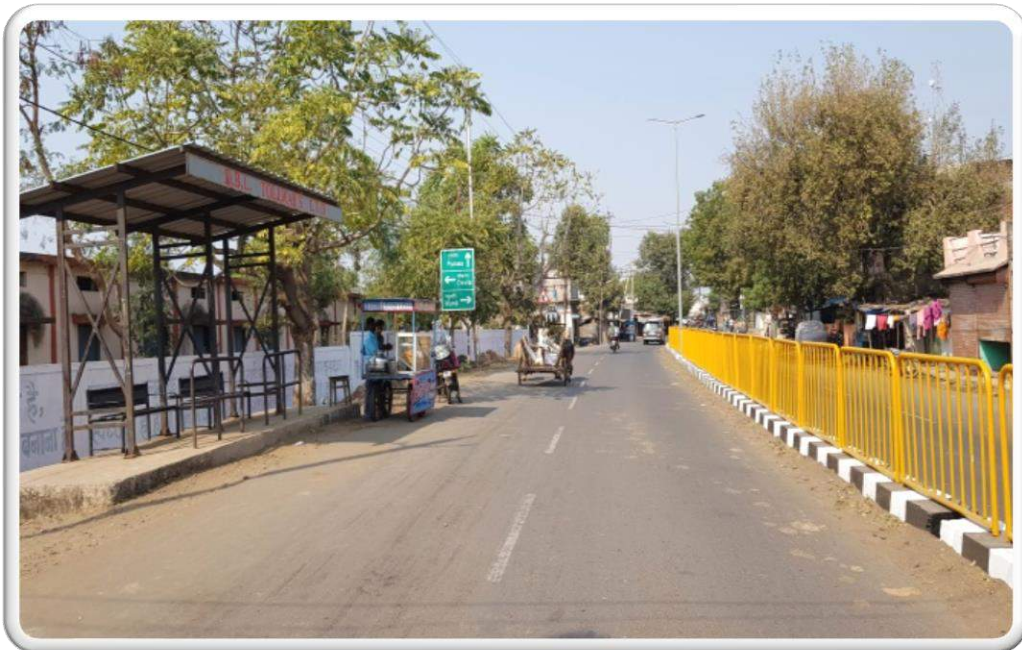




SHREM FINANCIAL PRIVATE LIMITED

**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 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.

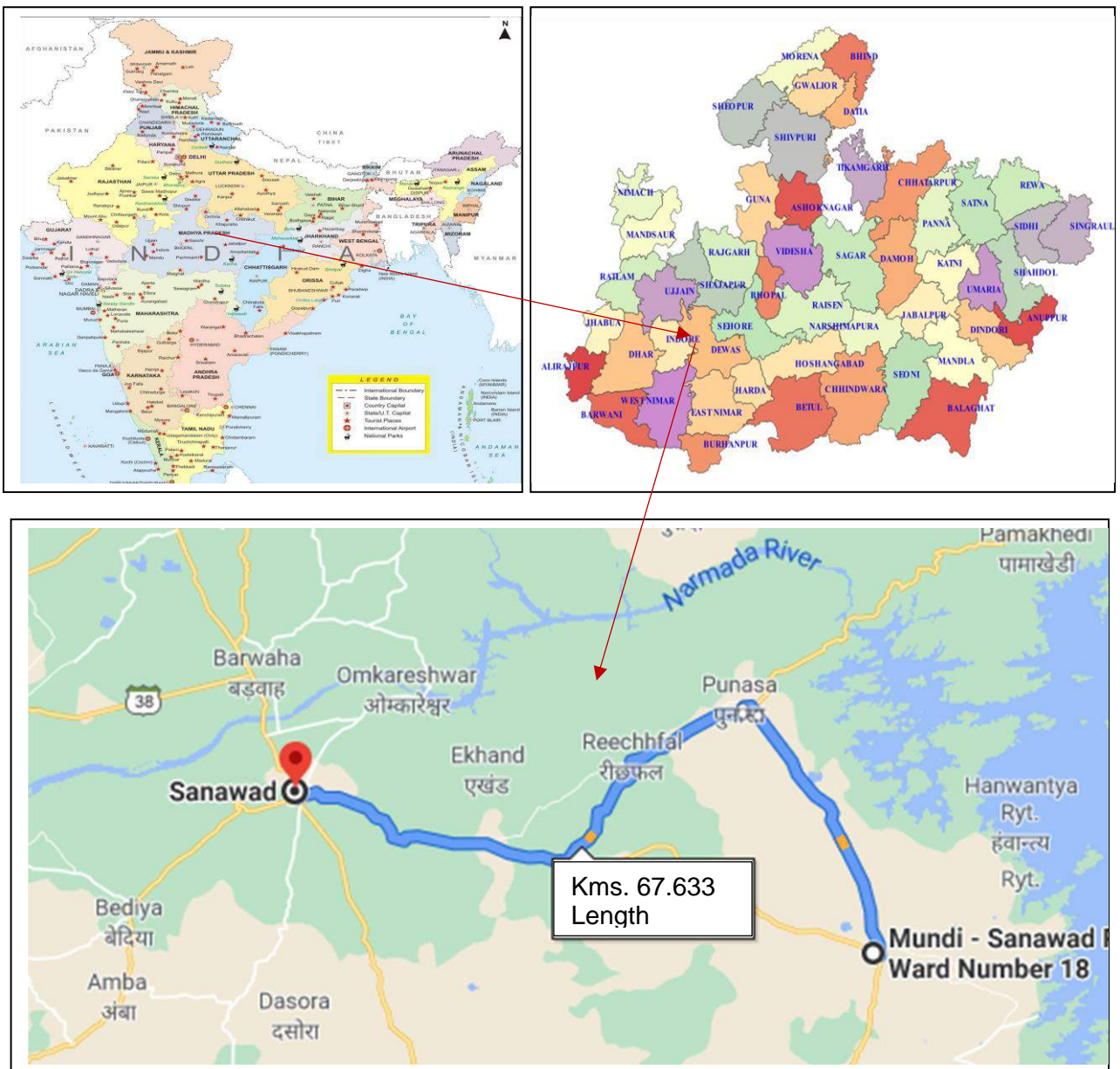


Figure 1.1: Project Location Map

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 Bys	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.

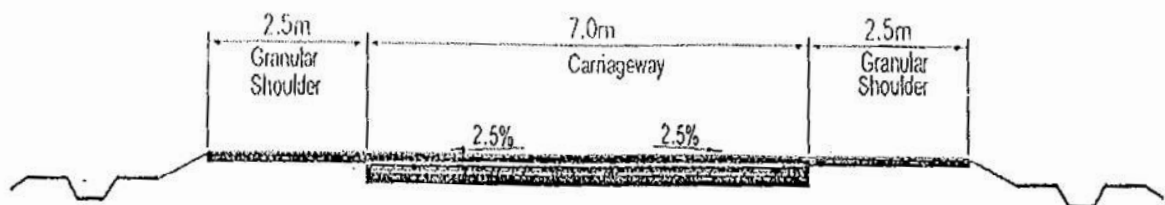


Figure 2.1: (TCS.2.1 of Schedule D)

2-Lane Carriageway with hard Shoulders without service road (Open Country-Plain/rolling terrain)

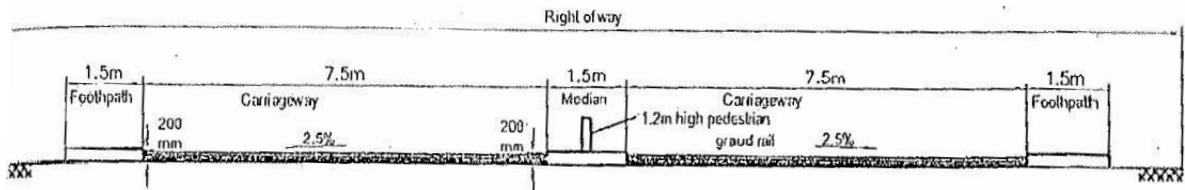


Figure 2.2: (TCS.2.2 of Schedule D)
 4-Lane divided Carriageway with footpath (Built-up area)

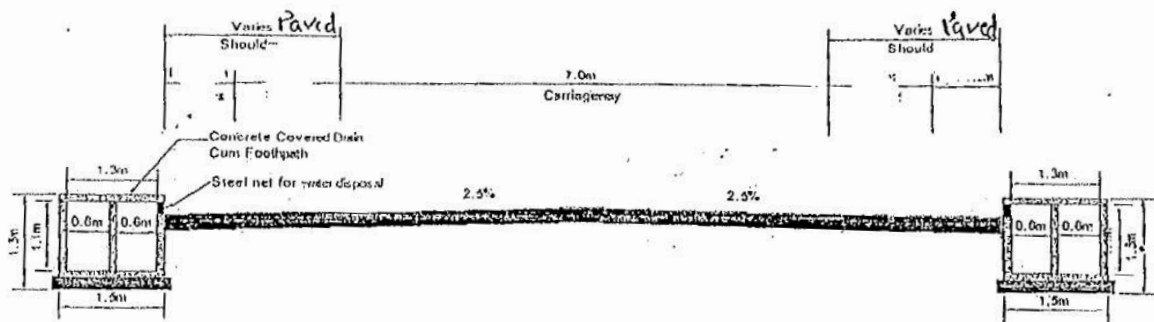


Figure 2.3: (TCS.2.3 of Schedule D)
 2-Lane Carriageway with Paved Shoulder (Built-up area)

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 2.3 of 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 2.3 of 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

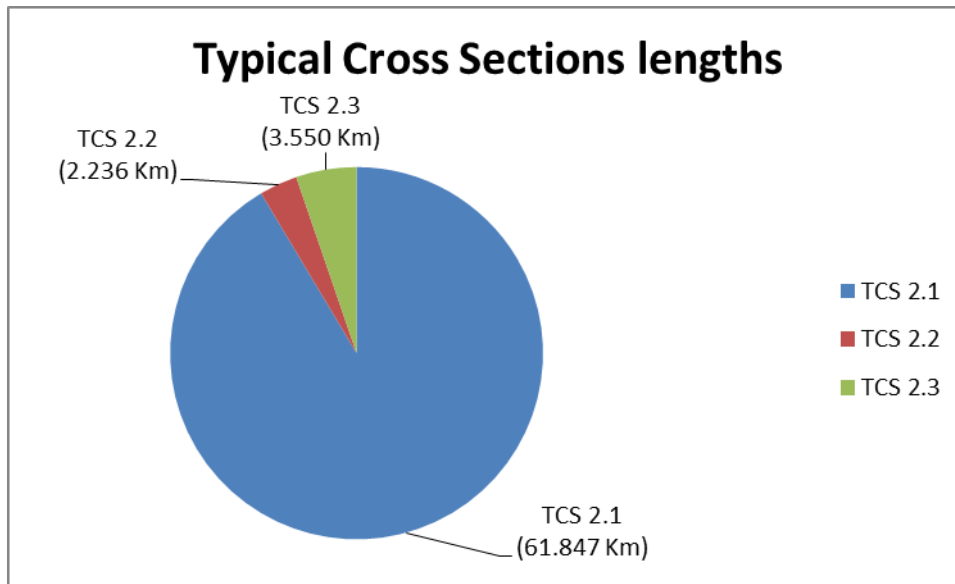


Figure 2.4: Pictorial Diagram of TCS Lengths

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 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	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	S. No	Chainage(Km)	Side	Location
20	18+300	RHS	Ajaniya	48	55+800	RHS	Sulgaon
21	19+650	LHS	Sarliya	49	57+200	LHS	Gosti
22	19+750	RHS	Sarliya	50	57+300	RHS	Gosti
23	20+900	LHS	Udaypur	51	58+490	LHS	Khangwad
24	21+000	RHS	Udaypur	52	58+590	RHS	Khangwad
25	24+900	LHS	Navalvil	53	62+400	LHS	Omkareshwar
26	25+000	RHS	Navalvil	54	62+500	RHS	Omkareshwar
27	28+300	LHS	Bikri	55	63+550	LHS	Sanawad
28	28+400	RHS	Bikri	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 (Major-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 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 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 (CRRRI) 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 compiled 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	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

**MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED**
(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (0) 0755-2766196, 205, 213, 216 (EPBX) Fax : 91-755-2572648
Website : www.mprdc.nic.in

No. MPRDC/BOT/U-P/2010/ 8271
Bhopal, dated 19 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

(Neeraj Vijay)
Dy. General Manager

Encl: Duplicate copy of LoA



Connecting People Through quality infrastructure

Annexure 7: Provisional Completion Certificate



TL Office : 302, Shree Complex, Regal Square, Indore (M.P.), Tel/Fax : 0731-400147
Mob : 94251 81233, E-mail : vaidya.mprob@gmail.com

H. Off. : 31, Jindaparth Tower, 6/1 M.G. Road, Indore (M.P.), Tel/Fax : 0731-4255850,
Mob : 98242-81850, E-mail : Vaidyamk@vsnl.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

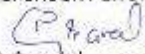
1. I Team Leader Vaidya Organisation Indore, acting as Independent Engineer, under and in accordance with the concession agreement dated 05.12.2011 (The "Agreement") for development of the Mundi - Punasa - Sulgaon - Sanawad Road section (km 0+000 to 6+51.7) of MDR the "Project Highway" on build, operate 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 at 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 MPREC 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 DELIVERED
For and on behalf of
CONCESSIONAIRE by:


A.M. Qureshi

M/s DBL Mundi – Sanawad Tollways Ltd

SIGNED, SEALED AND DELIVERED
For and on behalf of
INDEPENDENT ENGINEER by:

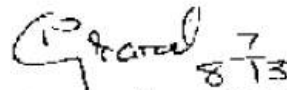

P. C. Agrawal
Team Leader
Indore Package
15/5/13

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.


SIGNED, SEALED **Team Leader**
DELIVERED **Vaidya Organisation, Consultants**
For and on behalf of **DBL Mundi - Sanawad Tollways Ltd, Bhopal**
INDEPENDENT ENGINEER by:

Poonam Chand Agrawal
Team Leader
Indore Package

Annexure 9: Insurance

पॉलिसी अनुसूची Policy Schedule - Civil Engineering Completed Risk.

Policy Number:
321300441910001988
उत्पत्त्याचा स्रोत Business Source: 910000
उत्पत्त्याचा कोड Office Code: 321300
उत्पत्त्याचा पत्ता Office Address: BHOPAL
 DIVISION II D-8, Indrapuri, D.H.C.L. Bhopal,
 Madhya Pradesh - 462022.
State Code: 22, Madhya Pradesh
GSTIN: 23AAACM961E126
Contact Number: 755 2582822
eMail: 321300@nic.co.in
Mobile Number:
विक्रीचा चॅनेल Sales Channel Code:
 910355000000
नाम Name: Aspire Insurance Brokers Pvt
 Ltd - HO Contact Number: 8291914610
सह विक्रीचा कोड Co Broker Code:
Customer Care Toll Free Number:
 1800 345 0330
email:customer.support@nic.co.in

ग्राहकाचे नाव Customer Name: DBL MUNDI SANAWAD TOLLWAYS LTD
ग्राहकाचे ID Customer ID: 9701359577
पिन IPAN: RAECD03850
पत्ता Address: PLOT NO -5, INS DE COVID NARAYAN SINGH GATE CHHUNA BHATTI KOLAR ROAD BHOPAL, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 452016.
ई-मेल E-Mail: 8015155512

पॉलिसी 27/03/2020 रोजी 00:00 ते 26/03/2021 रोजी प्रभावी राहणार आहे। Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

व्यवहारीक Premium	₹ 12,17,721.00	व्याज नोट संख्या आणि तारीख Cover Note Number and Date	NA
CGST	₹ 1,29,595.00		
SGST/UTGST	₹ 1,29,595.00		
IGST	₹ 0.00		
सेवा कर उल्हास Karula Flood Cess	₹ 0.00	प्रस्तावना संख्या आणि तारीख Proposal Number and Date	8000200327056873 Dt: 27/03/2020
व्याजविराही कर (TDS)	₹ 0.00		
व्यवहारीक छेदना संयोजन इच्छी	₹ 0.00	रसीद संख्या आणि तारीख Receipt Number and Date	32130081101C007666 Dt: 27/03/2020
व्यवहारीक छेदना संयोजन इच्छी	₹ 0.00	पहिली पॉलिसी संख्या आणि समाप्ती तारीख Previous Policy Number and Expiry Date	NA
एकूण Total Amount	₹ 14,36,911.00		

(Rupees Fourteen Lakh Thirty Six Thousand Nine Hundred Eleven Only)
 Location: Mundi-Punasa-Sulgaon-Sanawad Road on BOT (Toll + Annuity) basis, Madhya Pradesh Near - East, Khandwa - V.P, 450001

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Toll Bulking & Boods, TWS, HTMS, Office & IT Equipment, Electronic	Zone IV	1,12,71,00,000.00	1,00,000.00
2	Roads	Equipment, Road Furniture, Fixtures, Electrical Poles, Lighting & Fixings, Signboard & Safety Barrier	Zone IV	8,05,00,000.00	1,00,000.00

सर्व संश्लेषणें एव पॉलिसी / Clauses, Endorsements and Warranties Applicable: Termination Damage, Exclusion Warranty, Agreed Risk 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 Sl of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) Sl 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 & River side structures & Toll plazas & Bridges & Flyovers of Land.
3. No Coverage for (Road) Transportation Tunnels
4. No Coverage for Marine Vessels Impact Damage.
5. Each 72 hour period will be treated as One occurrence/event for STP & EQ for application of Excess.

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Page no: 1



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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 Issue Office Name : CBU Vadodara (GSTIN: 24AAECD0385Q1ZE)
(GSTIN: 23AAECD0385Q1ZE)
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
BHOPAL 462016

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
Tel/Fax/Email : INDIA,MOB NO 9898295111 PHONE NO 0265-
2252274,BARODA,GUJARAT,396007
: 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.
Correction in insured Name:
Correct name-DBL Mundi Sanawad Tollways Ltd
Subject otherwise to the terms, conditions, exceptions, exclusions and limitations of the policy.

SCHEDULE OF PREMIUM

Cover Description	Original Sum Insured	Endorsement Sum Insured	Revised Sum Insured	Endorsement Premium
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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



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 : IRDAN125P0017V03201112 | RDAI Reg No.146 | CIN : U06030MH2007PLC177117

Registered & Corporate Office:
1st Floor, HDFC House, 195 - 199 Backbay Reclamation,
H. T. Panik Marg, Churchgate, Mumbai - 400 020

Customer Service Address:
D-301, 3rd Floor, Eastern Business District (Magnet Mall),
LBS Marg, Shandup (West), Mumbai - 400 076

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
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	From Ch	To Ch	Length(Km)	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
Mundi	0+000	0+875	0.875	<p>1. Mundi town Ch. 0+000 to ch. 0+875-</p> <p>A. From ch. 0+000 to ch. 0+875 carriageway is 2x7.5 = 15mtr. (no change)</p> <p>B. Median constructed is 0.5mtr wide in place of 1.5mtr proposed.</p> <p>C. Footpath 1.5mtr on both sides is not constructed. Actual 0.8mtr wide drains with covers are constructed on both sides.</p>	<p>1. For four lane-divided carriageway with footpath the work was to be executed as per figure 2.2 of schedule.</p> <p>2. The work executed lesser than provision of CA.</p>	<p>Committee agreed to consider change of scope for difference of provision in Schedule-B and actual work done at site. Concessionaire has to carry out drain in built up area as per clause 3.7 of Schedule-B to concession agreement.</p>
Sulgaon	54+065	54+800	0.735	<p>2. Sulgaon village ch. 53+760 to ch. 54+495-</p> <p>Approved section is executed only median is constructed 0.5mtr wide in place of 1.5mtr proposed.</p>	<p>A. Mundi town portion from ch. 0+000 to ch.0+875</p> <p>i. median constructed 0.5mtr wide in place of 1.5mtr required (lesser work)</p> <p>ii. Footpath constructed 0.8mtr in place of 1.5mtr on both side lesser work.</p> <p>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</p>	
Sanawad	63+150	63+776	0.626	<p>3. Sanawad town ch. 62+350 to</p>		
	Total		2.236 km			





	<p>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.</p>	<p>3.7 drainage 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 is 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</p>	
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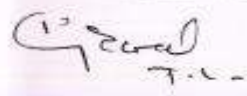
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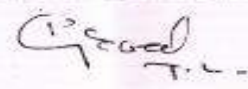
2.	Flexible Pavement construction in Built up area with Paved Shoulder Length= 2935 m				Flexible Pavement construction in Built up area with Paved Shoulder				<p>1. The work was to be executed as per typical cross section fig 2.3 schedule D of the concession agreement width to be paved including drains was 15/20mtr.</p> <p>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</p>	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+400	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	<p>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.</p> <p>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.</p>
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					<p>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.</p>				

4	<p>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.</p>	<p>The provisions executed in parts with variable sections. Executed sections are on record.</p>	<p>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.</p> <p>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.</p>	<p>Committee agreed to the negative change of scope as recommended by the IE.</p>
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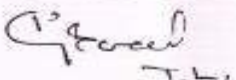
Agreed T.L.

**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 <u>no change of scope</u> is required.

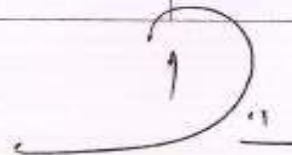
				recommended.	
3	2+566 (Existing Chainage) (HPC) __ 2x0.9	2+715 (Proposed Chainage) Retained (HPC) __ 2x0.90	2+721 (P & P Chainage) Reconstruction (BC) __ 1x5.0 Existing HPC dismantled and BC constructed	The existing HPC 2x0.9 mtr was found at site which was proposed to retain as per Schedule-B. There 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 <u>net positive</u> change of scope.	Committee agreed to consider <u>net positive</u> 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 <u>no change of scope</u> 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 <u>net positive</u> 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.

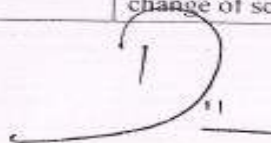
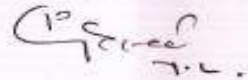
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 Road
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9	30+105 (Existing Chainage) (SC)_ 1x3.60	29+557 (Proposed Chainage) Reconstruction (SC)_1x4.4	29+166 (P & P Chainage) Retained (SC)_1x3.6	Already consider as per Sl.no. 3 above. No change 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


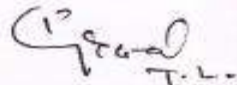


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	(HPC) __ 1x0.60	(HPC) __ 1x1.2			is required.
14	38+950 (Existing chainage) HPC __ 1x0.60	38+418 (Proposed chainage) Reconstruction (HPC) __ 1x1.2	37+999 (P&P Chainage) Retained (HPC) __ 1x0.6	The existing canal was crossing with HPC 1x0.6 mtr which 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 <u>negative</u> 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	<ol style="list-style-type: none"> The superstructure of the retained bridge was replaced which is on record. The design calculation and load testing is on record. The extra cost for replacement of super structure as prepared by concessionaire is Rs. 148.423 lacs. This requires thorough checking. The extra scope of work-required approval of competent vide article 16 clause 16.2 of C.A. 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.


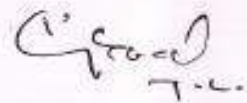



20	48+935 (Existing Chainage) (HPC) __ 2x0.6	48+351 (Proposed Chainage) Reconstruction (HPC) __ 1x1.2	47+943 (P & P Chainage) Re construction (HPC) __ 2x1.2	Existing HPC 2x0.6 mtr was in poor condition which was proposed to reconstruction 1x1.2 mtr HPC. It was found inadequate opening. Hence, it is recommended 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 reconstruction as HPC 2 x 1.2 m which was in adequate as per hydraulic	Committee agreed to consider net
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		(HPC) 2x1.2	3x1.2	calculation. 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 reconstrtuction minor bridge 2 x 5 mtr was proposed which is recommended 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 reconstruction minor bridge 1 x 8 mtr was proposed which is recommended to consider as net positive change of scope. due approval of advisory committee.	Committee agreed to consider net positive change of scope.

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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.
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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 Pathwal) GM (Finance) MPRDC ,Bhopal	(Narendra Kumar) Chief Engineer MPRDC Bhopal	(A.S. Ch) Technical MPRDC

This is only Attence in meeting, NOT A ground in Negative change