may opt to pay 25 percent of the realisable fee over the respective years to NHAI.

Based on the projected traffic using the recommended Base Case growth rates, the project road traffic is likely to reach the designed capacity of 60,000 PCUs in FY40.

4. TOLL REVENUE PROJECTIONS

4.1 Tolling Strategy

Generally, in DBFOT road projects, "Open System" of toll collection is specified. As the project road has been widened on existing alignment and there are several roads joining the highway, an open tolling system has been implemented on the project road. This enables the concessionaire to collect tolls from through traffic as well as from short distance one.

As mentioned earlier, two toll plazas are operational on the project road at Pagara and Jogipura with effective tolling length of 56.577 km and 48.117 km respectively.

4.2 Schedule of User Fee

As per Schedule of User Fee (Schedule R) of Concession Agreement for the project, the per km toll rates applicable from 2007-08 for normal tolling length and permanent structures, the revision basis and concessions are provided.

The concessions to traffic have been given in the form of rates as below:

Local traffic

Car / Jeep / Vans - includes local users owning a vehicle registered for non-commercial purposes, residing within a distance of 20 km from the toll plaza and crossing the same for commuting purposes. The discounted fee for these users is currently a monthly pass of Rs. 275.00

Commercial vehicles - includes local users owning a commercial vehicle (excluding vehicles under National Permit), registered with address on the Registration Certificate of a particular district and uses such vehicle for commuting on a section of National Highway, permanent bridge, tunnel or bypass, as the case may be, which is located within that district, shall be levied user fee on all toll plazas which are located within that district at the rate of fifty per cent of the prescribed rate of fee (single journey rate). No such concession shall be provided, if a service road or alternative road is available for use by such commercial vehicles. Thus, local commercial traffic has to pay only 50 percent of the normal ticket.

Daily Pass

When the vehicle has to cross the tolled section more than once in a day, the user shall have the option to pay one and half times (1.5 times) of the fee for a single entry; this pass shall be valid for 2 entries within 24 hours of purchase.

Monthly Pass

A user, who makes use of the project road frequently during a month, may opt to purchase a monthly pass upon payment of a charge equal to two-thirds of the fee payable

for 50 single journeys; this pass can be used for a maximum 50 one-way journeys over the month of validity.

Thus, the different categories of toll tickets are as follows:

(i) Traffic paying normal toll rates (single trip)
(ii) Traffic paying return journey rates
(iii) Traffic paying monthly pass rates
(iv) Traffic paying local personal rates
(v) Traffic paying local commercial rates

4.3 Tolling Streams

The tolling stream distribution has been derived from the toll data and the latest year of FY21 has been adopted for the present study and is presented in **Table 4-1.**

Ticket Type/Modes	Car	LCV	Bus	2A	3A	MAV
TP01						
Single	81.0	81.6	94.2	98.4	97.3	99.0
Return	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Local personal	3.5	0.0	0.0	0.0	0.0	0.0
Local commercial	0.0	13.5	0.4	0.0	0.0	0.0
Exempt	15.4	4.9	5.4	1.6	2.7	1.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
TP02						
Single	88.9	95.9	95.0	99.0	98.4	99.6
Return	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0
Local personal	0.5	0.0	0.0	0.0	0.0	0.0
Local commercial	0.0	0.6	0.0	0.0	0.0	0.0
Exempt	10.6	3.5	5.0	1.0	1.6	0.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 4-1: Tolling Distribution (incl. exemptions & violations), FY21 (%)

The paying traffic for the year FY21 has been worked out by deducting the toll exempt percentage (exemptions and violations, FY21) from total AADT and is presented in **Table 4-2.**

Toll Plaza/Mode	Car	LCV	Bus	2A	3A	MAV	OSV
TP01							
Base AADT including toll exempted vehicles	3,984	548	462	1,357	1,418	2,534	3
% of Exemptions/ Violations	15.4%	4.9%	5.4%	1.6%	2.7%	1.0%	5.3%
Paying Traffic	3,369	521	437	1,336	1,380	2,510	3
TP02							
Base AADT including toll exempted vehicles	3,030	424	488	1,178	1,363	2,409	3
% of Exemptions/ Violations	10.6%	3.5%	5.0%	1.0%	1.6%	0.3%	2.9%
Paying Traffic	2,709	409	464	1,166	1,342	2,401	3

Table 4-2: Toll Paying Traffic, FY21

The tolling stream distribution excluding exemptions and violations from paying traffic is presented in **Table 4-3.**

Ticket Type/ Modes	Car	LCV	Bus	2A	3A	MAV	OSV
TP01							
Single	95.8	85.8	99.6	100.0	100.0	100.0	100.0
Return	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local personal	4.1	0.0	0.0	0.0	0.0	0.0	0.0
Local commercial	0.0	14.2	0.4	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
TP02							
Single	99.4	99.3	100.0	100.0	100.0	100.0	100.0
Return	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Monthly	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Local personal	0.6	0.0	0.0	0.0	0.0	0.0	0.0
Local commercial	0.0	0.6	0.0	0.0	0.0	0.0	0.0
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Table 4-3: Tolling Distribution (excl. exemptions and violations category), FY21(%)

The normal toll paying traffic for cars is around 96 percent at TP01 and 99 percent of car traffic at TP02. The local personal traffic is around 4 percent at TP01 and 0.6 percent at TP02. In case of Buses also, majority of the traffic is falling in normal toll category.

For LCV category, around 86 percent is buying normal ticket at TP01 and 14 percent of traffic is opting for local commercial pass. This could be due to the local trips being made to GAIL and National Fertilizer Plant located in vicinity of TP01. At TP02, 99 percent is falling under normal toll category. For 2A/3A/MAV category, all of the traffic is opting for normal ticket as these vehicles have a long lead of travel and are less likely to return in the same day.

Trip rate for local pass users is considered as 1.0, for monthly pass it is 1.67 across all modes. For daily pass, based on the past toll data, trip rate of 2.0 has been considered for all the modes.

4.4 Toll Rates

This section presents details on the toll rates that are likely to be imposed on the users of the project road during the concession period. The toll rates (Rs/km) for the base year 2007-08 for different vehicle categories as per concession agreement are presented in **Table 4-4.**

Mode	Base rate per km (in Rs)
Car, Jeep, Van, LMV	0.65
LCV /Mini Bus	1.05
Bus/ 2 Axle Truck	2.20
3 Axle	2.40
MAV	3.45
Oversized	4.20

Table 4-4: Toll Rates in Rs/km for Different Vehicle Categories

The CA states that the 2007 toll rates shall be increased without compounding by three per cent each year with effect from the 1st day of April 2008 and such increased rate shall be deemed to be the base rate for the subsequent years.

In addition to this, the rate of fee for use of bypass forming part of a section of a National Highway constructed with a cost of Rs 10 crore or more, for the base year 2007, shall be one and a half times of the per km base rates specified above and the length of such bypass shall be excluded from the length of such section of National Highway.

In addition to this, the fee levied and collected hereunder for permanent bridge/ structures, as the case may be, having a length of 60 m or more on the basis of the cost for structure as specified shall be due and payable at the toll plaza.

In case of the project road, the details of normal tolling lengths, bypass length (at 1.5 times) and equivalent structure lengths being charged at the two toll plazas of Pagara and Jogipura are presented in **Table 4-5**.

	Length in km	
	TP01	TP02
A. Normal length	49.222	35.668
B. Bypass length @ 1.5 times	2.05	5.75
C. Equivalent Structure length	4.280	3.824
D. Total tolling length = (A+1.5*B+C)	56.577	48.117

Table 4-5: Tolling lengths at two toll plazas

The effective tolling lengths are 56.777 km and 48.117 km at Pagara (TP01) and Jogipura (TP02) respectively.

The applicable base rates shall be revised annually with effect from April 1 each year to reflect the increase in wholesale price index for the month of December of the immediate

preceding year in which sub revision is undertaken but such revision shall be restricted for 40 per cent of the increase in wholesale price index.

Actual WPI information for December 2020 of 124.5 under 2011-12 series converted into 1999-00 series (124.5*1.873*1.641=382.7) has been used. In view of the past inflation trend, the forecast for WPI has been considered as 4.0 percent for the period till the end of concession in light of the long term past growth trend since 2009. The stream of toll rates to be charged at the toll plazas for different years is presented in **Table 4-6.** The toll fee has been rounded to nearest 5 Rupees as per Schedule R of the concession agreement.

FY End	Car	LCV	Bus/2A	3A	MAV	OSV	Car Local
TP01							
2021	70	110	230	250	360	440	275
2025	80	130	270	290	420	510	325
2030	100	160	330	360	520	635	400
2035	120	195	410	450	645	785	495
2040	150	245	510	555	800	970	615
2042	165	265	555	605	870	1,060	670
TP02							
2021	60	95	195	215	305	370	275
2025	65	110	230	250	355	435	325
2030	85	135	280	305	440	540	400
2035	105	165	350	380	545	665	495
2040	130	205	435	470	680	825	615
2042	140	225	470	515	740	900	670

Table 4-6: Toll rates at toll plazas (in Rs)

The users purchasing return journey tickets will pay 1.5 times the above toll rates; the traffic opting for monthly passes will pay 33.3 times (two-thirds of 50 single journeys) the normal traffic toll rates. All passes have been rounded to the nearest 5 Rupees as per concession agreement.

4.5 Toll Revenue Estimates

The concession period for the project road is 26 years from the appointed date (the date financial close is achieved). Toll revenue streams have been calculated assuming that:

- Toll would be collected for all 365 days in a year; and for 366 days in the leap years
- Tolling would terminate at end of March 2042 and revenues have been presented till FY42

In addition to the mode wise toll revenue, there is a component of total revenue from POS and WIM for which mode wise details are not available. This component accounts for 1.11 percent of the total revenue for the project road in the first three quarters of FY21. Therefore, the total revenue has also been presented adding this component of revenue from POS and WIM.

The toll revenue for the project road for the base case along with the concessions available is presented in **Table 4-7.**

FY ending March	Normal Toll	Return Passes	Monthly Passes	Local Concessions	Total Revenue without POS and WIM	Total Revenue with POS and WIM
2021	1,201.1	-	0.0	2.2	1,203.3	1,216.7
2022	1,397.9	-	0.0	2.4	1,400.3	1,415.9
2023	1,546.1	-	0.0	2.8	1,548.9	1,566.1
2024	1,664.9	-	0.0	2.9	1,667.8	1,686.4
2025	1,818.0	-	0.0	3.3	1,821.3	1,841.5
2026	1,984.0	-	0.0	3.5	1,987.5	2,009.6
2027	2,163.6	-	0.0	3.9	2,167.6	2,191.7
2028	2,373.0	-	0.0	4.4	2,377.3	2,403.8
2029	2,614.2	-	0.0	4.6	2,618.8	2,648.0
2030	2,860.7	-	0.0	5.1	2,865.9	2,897.8
2031	3,109.6	-	0.0	5.7	3,115.3	3,149.9
2032	3,417.2	-	0.0	6.1	3,423.3	3,461.4
2033	3,732.3	-	0.0	6.7	3,739.0	3,780.6
2034	4,097.5	-	0.0	7.4	4,104.9	4,150.6
2035	4,483.1	-	0.0	8.1	4,491.3	4,541.2
2036	4,870.0	-	0.0	8.6	4,878.6	4,932.8
2037	5,250.9	-	0.0	9.3	5,260.3	5,318.8
2038	5,720.5	-	0.1	10.1	5,730.6	5,794.4
2039	6,201.2	-	0.1	11.0	6,212.2	6,281.3
2040	6,773.9	-	0.1	11.9	6,785.9	6,861.4
2041	7,316.3	-	0.1	12.9	7,329.3	7,410.8
2042	7,947.5	-	0.1	14.0	7,961.6	8,050.1

Table 4-7: Toll Revenue (in Rs million) by type of concession for the Project Road

For the project, the normal toll revenue is likely to be about 99.8 percent of total toll revenues for the project road. Local concessions have a share of about 0.2 percent in the project road revenue.

A mode wise breakdown of the revenue streams is also presented for the project in **Table 4-8**.

FY End	Car	LCV	Bus	2A	3A	MAV	OSV	Total Revenue without POS and WIM	Total Revenue with POS and WIM
2021	134.6	31.8	66.0	185.0	219.2	565.9	0.84	1,203.3	1,216.7
2022	159.1	35.3	77.3	214.7	247.7	665.3	0.99	1,400.3	1,415.9
2023	180.6	38.5	84.5	237.0	270.5	736.7	1.09	1,548.9	1,566.1
2024	204.0	41.8	92.5	255.1	283.9	789.3	1.21	1,667.8	1,686.4
2025	230.3	46.3	101.4	279.1	300.2	862.6	1.34	1,821.3	1,841.5
2026	264.7	49.8	109.8	299.4	318.0	944.3	1.48	1,987.5	2,009.6
2027	293.2	53.7	118.7	325.2	341.4	1,033.9	1.63	2,167.6	2,191.7
2028	327.0	57.9	129.6	357.0	363.8	1,140.2	1.80	2,377.3	2,403.8

FY End	Car	LCV	Bus	2A	3A	MAV	OSV	Total Revenue without POS and WIM	Total Revenue with POS and WIM
2029	372.0	61.9	140.5	389.0	391.3	1,262.2	1.97	2,618.8	2,648.0
2030	423.0	67.5	151.2	420.6	418.0	1,383.3	2.18	2,865.9	2,897.8
2031	453.1	72.4	165.2	458.8	449.1	1,514.3	2.38	3,115.3	3,149.9
2032	512.7	77.4	179.1	497.3	486.3	1,667.8	2.62	3,423.3	3,461.4
2033	575.4	85.0	194.4	538.9	519.0	1,823.4	2.87	3,739.0	3,780.6
2034	646.2	92.0	212.5	588.9	558.1	2,004.1	3.15	4,104.9	4,150.6
2035	724.0	98.0	230.4	637.4	599.0	2,199.0	3.46	4,491.3	4,541.2
2036	802.8	106.1	249.3	689.5	635.4	2,391.7	3.77	4,878.6	4,932.8
2037	867.5	113.0	266.3	735.5	680.8	2,593.1	4.08	5,260.3	5,318.8
2038	977.2	121.8	286.5	790.6	725.8	2,824.2	4.44	5,730.6	5,794.4
2039	1,075.1	130.9	309.4	852.8	768.5	3,070.5	4.81	6,212.2	6,281.3
2040	1,203.8	139.4	336.2	925.9	823.0	3,352.4	5.24	6,785.9	6,861.4
2041	1,316.5	149.0	358.8	987.4	878.8	3,633.1	5.70	7,329.3	7,410.8
2042	1,468.0	159.3	387.3	1,064.8	934.8	3,941.2	6.19	7,961.6	8,050.1

Table 4-8: Toll Revenue (in Rs million) for Project Road by mode

Cars represent around 16 percent share in total revenue with Buses having a share of 5.1 percent only. Amongst the freight vehicles category, MAVs represent the highest share of around 48.9 percent of total revenue. 3A trucks account for a share of 13.6 percent, LCVs and 2A trucks have a share of 2.2 percent and 14.2 respectively.

4.6 Scenario Analysis

For toll road projects, revenue streams are generally based on the assessment of the traffic volume (base and future) crossing the toll plazas and the applicable toll imposed on the user of the road. There is an inherent element of uncertainty in any forecast and whilst is not possible to measure risk in a strictly statistical sense (as many of the risks are largely or partly unknown), in this section an attempt is made at quantifying the main risks that could have an impact on this forecast.

The econometric approach used to derive traffic growth, is based on the estimation of GSDP growth rates for the influence area economies and traffic demand elasticity by mode; the estimation of both variables contains a certain degree of uncertainty which can be represented in the scenario analysis. Scenario analysis has been done in the following subheadings for the base case:

High Case

The high case is based on a more optimistic economic outlook for future years as compared than the base case and therefore, based on traffic growth rates of 100 basis points (1 per cent) higher than the base case for every year and for all modes.

Low Case

A growth rate of 200 basis point (2 percent) lower than base case for all types of vehicles has been considered in the present analysis to reflect uncertainty with regard to economic performance of PIA states.

Without DME

This scenario estimates the impact of diversion to DME in terms of the gain in toll revenue which could have occurred in the event of DME not being there as an alternate route option.

Scenario Results

The results of different scenarios are presented in **Table 4-9.** A comparison versus base case has been presented for the Present Value of the project (at 12 per cent discount rate) and the compounded annual growth rate (CAGR) from FY21 to end of concession (FY42).

FY ending March	Base Case	High Case	Low Case	Impact of Diversion to DME
2021	1,216.7	1,216.7	1,216.7	1,216.7
2022	1,415.9	1,429.0	1,389.7	1,415.9
2023	1,566.1	1,595.6	1,508.0	1,566.1
2024	1,686.4	1,734.3	1,593.1	1,724.2
2025	1,841.5	1,911.8	1,706.9	1,904.0
2026	2,009.6	2,106.1	1,827.3	2,101.1
2027	2,191.7	2,318.7	1,954.9	2,291.2
2028	2,403.8	2,567.3	2,103.4	2,512.6
2029	2,648.0	2,854.9	2,273.0	2,767.4
2030	2,897.8	3,153.9	2,440.3	3,027.6
2031	3,149.9	3,461.1	2,602.0	3,291.5
2032	3,461.4	3,839.5	2,804.8	3,616.3
2033	3,780.6	4,233.5	3,005.1	3,948.9
2034	4,150.6	4,692.1	3,236.4	4,334.6
2035	4,541.2	5,182.5	3,473.7	4,741.8
2036	4,932.8	5,683.5	3,700.8	5,149.8
2037	5,318.8	6,187.2	3,913.6	5,552.8
2038	5,794.4	6,805.0	4,181.7	6,047.7
2039	6,281.3	7,447.6	4,446.1	6,555.0
2040	6,861.4	8,213.5	4,763.5	7,158.9
2041	7,410.8	8,956.3	5,046.2	7,731.5
2042	8,050.1	9,822.3	5,376.4	8,396.5
PV12	19,779	21,674	16,606	20,475
PV12 vs base		9.6%	-16.0%	3.5%
CAGR FY21 to FY42	9.4%	10.2%	7.1%	9.4%

Table 4-9: Comparison of Annual Revenues Forecasts (Base) to Alternate Traffic Growth Assumptions

The low growth scenario has a negative impact on revenue PV of about 16 percent versus base case (till FY42), whilst the optimistic growth scenario would generate about 9.6 percent higher PV than the base case. The project would have gained 3.5 percent more revenue in PV terms than the base case in case DME was not there.

The project road revenues will have a CAGR of 9.4 percent for the period up to FY42.

APPENDICES

APPENDIX 2.1
DAILY AVERAGE TOLL DATA

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

Month wise Toll Data

PAGARA TOLL PLAZA

FY-21							
FY21	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-20	973	212	261	572	837	1,942	1
May-20	3,565	699	613	803	1,041	2,186	5
Jun-20	4,286	431	605	874	1,320	2,327	4
Jul-20	3,956	497	702	990	1,437	2,560	3
Aug-20	4,023	492	334	1,516	1,437	2,627	3
Sep-20	3,717	564	541	1,690	1,514	2,713	4
Oct-20	3,731	604	365	1,757	1,674	2,800	4
Nov-20	4,528	565	376	1,554	1,501	2,592	3
Dec-20	4,768	615	503	1,575	1,529	2,686	3
Jan-21							
Feb-21							
Mar-21							
Average	**3,728**	**520**	**478**	**1,259**	**1,366**	**2,493**	**3**

FY-20							
FY20	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-19	2,659	658	386	1,149	1,349	2,516	3
May-19	2,961	623	430	1,065	1,380	2,551	1
Jun-19	3,013	629	402	1,054	1,290	2,419	2
Jul-19	2,536	602	379	1,022	1,219	2,272	2
Aug-19	2,586	578	419	966	1,156	2,149	2
Sep-19	2,203	614	416	1,093	1,255	2,298	2
Oct-19	2,359	578	435	1,010	1,208	2,206	2
Nov-19	2,769	616	483	971	1,242	2,160	2
Dec-19	2,690	596	580	904	1,231	2,106	3
Jan-20	2,923	620	671	886	1,250	2,248	3
Feb-20	3,261	650	859	1,006	1,358	2,487	3
Mar-20	3,015	623	861	1,112	1,335	2,518	2
Average	**2,748**	**615**	**527**	**1,020**	**1,273**	**2,327**	**2**

FY-19							
FY19	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-18							
May-18							
Jun-18	2,312	666	333	1,043	1,448	2,290	2
Jul-18	2,062	629	263	993	1,255	2,131	1
Aug-18	2,061	663	269	1,076	1,332	2,393	2
Sep-18	1,829	644	279	1,164	1,305	2,477	2
Oct-18	1,826	642	293	1,134	1,342	2,333	1
Nov-18	2,069	537	304	893	1,191	2,057	3
Dec-18	2,125	586	310	977	1,279	2,220	2
Jan-19	2,309	582	306	940	1,188	2,159	2
Feb-19	2,431	629	371	1,122	1,291	2,424	2
Mar-19	2,447	673	367	1,242	1,298	2,527	9
Average	**2,147**	**625**	**310**	**1,058**	**1,293**	**2,301**	**3**

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

Month wise Toll Data

JOGIPURA TOLL PLAZA

FY-21							
FY21	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-20	498	175	252	447	750	1,828	1
May-20	2,861	630	636	730	981	1,953	5
Jun-20	3,238	406	770	591	1,270	2,202	4
Jul-20	2,962	436	905	630	1,368	2,460	5
Aug-20	3,248	384	328	1,416	1,360	2,535	3
Sep-20	2,954	443	538	1,595	1,452	2,674	4
Oct-20	2,840	458	359	1,636	1,674	2,711	4
Nov-20	3,467	409	376	1,431	1,439	2,451	3
Dec-20	3,671	435	479	1,410	1,421	2,455	3
Jan-21							
Feb-21							
Mar-21							
Average	**2,860**	**419**	**516**	**1,098**	**1,301**	**2,363**	**4**

FY-20							
FY20	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-19	1,827	414	476	929	1,279	2,412	3
May-19	2,096	389	514	852	1,283	2,386	1
Jun-19	2,130	385	492	840	1,244	2,287	2
Jul-19	1,656	380	452	805	1,143	2,185	3
Aug-19	1,734	356	444	804	1,094	2,067	2
Sep-19	1,376	387	486	876	1,192	2,217	2
Oct-19	1,568	355	563	755	1,150	2,119	3
Nov-19	1,862	378	606	697	1,191	2,079	2
Dec-19	1,738	364	806	519	1,174	2,004	3
Jan-20	1,785	380	974	396	1,152	2,116	3
Feb-20	2,141	456	1,180	544	1,305	2,382	3
Mar-20	1,972	474	1,141	665	1,256	2,444	3
Average	**1,824**	**393**	**678**	**723**	**1,205**	**2,225**	**3**

FY-19							
FY19	**Car, Jeep, Van**	**LCV**	**BUS**	**2A**	**3A**	**MAV**	**0SV**
Apr-18							
May-18							
Jun-18	1,569	426	314	923	1,302	2,175	3
Jul-18	1,236	409	285	847	1,207	1,993	1
Aug-18	1,320	430	306	964	1,333	2,258	2
Sep-18	1,125	455	328	984	1,235	2,325	2
Oct-18	1,046	427	358	901	1,263	2,183	1
Nov-18	1,233	344	352	707	1,102	1,908	3
Dec-18	1,312	371	349	767	1,212	2,023	3
Jan-19	1,426	369	341	731	1,082	2,006	2
Feb-19	1,686	421	421	912	1,200	2,260	3
Mar-19	1,696	459	430	1,060	1,222	2,382	28
Average	**1,365**	**411**	**348**	**879**	**1,216**	**2,151**	**5**

APPENDIX 2.2
TRAFFIC ZONING SYSTEM

Traffic Zoning system for Guna-Biaora section of NH-3 in Madhya Pradesh			
Traffic Zoning System			
Zone	Place/Region	District/ State	State
1	Guna	Project Road/Guna district	Madhya Pradesh
2	Ruthiyai		
3	Pagara		
4	Raghogarh/Daurana		
5	Awan/Palpur/Bairakhedi		
6	Janjali		
7	Kumbhraj/Fekara		
8	Sopra/Barsat		
9	Binaganj		
10	Penchi/Murela		
11	Jogipura/Kankan Heru		
12	Pakhripura		
13	Dobda	Project Road/Rajgarh district	
14	Biaora		
15	Miana/Bhadaura	Guna district	
16	Berkhedi/Fatehgarh		
17	Maksundangarh		
18	Rajgarh/Jirapur	Rajgarh district	
19	Pachore/Sarangpur/Narsinghgarh		
20	Morena	Morena district	
21	Bhind	Bhind district	
22	Gwalior	Gwalior district	
23	Datia	Datia district	
24	Sheopur	Sheopur district	
25	Shivpuri	Shivpuri district	
26	Ashoknagar/Chanderi/Mungaoli	Ashoknagar district	
27	Vidisha	Vidisha district	
28	Bhopal	Bhopal district	
29	Sehore/Ashta/Hosangabad	Sehore district	
30	Dewas	Dewas district	
31	Ujjain	Ujjain district	
32	Ratlam	Ratlam district	
33	Indore	Indore district	
34	Pithampur/Dhar	Dhar district	
35	Rest of Madhya Pradesh	Rest of Madhya pradesh	
36	Jaipur/Ajmer	Jaipur/Ajmer	Rajasthan
37	Kota/Bhilwara	Kota/Bhilwara	
38	Udaipur/Chittorgarh	Udaipur/Chittorgarh	
39	Rest of Rajasthan	Rest of Rajasthan	
40	Ahemdabad	Ahemdabad	Gujarat
41	Vadodara/Surat	Vadodara/Surat	
42	Rest of Gujarat	Rest of Gujarat	
43	Mumbai city	Mumbai city	Maharashtra
44	JNPT/Mumbai port	JNPT/Mumbai port	
45	Mumbai Suburban	Mumbai Suburban	
46	Nasik	Rest of west Maharashtra	
47	Pune	Rest of west Maharashtra	
48	Dhule/Malegaon/Jalgaon	Rest of central Maharashtra	
49	Nagpur/Warda/Amravati	Rest of east Maharashtra	
50	Aurangabad/Jalna	Rest of central Maharashtra	
51	Ahemadnagar/Solapur	Rest of east Maharashtra	
52	Noida/Ghaziabad	Noida/Ghaziabad	Uttar Pradesh
53	Aligarh/Moradabad	Aligarh/Moradabad	
54	Agra	Agra	
55	Jhansi	Jhansi	
56	Lucknow/Kanpur	Lucknow/Kanpur	
57	Prayagraj/Varanasi	Prayagraj/Varanasi	
58	Rest of Uttar Pradesh	Rest of Uttar Pradesh	
59	Delhi	Delhi	Delhi
60	Faridabad	Faridabad	Haryana
61	Gurgaon	Gurgaon	
62	Sonipat/Panipat/Karnal	Sonipat/Panipat/Karnal	
63	Rest of Haryana	Rest of Haryana	
64	Punjab	Punjab	Punjab
65	Chandigarh	Chandigarh	Chandigarh
66	Uttarakhand	Uttarakhand	Uttarakhand
67	Himachal Pradesh	Himachal Pradesh	Himachal Pradesh
68	Jammu Kashmir & Ladhak	Jammu Kashmir & Ladhak	Jammu Kashmir & Ladhak
69	Bihar	Bihar	Bihar
70	West Bengal	West Bengal	West Bengal
71	Chhattisgarh	Chhattisgarh	Chhattisgarh
72	Odisha	Odisha	Odisha
73	Jharkhand	Jharkhand	Jharkhand
74	Andhra Pradesh	Andhra Pradesh	Andhra Pradesh
75	Telanagana	Telanagana	Telanagana
76	Karnataka	Karnataka	Karnataka
77	Tamil Nadu	Tamil Nadu	Tamil Nadu
78	Kerala	Kerala	Kerala
79	Assam /North eastern states	Assam /North eastern states	Assam /North eastern states

APPENDIX 2.3
TRAVEL PATTERN OF VEHICLES IN THE STUDY AREA

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-PAGARA

Mode Car

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	0		2	251	9		24		34					114			11	7										134		4			60		39			4		4		8	11																														4				4			724
2		0		56					4					11			4																		19																																													93
3	8		0																	12	12	70																																																										103
4	219	49		0																		16		4	4	20																												4																										316
5	12				0																	8				4																																																						24
6		4				0																																																																										4
7	61	4					0																		8	4																																	4																					81
8								0																																																																								0
9	81								0													12																																																										93
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13													0																																																																			0
14	120														0								4	12			4	4																												8	4				4																					160
15															0																																																																	0
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17	20	4															0					4				4																																																						32
18	4																		0								4																																	4																					12
19	12																			0			4				4																																																						20
20			15											2						0								4		4			11									2																													4									41
21			15											2							0							4					9																																															30
22			174	15	7		4		7					6			4	7				0						39	2	11	117		184	4	55				12			2	7																																					657
23																							0																																																									0
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25				4			4		4					15					7						0			7			4		30		7								11								4																									4				101
26				22	7				4					7			7									0							19		15				4			4	4																																					93
27	4																										0																																																					4
28	109																				77			8	4		0																										4	8	8		8	12								4		6											249
29																													0																																																			0
30																														0																										8																								8
31	6	4																								4					0																								4	16		4																						39
32																									4							0																																																	4
33	67																				2			24	24							0																					4	20	24		16	8				4						2											196
34																																		0																																													0
35	83	16																				4		4	16	16									0																			27	4	4		8	20		4								2											209
36																																				0																																												0
37														4														7					4				0												4																															19
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40																																							0																																								0
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42	8																			4		8				4																0													8	4		4	4										2											46
43	12																				8			12	4																	0											4				28	12				8						2											91
44																																												0																																					0
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46																									4																					0																																		4
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56														4														26		4	2		19		9				4	4		8	7													0																4				7				97
57																																															4										0																						4
58																		4	4									11					4		6			4					30				4		4									0																	4					73
59														4														26			4		19		15					4		11	22					4											0																					108
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78																																																																			4											0		4
79																																																																															0	0
Total	843	81	205	348	24	0	32	0	52	0	0	0	0	168	0	0	26	19	11	16	16	242	0	8	85	105	4	283	2	30	130	4	371	7	196	0	4	7	23	15	0	36	116	0	0	0	15	4	8	0	4	0	0	51	57	80	0	73	77	0	4	0	16	0	0	4	12	12	20	0	4	4	4	0	4	11	7	4	0	3984

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-PAGARA

Mode Bus

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	0			11	4		29		4					4			7	4															18		29																																														110
2		0																																						4																																							4
3			0																																																																															0
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79																																																																																		0
Total	108	21	0	11	4	0	29	0	7	0	0	0	0	7	0	0	7	4	0	0	0	29	0	0	0	0	0	11	0	0	15	0	56	0	47	0	0	0	7	4	4	22	22	0	0	0	0	0	0	0	0	0	0	0	0	15	0	15	5	0	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	462

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

Travel Pattern of Vehicles at TP01-PAGARA

Mode LCV

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	0			103			4		8					5														5						4		1									2																																						134
2		0	2	2	2																																																																																		6
3		3	0																																																																																						3
4	35			0																		10	3	5	5																																	1																										59
5	1				0																						3																																																																4
6						0																																																																																						0
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Total	47	5	2	114	2	0	8	0	8	0	0	0	0	20	0	0	0	0	0	3	3	43	3	5	16	13	0	27	0	0	19	0	32	0	2	3	0	0	0	4	0	8	15	0	0	33	0	0	0	2	2	0	0	10	3	6	0	3	46	0	0	3	5	0	3	0	0	5	5	3	0	0	0	4	0	10	2	0	3	548

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-PAGARA

Mode 2 Axle

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
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74																																																																						2					0					2	4
75																						2																																		4										2									0					8
76																						4																																		4			6		6									4						0			4	28
77																																																											4											2							0		2	8
78																																																																		3												0		3
79																												3					3							3		6	3																																				0	19
Total	50	0	0	63	0	0	3	0	0	0	0	3	0	19	0	0	3	6	3	10	6	109	4	0	26	10	2	72	0	0	3	0	259	3	14	2	0	3	7	25	3	47	41	0	0	28	41	0	13	0	0	8	2	54	18	74	6	32	132	0	12	0	6	6	0	14	0	10	30	20	0	0	2	3	9	16	6	6	14	1357

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-PAGARA

Mod 3 Axle

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	0			7										3																			7									3	3																																					23
2		0																																												3																																			3
3			0																																																																													0
4	2			0																		3																																2	5	2	5		3																					21
5					0																																																																											0
6						0																																																																										0
7							0																																																																									0
8								0																																																																								0
9									0																																																																							0
10										0																																																																						0
11											0																																																										2											2
12												0																																																																				0
13													0																																																																			0
14														0								3																																							3																			7
15															0																																																																	0
16																0																																																																0
17	3																0					3																																									2																	8
18																		0																																									2																					2
19																			0																																								3																					3
20																				0								3					3																	3																														10
21																					0																																																											0
22				13							3			3								0					2	7			7		53		2				2			3	3			3	7																													3	3		114
23				3																			0								3		3										3																																					13
24																								0																																																									0
25																									0								3																																																	3
26																										0		3																																																						3
27																											0																																																							0
28	11																					15			5			0								2																		2		5		3	7				2			2				3										56
29																													0																													2																						2
30																					2	5			2					0																																																			8
31	2																					2									0																																																			3
32																																0																											3																					3
33	36																			8		26			8	2							0																					11	3	15		13	39									5	2	2										170
34																																		0																						2			2																					3
35	3																					2			7										0		3																	11	3	7		5	16				3						3	2										66
36																																	3			0			2																																											5
37																																					0																																													0
38																																						0																																												0
39																																							0																											2															2
40																																								0																			3										2	3										8
41																						5				2															0														3	2		3	3										3											21
42	3																					8																				0														7		16	3				3						2	2										44
43																						7				2											3						0											11	2	11		13	23							3		3	5	5									2	90
44																																												0																																						0
45																						5																							0							2			2															2										10
46																					3	8			3																					0							2	3		3		7	7		3		2	2																43
47	3																																														0					2		2		3		7	10		3					3														33
48																									3																							0						2					3		2								5											15
49																																																	0							3																										3
50																																																		0								3								2														5
51																																																			0								5																						5
52																																																				0																													0
53																																																					0																												0
54				3																											3		3		3								7			26								0																		3								49
55				3										3																										3	3										3				0																									16
56				7																								3					112							7	7	7	26				10									0																	2							179
57																																									3						3										0																							7
58				7																								3				3	16										13			3												0																						46
59				3										3														10					56	3					3		3	3	20				13		3										0																3	10	3			139
60																																	3																3											0															3					10
61																																																													0															3				3
62																												3																							3											0																		7
63																												7					3									3	3	3																			0																	20
64																												3																																				0																3
65																																															3																		0															3
66																												3					3	3					3											3																0										3				20
67																																											3							3																	0													7
68				3																													3							3					3			3																				0												16
69																																	7							3		7																												0											16
70																																	3																																					0										3
71																																																																								0									0
72																																																																									0								0
73																																																																										0							0
74																																																																						2					0					2	3
75																						5			3																																									2									0					10
76																						7																																		3			8		2															0				20
77																																																											10		3			3						2							0		2	20
78																																																																														0		0
79																																	3									3						7																															0	13
Total	64	0	0	49	0	0	0	0	0	0	3	0	0	13	0	0	0	0	0	8	5	103	0	0	31	5	2	46	0	0	13	3	287	7	5	2	7	0	10	16	16	30	82	3	3	36	36	10	7	10	7	3	2	44	18	62	5	72	151	0	16	0	11	5	0	13	0	8	25	20	0	3	2	0	7	16	7	3	5	1418

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-PAGARA

Mode MAV

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0			6			6										11			
2		0																		
3			0																	
4	9			0																
5					0															
6						0														
7							0													
8								0												
9									0											
10										0										
11											0									
12												0								
13													0							
14	3													0						
15															0					
16																0				
17	3																0			
18																		0		
19																			0	
20																				0
21																				
22				17		3	6													
23							6													
24																				
25														11						
26																				
27																				
28	15																			
29																				
30																				
31																				
32																				
33	25																			3
34																				
35	6																			3
36				6																
37																				
38																				
39	3																			
40																				
41																				
42	3																			
43																				
44																				
45																				
46																				
47																				
48																				
49																				
50																				
51																				
52																				
53																				
54																				
55																				
56				11																
57				11																
58																			6	
59				11										6						
60																				
61																				
62																				
63									6											
64								6												
65																				
66																				
67																				
68																				
69																				
70																				
71																				
72																				
73																				
74																				
75																				
76																				
77																				
78																				
79																				
Total	68	0	0	63	0	3	17	6	6	0	0	0	0	17	0	0	11	0	6	6

O\D	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1								6							6					
2																				
3																				
4		6			3															
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14		12			3															
15																				
16																				
17																				
18																				
19																				
20													54							
21	0																			
22		0										6	28		14				3	6
23			0																	
24				0																
25					0								17						6	
26						0		6												
27							0													
28		18			3	3		0									6			
29									0											
30		3								0										
31											0									
32												0								
33	3	55			9								0							
34		3												0						
35	3	22			3										0					
36																0				
37															3		0			
38																		0		
39																			0	
40		3																		0
41																				
42		15			3															
43		25			3															
44																				
45																				
46		6																		
47		6																		
48		3																		
49																				
50																				
51																				
52																				
53																				
54								6					11							
55													6							6
56								11		3	3		212							
57								6												
58								6					17							6
59								34					23		3					6
60													3							
61								6												
62																				
63													9	3					6	
64													9		3					
65																				
66													3							
67																				
68																				
69								6					11		3					6
70																				11
71																				
72																				
73																				
74																				
75																				
76		3																		
77		3																		
78		3																		
79																				
Total	6	187	0	0	28	3	0	85	0	3	3	6	403	3	32	0	6	0	14	40

O\D	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1									6											
2																				
3																				
4														3	3	6		15		
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																			3	
15																				
16																				
17																			3	
18																		3		
19																3		3		
20																				
21																				
22		6				6	11			3										
23		11																		
24																				
25		11	6																	
26																				
27																				
28														6		3		18	22	3
29																				
30																				
31																				
32																				
33														6	12	12		8	39	
34														3		3		3		
35														15		45		11	12	
36							6													
37																				
38																				
39																			3	
40														3		3		3	6	
41	0															9		3	3	
42		0													3	22	12	34	15	
43			0											18	6	68		25	55	
44				0																
45					0														6	
46						0								6		3		15	22	
47							0									9	3	3	18	3
48								0						3					6	
49									0				3						3	
50										0						3		3		
51											0									
52												0								
53													0							
54			6		6	34			6					0						
55		23													0					
56		11	28	65												0				
57		11	6														0			
58	6	6		6														0		
59		11	28				17	6	6	6	6								0	
60			6																	0
61																				
62			6																	
63							17													
64			6																	
65																				
66																				
67																				
68																				
69		11	6																	
70		6	6			11	17													
71																				
72																				
73													3							
74																3			3	
75																3			6	
76														3				3	15	
77																			9	
78																				
79		6	11			6														
Total	6	114	114	71	6	57	68	6	17	9	6	3	3	68	25	196	15	151	250	6

O\D	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1																	6			46
2																				0
3																				0
4			3																	49
5																				0
6																				0
7																				0
8																				0
9																				0
10																				0
11																				0
12																				0
13																				0
14																				22
15																				0
16																				0
17																				6
18																				3
19																				6
20																				54
21																				0
22													3	6		6				123
23																				17
24																				0
25																				51
26																				6
27																				0
28			3		3					6										111
29																				0
30																				3
31																				0
32																				0
33	3		3	6		3			9	6									3	206
34																				12
35			3	3					3	3										132
36																				11
37																				3
38																				0
39																				6
40				3						15									6	43
41									3											18
42				6		3			3	6									6	132
43				3			6		6	3									18	237
44																				0
45																				6
46		3			3		3		22	6										89
47	3		3			9		3	3											65
48									3											15
49					6															12
50																			3	9
51																				0
52																				0
53																				0
54															6					74
55																				34
56																				346
57																				34
58																6				57
59																11				174
60															17	3				28
61	0																			6
62		0													3					9
63			0													3				43
64				0																23
65					0															0
66						0														3
67							0													0
68								0												0
69									0								6			49
70										0		6								57
71											0									0
72												0								0
73													0							3
74														0						6
75										3					0					12
76			3			3		3	3							0			3	40
77				3					6								0			22
78																				3
79																				23
Total	6	3	18	25	12	18	9	6	61	49	0	6	3	6	26	28	11	0	40	2537

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

Travel Pattern of Vehicles at TP01-JOGIPURA

Mode Car

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	0													71				28	16									243		11	34	3	181		42					
2		0												6				3	3									3												
3			0																																					
4				0																								37												
5					0																							3												
6						0													6									3												
7							0							6														8					1							
8								0																				3												
9									0					13				6	3									20			1		3							
10										0				14					1									3												
11											0																													
12												0																					1							
13													0																											
14	168			8			5		38	3				0																										
15															0																									
16																0																								
17																	0																							
18	24			6		6	6		23	6								0																						
19	39			3					21										0							6														
20																				0																				
21																					0																			
22														54				8				0						45		3	8		257							
23														3									0										3							
24																								0																
25														14				3	3						0			6			3	3	17							
26																										0		11			6		11							
27																											0													
28	82			9	3	3			27													64			6			0												
29	9																								3				0											
30	12																					3								0										
31	43						2		8													6			6						0									
32																						12										0								
33	85			12			2		6											18	3	67			46	15							0							
34																									6									0						
35				68																															0					
36														11														3								0				
37																		3										3					3				0			
38																																						0		
39																																							0	
40																																								0
41																																								
42																																								
43																																								
44																																								
45																																								
46	6																					15																		
47	3								9																	3														
48																																								
49																																								
50																																								
51																																								
52																																	17							
53														35													3				3				36					
54																			14									14			3		28							
55																												8			8		14							6
56																												8			28		25						3	
57																																								
58																												6			23		6							
59																												6			14		3							
60																															3									
61																															3		3							
62																																								
63																																								
64																															3									
65																																								
66																																								
67																																								
68																																								
69																																								
70																																								
71																																								
72																																								
73																																								
74																																								
75																																								
76																																								
77																																								
78																																								
79																																								
Total	472	0	0	106	3	9	14	0	132	9	0	0	0	227	0	0	0	51	45	18	3	167	0	0	67	24	3	433	0	14	140	6	574	0	79	0	0	0	3	6

O\D	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1			3																																					632
2																																								14
3																																								0
4			3																																					40
5																																								3
6			11																																					20
7																																								16
8																																								3
9			3																																					48
10																																								18
11																																								0
12																																								1
13																																								0
14														9	3	29			3																					266
15						3																																		3
16																																								0
17																																								0
18														6																										77
19														3	3																									76
20																																								0
21																																								0
22	3		3																																					382
23																																								6
24																																								0
25			3				6																																	57
26		3																																						31
27																																								0
28														2	5			3	27																					231
29														2					3																					17
30																9																								24
31														3	6	21			3																					97
32														6																										18
33														52	3	6		3	18																					335
34																																								6
35																																								68
36			11																																					25
37																																								8
38																																								0
39																																								0
40																																								0
41	0														9																									9
42		0																																						0
43			0													3			3																					6
44				0																																				0
45					0									3				3																						6
46						0												3																						24
47							0																																	15
48								0																																0
49									0																															0
50										0																														0
51											0																													0
52												0																												17
53													0																											78
54			3			3								0																										65
55			11												0																									48
56	20		28													0																								113
57																	0																							0
58	14		6			3												0																						57
59			6																0																3					31
60			17																	0																				20
61																					0																			6
62																						0																		0
63																							0																	0
64	3																							0																6
65																									0															0
66																										0														0
67																											0													0
68																												0												0
69	3																												0											3
70																														0										0
71																															0									0
72																																0								0
73																																	0							0
74																																		0						0
75																																			0					0
76																			3																	0				3
77																																					0			0
78																																						0		0
79																																							0	0
Total	42	3	108	0	0	8	6	0	0	0	0	0	0	85	29	68	0	12	61	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3030

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-JOGIPURA

Mode Bus

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	0																										41					31									5																																							76
2		0																																																																															0
3			0																									5																																																						5
4				0																								5																																																						5
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18	14																	0																																																												14
19									5										0																																																											5
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31	9																														0																																																	9
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33	59																					5				14							0																					5					18																					99
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76	5			5																																																																								0				9
77																																																																														0			0
78																																																																																	0
79																																											5																																								5
Total	131	0	0	5	0	0	0	0	32	0	0	0	0	20	0	0	0	0	0	5	0	5	0	0	0	14	0	86	0	5	10	0	71	0	0	5	0	0	0	0	20	5	10	0	0	15	5	0	0	0	0	0	0	9	0	18	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	488

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-JOGIPURA

Mode LCV

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0														16				3	5	
2		0																		
3			0																	
4				0														3		
5					0														
6						0													
7							0											1	
8								0											
9									0					4				1	4	
10										0									
11											0								
12												0							
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14	2								6					0						
15															0				
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18	2																0		
19	2																	0	
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78																				
79																				
Total	13	0	0	3	0	2	0	0	10	0	0	0	0	21	0	0	0	6	13	0

O\D	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1								5		1			3							
2										1										
3																				
4																				
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6													3							
7													1							
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20															66					
21	0							1											
22		0						6					28							
23			0																	
24				0																
25					0			4		1			1							
26						0							5							
27							0													
28		2						0											
29									0											
30										0										
31											0									
32												0								
33		13				2							0							
34														0						
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41		2																		
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53																				
54													1							
55																				
56										1	1		8							
57																				
58													3							
59								5					4							
60													1							
61																				
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74																				
75																				
76																				
77																				
78																				
79																				
Total	0	26	0	0	0	2	0	23	0	5	1	0	57	0	66	0	0	0	0	0

O\D	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1																				
2																				
3																				
4																				
5																				
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19														2						2
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27																				
28																2		2	3	
29																				
30																2				
31																				
32																				
33												2	2		2	5		5	13	
34																2				
35																				
36																				
37																				
38																				
39																				
40																2				
41	0															2		2	5	
42		0																2		
43			0											2		3	2	2	2	2
44				0																
45					0															
46						0									2						
47							0					2				3	2	5		
48								0								2				
49									0					2				3	10	
50										0									2	
51											0								2	
52												0								
53													0							
54														0						
55			1												0					
56			3			1										0				
57																	0			
58			3															0		
59							3		5										0	
60																				0
61									1											
62																				
63							1													
64								1												
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67																				
68																				
69			1			1														
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72																				
73																				
74														2			2			
75																				
76														2					3	
77																			3	
78																				
79																				
Total	3	0	9	0	0	3	4	1	8	1	0	3	2	11	2	21	5	19	42	3

O\D	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1																1				34
2																				1
3																				0
4																				3
5																				0
6																				3
7																				3
8																				0
9																				9
10																				0
11																				0
12																				0
13																				0
14																				11
15																				0
16																				0
17																				0
18																				2
19																				5
20																				68
21																				1
22															3					39
23																				0
24																				0
25																				6
26																				5
27																				0
28								2											3	16
29																				0
30																				2
31																				0
32				2																2
33																				50
34																				2
35										2										2
36																				0
37																				0
38																				0
39																				0
40																				2
41									2	2										13
42									3	2									2	10
43									2										3	19
44																				2
45																				0
46																				2
47						2														15
48																				3
49																				18
50																				2
51																				2
52																				0
53																				0
54																				1
55																				1
56																1				15
57																				0
58																1				8
59																3		3		21
60																				1
61	0													1						3
62		0																		0
63			0																	1
64				0												1				4
65					0										1					1
66						0								1						3
67							0													0
68								0												0
69									0											3
70										0										3
71											0									0
72												0								0
73													0							0
74														0						3
75															0					0
76																0				5
77																	0			3
78																		0		0
79																			0	0
Total	0	0	0	2	0	2	0	2	6	5	0	0	0	3	4	8	0	3	8	424

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-JOGIPURA

Mode 2 Axle

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	0													15				3	9	
2		0																		
3			0																	
4				0														3		
5					0															
6						0														
7							0												2	
8								0												
9									0				3	11				2	5	
10										0										
11											0									
12												0								
13													0							
14	1						8		38					0						
15															0					
16																0				
17																	0			
18	1																	0		
19	1																		0	
20																			3	0
21																				
22																				
23																				
24																				
25																				
26																				
27																				
28	3			3			4													
29																				
30																				
31									3											
32	3																			
33	24						3		1											
34																				
35																				
36																				
37																				
38																				
39																				
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41																				
42																				
43	1																			
44																				
45																				
46							4													
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51																				
52																				
53																				
54														3						
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73																				
74																				
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76																				
77																				
78																				
79																				
Total	34	0	0	3	0	0	18	0	42	0	0	0	3	35	0	0	0	8	20	0

O\D	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1								16		2			16							
2										2										
3																				
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20																				
21	0							2												
22		0						17					66							
23			0																	
24				0																
25					0		3	5	3	2			2							
26						0							6							
27							0													
28		4						0												
29									0											
30					5					0										
31		15			3						0									
32												0								
33		45			12	9							0							
34														0						
35															0					
36																0				
37																	0			
38																		0		
39																			0	
40	3																			0
41		4																		
42		1																		
43	4																			
44																				
45																				
46		3																		
47	3	1																		
48		1																		
49		1																		
50																				
51																				
52																				
53													3							
54									2				5		2					
55													5							
56								2		3	2		78							2
57																				
58								3			3		11							
59								22		3	3		23							
60													2							
61													3							
62																				
63								6			3		3							
64								2												
65																				
66								3							3					
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71																				
72																				
73																				
74																				
75																				
76																				
77																				
78																				
79																				
Total	9	82	0	0	22	9	3	76	5	11	11	0	233	0	5	0	0	0	0	2

O\D	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
1								3												
2																				
3																				
4																				
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13																				
14														1						
15																				
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18																				
19														1						1
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22	3								3											
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26																				
27																				
28												3		5		1		4	8	
29																				
30																1			13	
31																				
32																				
33												1	1		7	7		4	21	
34														3		1				
35																			3	
36																				
37																				
38																				
39																				
40																1				
41	0											3			3	4	3	1	4	
42		0																7		
43			0									4		1	3	1	1	9	8	1
44				0																
45					0															
46						0						3		1					5	3
47							0					4	3	8		13	1	16	18	
48								0								1			3	
49									0					1					11	
50										0									1	
51											0								1	
52			2			3	5					0								
53													0							
54	2		2											0						
55			2												0					
56	5	5	9		3	5	8				2					0				
57																	0			
58	2	3	3		3				2									0		
59			9			2	14		6										0	
60							3													0
61			2						2											
62																				
63			3				5													
64			2				3	2												
65																				
66		3	6			3	5			2										
67																				
68																				
69		3	5			2														
70			2						2											
71																				
72																				
73																				
74														1			1		1	
75																				
76												8		7					13	
77																		3	7	
78																				
79																				
Total	11	14	45	0	6	14	42	5	14	2	2	25	4	30	12	32	7	44	118	5

O\D	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1																5				68
2																				2
3																				0
4																				3
5																				0
6																				0
7																				6
8																				0
9																				23
10																				0
11																				0
12																				0
13																				0
14									3											58
15																				0
16																				0
17																				0
18																				1
19																				7
20																				3
21																				2
22											3			3	3	6	3			108
23																				0
24																				0
25																				14
26																				6
27																				0
28						3		1											3	41
29																				0
30																				20
31									3											22
32				1																4
33						3			3	3									3	145
34																				4
35										1										4
36																				0
37																				0
38																				0
39																				0
40																			3	7
41									1	1										24
42									3	4									1	16
43			3						4	3									3	46
44																				0
45																				0
46	1		3							3										25
47				3		5													3	78
48																				5
49																				13
50																				1
51																				1
52																2				11
53																				3
54																				14
55															2					8
56																5				128
57																				0
58																2				34
59																3	2			90
60																				5
61	0																			6
62		0																		0
63			0																	20
64				0																8
65					0															0
66						0														25
67							0													0
68								0												3
69									0							3				12
70										0										3
71											0									0
72												0								0
73													0							0
74														0						4
75															0					0
76																0				28
77			3														0			12
78						5												0		5
79																			0	0
Total	1	0	8	4	0	11	5	1	16	15	3	0	0	3	5	25	5	0	15	1178

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-JOGIPURA

Mod: 3 Axle

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1	0													22													9		3			22							
2		0																																					
3			0																																				
4				0																											3	3							
5					0																											3							
6						0																																	
7							0																																
8								0																															
9									0				7	9				16															8							3
10										0																													
11											0																												
12												0																											
13													0																										
14														0																									
15															0																								
16																0																							
17																	0																						
18									8									0																					
19	2																		0																				
20																		3		0									3										
21																					0																		
22																						0						7		6	3		108							
23																							0																
24																								0															
25																									0														
26																										0													
27																											0												
28																						2						0											
29																													0										
30																														0									
31																															0								
32																																0							
33	8																					16			2								0							
34																																		0					
35																																			0				
36														3														3								0				
37																																					0		
38																																						0	
39																																							0
40																																								0
41																																								
42																						2																		
43	2																					6																		
44																																								
45																																								
46																						2																		
47																						2			4															
48																																								
49									2																															
50																																								
51																																								
52														3														3					5							
53																																	3							
54																												1					4							
55														1																			5							
56																												7			3		76		3					
57																																	3							
58														1														3	3			3	23							
59																	3	3										15			3		26		3					
60																												3			3		11							
61																																								
62																																								
63																												1		3										
64																																	3							
65																																								
66														7														11					3							1
67																																								
68																																								
69														1					1									1					1							3
70																															3		1						3	3
71																						4																		
72																																								
73																																								
74																																								
75																																								
76									4													2																		
77																																								
78																						4																		
79																																								
Total	12	0	0	0	0	0	0	0	14	0	0	0	7	47	0	0	3	22	1	0	0	40	0	0	6	0	0	64	6	12	13	7	307	0	7	0	0	0	3	11

O\D	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1	3		3						3																											3				68
2																																								0
3																																								0
4																																								6
5																																								3
6																																								0
7																																								0
8																																								0
9																																								42
10																																								0
11																																								0
12																																								0
13																2																								2
14																																								0
15																																								0
16																																								0
17																																								0
18																			2																					10
19																																								2
20								3																																10
21																																								0
22		3	5				6	6			3																							3		8				158
23																																								0
24																																								0
25																																								0
26																																		3						3
27																																								0
28														2				2	2				4							6										18
29																																								0
30																2			2																					4
31															2			4	2																					8
32																																								0
33														24	2	14		2	18											4										90
34																																								0
35																				2										4										6
36	3	1						3																																12
37																																								0
38																																								0
39																																								0
40																														6										6
41	0													2	4	12	4	8	2										2	8									4	46
42		0											2			2	2	10												4									4	26
43			0									6		2	4	16	4	12	20				2				2		2	4									8	90
44				0														4																						4
45					0									2				2																						4
46						0										4		4	2	2										4										18
47							0						2	8		2		10	16		2		4	2		4														56
48								0						2				6	2										4											14
49									0							10		4	4																					20
50										0			2																	2										4
51											0																													0
52							5					0																									1			19
53													0																					1						4
54			5			3	7		10	3				0																						7				41
55							6		3						0																					5				20
56	7	5	11				4	3	1	3						0																				3				127
57																	0																							3
58	16	1	11				4											0																3		1		1		71
59	3	3	19		3	5	20	5	9	9									0																2	9				138
60						3														0																				19
61			3						3												0																			6
62	3																					0																		3
63	4		3				1																0													1				13
64		1				3	1		6															0												2				17
65																									0															0
66	3	1	5							3																0														33
67			3																								0													3
68																												0												0
69		3	3			3	4		1																				0											23
70		7																												0						1				18
71																															0									4
72																																0								0
73																																	0							0
74												2	4			2							4											0						12
75																							4												0					4
76													2		2	8			8	4						6										0				36
77														6		4		4																			0			14
78													2																									0		6
79																																							0	0
Total	41	27	71	0	3	17	60	20	37	18	3	8	14	48	14	78	10	72	80	8	2	0	18	2	0	10	2	0	8	42	0	0	0	10	2	41	1	1	16	1363

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH
Travel Pattern of Vehicles at TP01-JOGIPURA

Mode MAV

O\D	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	0													25					4								
2		0																									
3			0																								
4				0																							
5					0																						
6						0																					
7							0																				
8								0																			
9									0																		
10										0																	
11											0																
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13													0														
14				5										0													
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16																0											
17																	0										
18																		0									
19	2																		0								
20														8						0							
21																					0						
22																						0					
23																							0				
24																								0			
25																			8						0		
26																										0	
27																											0
28	7																					9					
29																											
30																											
31									4													4					
32																						14					
33	9			4																		33			2		
34	4																					4					
35																											
36																		4									
37																											
38																											
39	7																									4	
40																											
41																											
42				7																		2			7		
43	2					2															4	19					
44																						2					
45																											
46																						5					
47	7																					16					
48																											
49				7																							
50																											
51																											
52																											
53																											
54																											
55														2													
56																											
57																											
58														2													
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61																											
62																											
63																											
64																											
65																											
66														2													
67																											
68																											
69														2					2								
70																											
71																											
72																											
73																											
74																											
75																											
76	4																					5					
77																											
78																						4					
79																											
Total	40	0	0	23	0	2	0	0	4	0	0	0	0	40	0	0	0	4	14	0	4	116	0	0	9	4	0

O\D	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
1	12			4		19							4		8							4					
2																											
3																											
4	4															4											
5																											
6			8														4										
7																											
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15																											
16																											
17																											
18																											
19																											
20	4					4																					
21						4																					
22	14	4				128									4	4				12	4	12					
23																											
24																											
25	4															8			4								
26			4																								
27																											
28	0																								4		9
29		0																									
30			0																								
31				0																							
32					0																					4	
33						0																			4	11	19
34							0																				
35								0																			
36	8					8			0						2												
37				4						0																	
38											0																
39												0															
40													0														
41														0													9
42															0											2	
43																0									4		2
44																	0										
45																		0									2
46																			0							4	4
47																				0						5	7
48																					0						5
49																						0					
50																							0			2	
51																								0			
52													4		4	4					8				0		
53		4																								0	
54	14					17										15				2		4	4				0
55						6									4	4											
56	6					195								10	8	19				14	4	6					
57																				4		4					
58	4			4		23	4						4	10	17	35			4	6	12	4					
59	6			4		29							12		8	41			8	33	8	12	4				
60	8					8						4			4	4			4		8	4					
61	4															12						12					
62																											
63	10		4			8								6						6							
64															2	4				6							
65																											
66	2					8							2		2	4											
67						4																					
68																4											
69	6					14							4	4	8	8				17		6					
70					4	2							4			4			4								
71																											
72																											
73																											
74																											
75																											
76																										2	
77																											2
78																										2	
79																											
Total	102	8	15	15	4	476	4	0	0	0	0	4	33	29	69	172	4	0	23	98	42	66	8	0	11	30	58

O\D	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	Grand Total
1																							4			83
2																										0
3																										0
4																							4			12
5																				4						4
6																										12
7																	4									4
8																										0
9																										0
10																										0
11																										0
12																										0
13		2																								2
14					4																					9
15																										0
16																										0
17																										0
18					2																					2
19		7																								9
20																										15
21																										4
22																						4				184
23																										0
24																										0
25																						4				27
26																										4
27																										0
28		4		2	9				4						4	2										51
29																										0
30		5			2																					7
31	2	16		4	2																				4	33
32		7						4								4										32
33	9	19	7	5	9				7							4									7	147
34																										7
35				4		5																			7	16
36																										21
37																										4
38																										0
39																										11
40			4		4										4	30									7	47
41	7	11	4	21	12										2	4									7	75
42	18	26	5	16	11				4							26									4	126
43	7	37		21	21				5			7	2		21	14									28	194
44																										2
45		4		2								4														11
46		14		4	2	2							4	4		4										44
47	7	19	4	5	46		2			2				4	7										23	152
48				5	2										4										4	19
49	4	2		11	4	4																				30
50		4			14										4	12										35
51																										0
52																										19
53																				2						6
54																				4	4	2				66
55	0																									15
56		0																								261
57			0																							8
58				0															4	4	4	6	4	2		151
59					0															2		12				176
60						0																				42
61							0																			27
62								0																		0
63									0																	33
64										0																12
65											0															0
66												0										2				21
67													0													4
68														0												4
69															0											69
70																0						2				19
71																	0									0
72																		0								0
73																			0							0
74		2																		0					4	5
75																					0					0
76	2	4			4																	0				19
77		4		7	2																		0			14
78																4										9
79																										0
Total	54	184	23	105	145	11	2	4	19	2	0	11	5	7	44	102	4	0	4	15	8	31	12	2	93	2412

APPENDIX 2.4
MODE WISE TOP 20 OD PAIRS

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

TOP 20 Origin Destination Pairs at TP01-PAGARA

Car

S.No.	Origin	Destination	% of total
1	Guna	Raghogarh/Daurana	12%
2	Pagara	Gwalior	6%
3	Guna	Bhopal	6%
4	Guna	Biaora	6%
5	Gwalior	Indore	5%
6	Guna	Indore	3%
7	Guna	Rest of Madhya Pradesh	3%
8	Gwalior	Ujjain	3%
9	Gwalior	Bhopal	3%
10	Guna	Binaganj	3%
11	Ruthiyai	Raghogarh/Daurana	3%
12	Guna	Kumbhraj/Fekara	2%
13	Gwalior	Rest of Madhya Pradesh	1%
14	Mumbai city	Rest of Uttar Pradesh	1%
15	Rest of Madhya Pradesh	Agra	1%
16	Shivpuri	Indore	1%
17	Ashoknagar/Chanderi/Mungaoli	Indore	1%
18	Raghogarh/Daurana	Ashoknagar/Chanderi/Mungaoli	1%
19	Bhopal	Delhi	1%
20	Rest of Madhya Pradesh	Delhi	1%
		Total	**64%**

Bus

S.No.	Origin	Destination	% of total
1	Guna	Rest of Madhya Pradesh	12%
2	Guna	Raghogarh/Daurana	7%
3	Guna	Kumbhraj/Fekara	6%
4	Gwalior	Indore	6%
5	Guna	Indore	6%
6	Guna	Biaora	5%
7	Guna	Maksundangarh	5%
8	Mumbai city	Lucknow/Kanpur	5%
9	Gwalior	Rest of Madhya Pradesh	4%
10	Ruthiyai	Raghogarh/Daurana	3%
11	Gwalior	Ujjain	3%
12	Gwalior	Mumbai city	3%
13	Rest of Gujarat	Rest of Haryana	3%
14	Guna	Awan/Palpur/Bairakhedi	2%
15	Guna	Binaganj	2%
16	Ruthiyai	Ahemdabad	2%
17	Biaora	Gwalior	2%
18	Gwalior	Bhopal	2%
19	Rest of Gujarat	Lucknow/Kanpur	2%
20	Rest of Gujarat	Rest of Uttar Pradesh	2%
		Total	**81%**

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

TOP 20 Origin Destination Pairs at TP01-PAGARA

LCV

S.No.	Origin	Destination	% of total
1	Guna	Raghogarh/Daurana	25%
2	Nasik	Agra	6%
3	Indore	Delhi	5%
4	Gwalior	Indore	4%
5	Raghogarh/Daurana	Gwalior	3%
6	Bhopal	Delhi	3%
7	Indore	Lucknow/Kanpur	2%
8	Mumbai city	Delhi	2%
9	Mumbai city	Bihar	2%
10	Guna	Binaganj	2%
11	Guna	Indore	1%
12	Guna	Biaora	1%
13	Raghogarh/Daurana	Shivpuri	1%
14	Gwalior	Rest of Gujarat	1%
15	Delhi	Karnataka	1%
16	Guna	Kumbhraj/Fekara	1%
17	Guna	Bhopal	1%
18	Raghogarh/Daurana	Sheopur	1%
19	Ashoknagar/Chanderi/Mungaoli	Indore	1%
20	Ruthiyai	Pagara	1%
		Total	**63%**

2 Axle

S.No.	Origin	Destination	% of total
1	Indore	Lucknow/Kanpur	9%
2	Gwalior	Indore	6%
3	Indore	Delhi	6%
4	Guna	Indore	3%
5	Pune	Delhi	3%
6	Rest of Gujarat	Lucknow/Kanpur	2%
7	Gwalior	Bhopal	2%
8	Mumbai city	Lucknow/Kanpur	2%
9	Mumbai city	Delhi	2%
10	Raghogarh/Daurana	Shivpuri	2%
11	Raghogarh/Daurana	Gwalior	2%
12	Rest of Madhya Pradesh	Delhi	1%
13	Nasik	Agra	1%
14	Indore	Agra	1%
15	Bhopal	Delhi	1%
16	Delhi	Karnataka	1%
17	Gwalior	Mumbai city	1%
18	Rest of Madhya Pradesh	Agra	1%
19	Ahemdabad	Lucknow/Kanpur	1%
20	Ahemdabad	Delhi	1%
		Total	**48%**

3 Axle

S.No.	Origin	Destination	% of total
1	Indore	Lucknow/Kanpur	9%
2	Indore	Delhi	7%
3	Gwalior	Indore	6%
4	Mumbai city	Delhi	3%
5	Guna	Indore	3%
6	Mumbai city	Lucknow/Kanpur	3%
7	Nasik	Agra	2%
8	Indore	Rest of Uttar Pradesh	2%
9	Mumbai city	Rest of Uttar Pradesh	2%
10	Pune	Delhi	2%
11	Gwalior	Bhopal	2%
12	Delhi	Karnataka	1%
13	Mumbai city	Agra	1%
14	Raghogarh/Daurana	Gwalior	1%
15	Bhopal	Delhi	1%
16	Rest of Madhya Pradesh	Delhi	1%
17	Rest of Gujarat	Rest of Uttar Pradesh	1%
18	Indore	Agra	1%
19	Rest of Madhya Pradesh	Agra	1%
20	Pune	Lucknow/Kanpur	1%
		Total	**49%**

MAV

S.No.	Origin	Destination	% of total
1	Indore	Lucknow/Kanpur	9%
2	Mumbai city	Lucknow/Kanpur	4%
3	Gwalior	Indore	3%
4	Mumbai city	Delhi	3%
5	JNPT/Mumbai port	Lucknow/Kanpur	3%
6	Indore	Delhi	2%
7	Morena	Indore	2%
8	Bhopal	Delhi	2%
9	Rest of Madhya Pradesh	Lucknow/Kanpur	2%
10	Nasik	Agra	2%
11	Rest of Gujarat	Rest of Uttar Pradesh	2%
12	Gwalior	Rest of Madhya Pradesh	1%
13	Pune	Delhi	1%
14	Rest of Gujarat	Lucknow/Kanpur	1%
15	Mumbai city	Assam /North eastern states	1%
16	Rest of Gujarat	Delhi	1%
17	Delhi	Karnataka	1%
18	Shivpuri	Indore	1%
19	Ahemdabad	West Bengal	1%
20	Rest of Gujarat	Jhansi	1%
		Total	**44%**

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH			
TOP 20 Origin Destination Pairs at TP02-JOGIPURA			
Car			
S.No.	**Origin**	**Destination**	**% of total**
1	Guna	Bhopal	11%
2	Gwalior	Indore	11%
3	Guna	Indore	9%
4	Guna	Biaora	8%
5	Gwalior	Bhopal	4%
6	Indore	Agra	3%
7	Guna	Ujjain	3%
8	Raghogarh/Daurana	Rest of Madhya Pradesh	2%
9	Shivpuri	Indore	2%
10	Guna	Pachore/Sarangpur/Narsinghgarh	2%
11	Biaora	Gwalior	2%
12	Guna	Rajgarh/Jirapur	2%
13	Binaganj	Biaora	2%
14	Ujjain	Lucknow/Kanpur	2%
15	Binaganj	Bhopal	2%
16	Raghogarh/Daurana	Bhopal	2%
17	Guna	Rest of Madhya Pradesh	1%
18	Rest of Madhya Pradesh	Aligarh/Moradabad	1%
19	Biaora	Aligarh/Moradabad	1%
20	Bhopal	Delhi	1%
		Total	**68%**

Bus			
S.No.	**Origin**	**Destination**	**% of total**
1	Guna	Indore	18%
2	Guna	Bhopal	14%
3	Binaganj	Biaora	9%
4	Ashoknagar/Chanderi/Mungaoli	Indore	6%
5	Bhopal	Agra	4%
6	Gwalior	Indore	4%
7	Indore	Delhi	4%
8	Mumbai city	Lucknow/Kanpur	4%
9	Guna	Rajgarh/Jirapur	3%
10	Ashoknagar/Chanderi/Mungaoli	Bhopal	2%
11	Ujjain	Lucknow/Kanpur	2%
12	Vadodara/Surat	Lucknow/Kanpur	2%
13	Nasik	Jhansi	2%
14	Guna	Biaora	2%
15	Guna	Ujjain	2%
16	Guna	Vadodara/Surat	2%
17	Guna	Rest of Gujarat	1%
18	Pagara	Bhopal	1%
19	Raghogarh/Daurana	Bhopal	1%
20	Gwalior	Bhopal	1%
		Total	**83%**

TRAFFIC STUDY FOR GUNA-BIAORA SECTION OF NH-3 IN THE STATE OF MADHYA PRADESH

TOP 20 Origin Destination Pairs at TP02-JOGIPURA

LCV

S.No.	Origin	Destination	% of total
1	Morena	Rest of Madhya Pradesh	15%
2	Gwalior	Indore	10%
3	Guna	Biaora	4%
4	Indore	Delhi	4%
5	Nagpur/Warda/Amravati	Delhi	3%
6	Indore	Lucknow/Kanpur	3%
7	Binaganj	Biaora	2%
8	Guna	Indore	2%
9	Bhopal	Delhi	2%
10	Gwalior	Bhopal	2%
11	Indore	Rest of Uttar Pradesh	2%
12	Guna	Pachore/Sarangpur/Narsinghgarh	2%
13	Ashoknagar/Chanderi/Mungaoli	Indore	2%
14	Mumbai city	Lucknow/Kanpur	1%
15	Delhi	Karnataka	1%
16	Guna	Bhopal	1%
17	Vadodara/Surat	Delhi	1%
18	Pune	Rest of Uttar Pradesh	1%
19	Guna	Rajgarh/Jirapur	1%
20	Gwalior	Vadodara/Surat	1%
		Total	**61%**

2 Axle

S.No.	Origin	Destination	% of total
1	Gwalior	Indore	9%
2	Indore	Lucknow/Kanpur	7%
3	Binaganj	Biaora	4%
4	Indore	Delhi	4%
5	Guna	Indore	3%
6	Pune	Delhi	3%
7	Bhopal	Delhi	3%
8	Gwalior	Bhopal	2%
9	Pune	Lucknow/Kanpur	2%
10	Guna	Bhopal	2%
11	Mumbai city	Delhi	1%
12	Nagpur/Warda/Amravati	Delhi	1%
13	Guna	Biaora	1%
14	Dewas	Delhi	1%
15	Delhi	Karnataka	1%
16	Pune	Rest of Uttar Pradesh	1%
17	Ashoknagar/Chanderi/Mungaoli	Indore	1%
18	Indore	Rest of Uttar Pradesh	1%
19	Gwalior	Ujjain	1%
20	Shivpuri	Indore	1%
		Total	**52%**

3 Axle

S.No.	Origin	Destination	% of total
1	Gwalior	Indore	9%
2	Indore	Lucknow/Kanpur	7%
3	Indore	Delhi	3%
4	Mumbai city	Delhi	3%
5	Pune	Delhi	3%
6	Guna	Indore	2%
7	Indore	Agra	2%
8	Mumbai city	Lucknow/Kanpur	2%
9	Indore	Rest of Uttar Pradesh	2%
10	Binaganj	Rajgarh/Jirapur	2%
11	Vadodara/Surat	Rest of Uttar Pradesh	2%
12	Mumbai city	Rest of Uttar Pradesh	2%
13	Guna	Biaora	2%
14	Vadodara/Surat	Lucknow/Kanpur	1%
15	Delhi	Karnataka	1%
16	Bhopal	Delhi	1%
17	Pune	Agra	1%
18	Pune	Rest of Uttar Pradesh	1%
19	Nagpur/Warda/Amravati	Delhi	1%
20	Gwalior	Mumbai city	1%
		Total	**47%**

MAV

S.No.	Origin	Destination	% of total
1	Indore	Lucknow/Kanpur	9%
2	Gwalior	Indore	7%
3	Pune	Delhi	3%
4	Mumbai city	Delhi	3%
5	Mumbai city	Lucknow/Kanpur	2%
6	Mumbai city	Rest of Uttar Pradesh	2%
7	Indore	Delhi	2%
8	Indore	Agra	2%
9	Rest of Gujarat	Lucknow/Kanpur	1%
10	Ahemdabad	West Bengal	1%
11	Rest of Gujarat	Rest of Uttar Pradesh	1%
12	Pune	Lucknow/Kanpur	1%
13	Vadodara/Surat	Rest of Uttar Pradesh	1%
14	Mumbai city	Bihar	1%
15	Indore	Rest of Uttar Pradesh	1%
16	Guna	Indore	1%
17	Mumbai city	Assam /North eastern states	1%
18	Gwalior	Pune	1%
19	Rest of Gujarat	West Bengal	1%
20	Guna	Biaora	1%
		Total	**44%**