



SHREM FINANCIAL PRIVATE LIMITED

**Development of Bankhlfata-Dogawa-Via-Borawa-Savardevala,
Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge
Approach Road, Mundi-Devala-Khutala-Atoot NVDA (3 MDR) Road in
the State of Madhya Pradesh on DBFOT (Annuity) Basis**

TECHNICAL DUE DILIGENCE REPORT



FEBRUARY, 2021

SUBMITTED BY



RUKY PROJECTS PRIVATE LIMITED

Hyderabad – 500 072

www.rukyprojects.com



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Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge
Approach Road, Mundi-Devala-Khutala-Atoot NVDA (3 MDR) Road in
the State of Madhya Pradesh on DBFOT (Annuity) Basis**

This document has been issued and amended as follows:

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RU-DD Report- Bankhlaftata-Dogawa	01	February 2021	Technical Due Diligence Report

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CHAPTER 1. INTRODUCTION

1.1 General

DBL BANKHALFATA – DOGAWA TOLL WAYS LTD (BDTL) (herein after referred to as the “Concessionaire”) had augmented the existing road of “**Bankhlfata – Dogwa – Borawa - Savardevala - Punasa-Mundi Singhaji Therma Power Plant & Singhaji Bridge Approach Road, Mundi - Devala – Khutala - Attot**” section of MDR with a length of 65.40 Kms. in the State of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the “MPRDCL”) on 28th January,2013 on Design, Build, Finance, Operate and Transfer (DBFOT) on Annuity Basis.

Project Road consists of three stretches, which includes total length of 65.40 Kms. the stretches are provided in the following table.

Table 1.1: Project Data.

Section	Length (Kms.)
Bankhal-Dogawan-Borawan-Savardevala	23.600
Beed - Mundi Road to Singaji thermal Power Plant& Mandla Village - Singaji Bridge	13.300
Mundi – DevlaKutla - Atoot	28.400
Total Length	65.400

SHREM ROADWAYS PVT. LTD. (SRPL) acquired DBL Bankhlfata – Dogawa Tollways Ltd (BDTL) vide agreement dated 26 March 2018.

SHREM FINANCIAL PVT. LTD. appointed M/s RUKY Projects Pvt. Ltd. as consultants for Detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential.

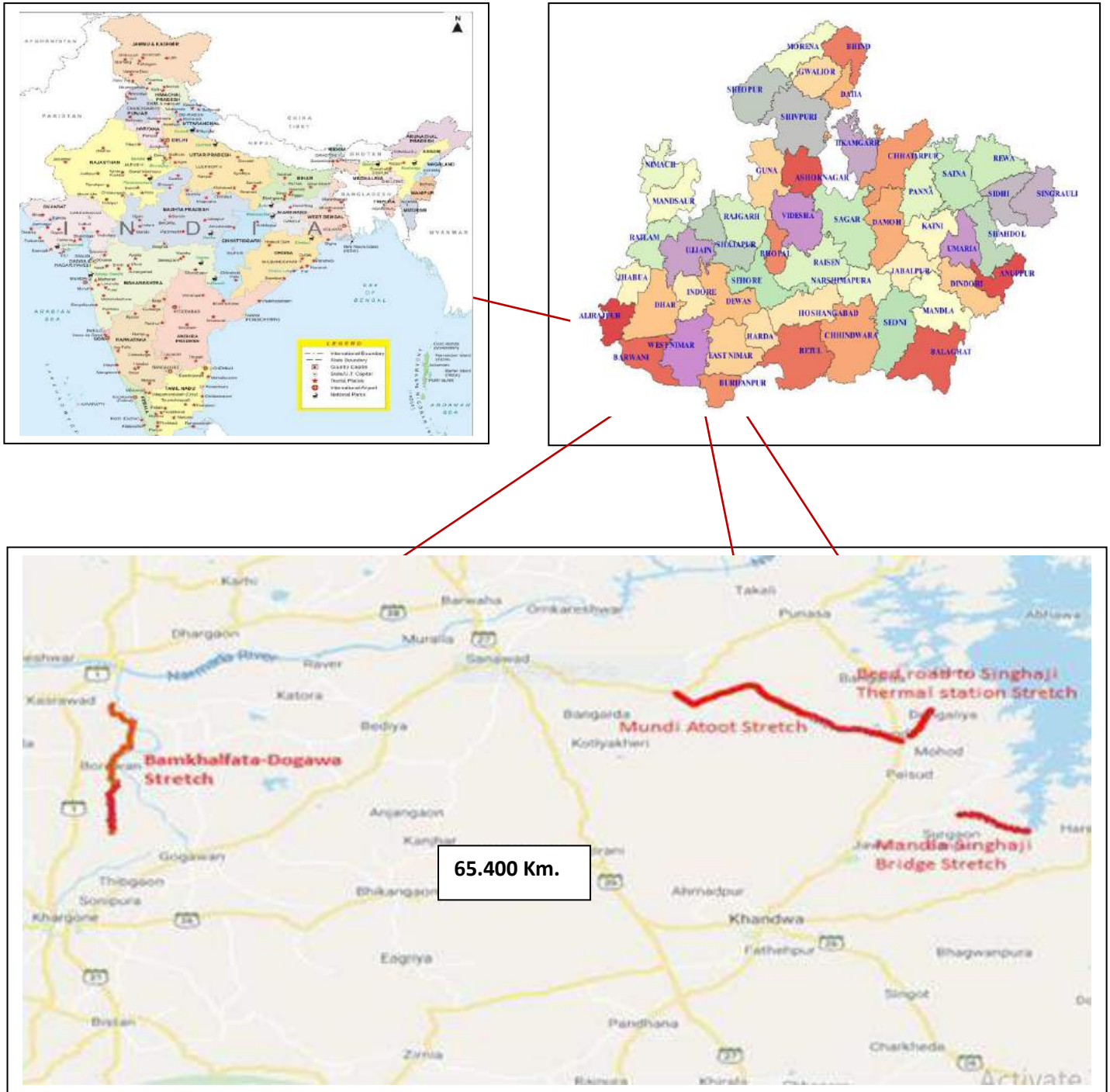


Figure 1.1: Project Location Map

Project Data:

The details of the Project are listed in the following table.

Table 1.2: Project Data.

S. No.	Particulars	Details
1	Name of the project	Development of Bankhlaftata-Dogawa-Via-Borawa-Savardevala, Punasa-Kundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA(3 MDR) in the State of Madhya Pradesh on DBFOT (Annuity) Basis
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL Bankhlaftata – Dogawa Toll ways Ltd (BDTL)
5	Name of the EPC Contractor	M/s Dilip Buildcon Limited
6	Design Length as per Schedule B of CA	65.4 Kms.
7	Date of LOA	13.12.2012
8	Date of Agreement	28.01.2013
9	EPC Cost	116.53 Cr.
10	Nature of contract	DBFOT (Annuity)
11	Toll collected by	MPRDCL
12	Concession Period	15 years from the Appointed date
13	Appointed date	14.08.2013
14	Concession end date	13.08.2028
15	Construction Period	730 days from the Appointed date
16	Scheduled Completion Date	13.08.2015
17	Date of issuance of Provisional Certificate (Commercial Operation Date)	31.03.2014
18	Date of issuance of Completion Certificate	01.07.2014
19	Annuity Amount (every six months)	Rs 9.9 Cr
20	Total Number of Annuities payable	29 Nos.
21	First Annuity Payment Date	18.10.2014
22	Total Number of Annuity Paid	13 Nos.

1.2 Scope of Consultancy Services

The scope of work includes providing Technical Due Diligence of the project road and providing estimate of the anticipated maintenance works. Scope of the work as defined in the Consultancy work order is listed below:

- Review of various contractual documents,

- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features as per schedule B and Schedule C of CA including Change of scope are given in the following table.

Table 2.1: Salient Features

S.No.	Particulars	As per CA	As per COS*	As per Site
1	Total Length of Project	65.400 Kms.		65.400 Kms.
2	Total Length of 2 Lane(Flexible)	61.106 Kms.	-0.398 Kms.	60.708 Kms.
3	Total Length of 2 Lane(Rigid)	4.292 Kms.	0.398 Kms.	4.690 Kms.
4	Toll Plaza	Nil		Nil
5	Bus Bays / Bus Shelters	48 Nos.		48 Nos.
6	Truck Lay Bays	Nil		Nil
7	Major Junction	7 Nos.		7 Nos.
8	Minor Junctions	25 Nos.		25 Nos.
9	ROB	Nil		Nil
10	Major Bridges	3 Nos.		3 Nos.
11	Minor Bridges	11 Nos.		13* Nos.
12	Pipe Culverts	102 Nos.	-6	96 Nos.
13	Slab/Box Culverts	12 Nos.	0	12 Nos.

* As per site requirement 2 Nos of Minor Bridges are constructed

2.2 Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the Typical Cross Section schedule during the construction as given below.

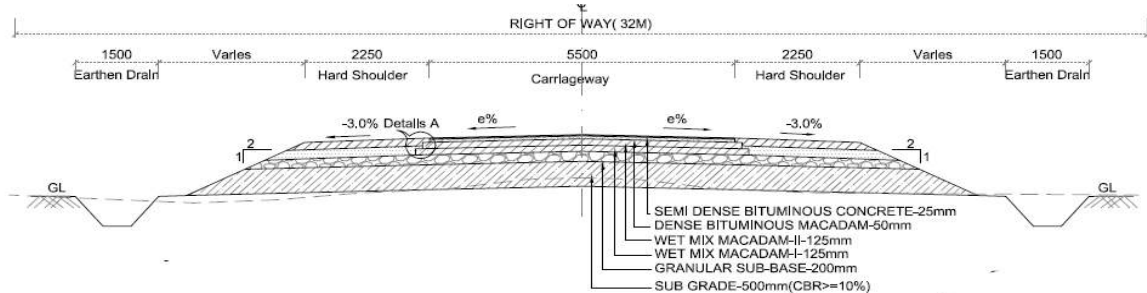


Figure 2.1: TCS 2.1 of Schedule D (Open Country-Plain/Rolling Terrain)

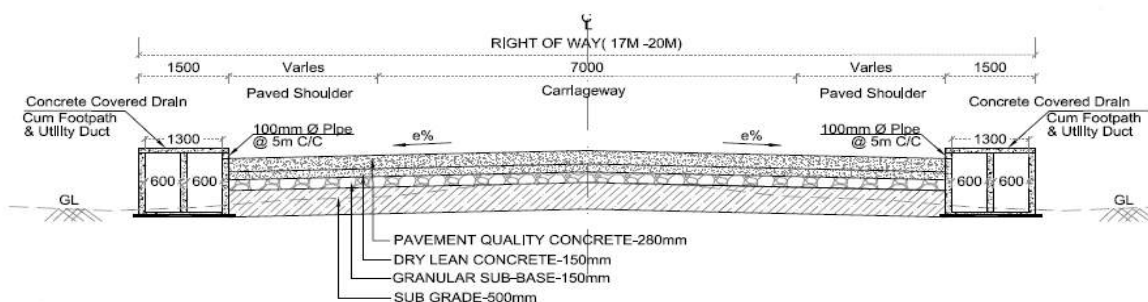


Figure 2.2: TCS 2.3 of Schedule D (Built-Up Area) 2 Lane Carriageway with Paved Shoulder

TCS Schedule is provided below.

Table 2.2: TCS Schedule

S. No.	From (Km.)	To (Km.)	Description	Length (m)	TCS Type
Section I Bankalfata - Dogawa					
1.	0+000	1+300	2L+ES	1300	TCS 2.1
2.	1+300	1+600	2L+PS	300	TCS 2.3
3.	1+600	2+150	2L+ES	550	TCS 2.1
4.	2+150	2+350	2L+PS	200	TCS 2.3
5.	2+350	5+700	2L+ES	3350	TCS 2.1
6.	5+700	5+900	2L+PS	200	TCS 2.3
7.	5+900	7+800	2L+ES	1900	TCS 2.1
8.	7+800	8+000	2L+PS	200	TCS 2.3
9.	8+000	10+850	2L+ES	2850	TCS 2.1
10.	10+850	11+400	2L+PS	550	TCS 2.3
11.	11+400	19+250	2L+ES	7850	TCS 2.1
12.	19+250	19+450	2L+PS	200	TCS 2.3
13.	19+450	23+500	2L+ES	4050	TCS 2.1
14.	23+500	23+670	2L+PS	170	TCS 2.3
Section II Punasa - Mundi					
15.	0+000	4+810	2L+ES	4810	TCS 2.1
16.	0+000	8+490	2L+ES	8490	TCS 2.1
Section III Mundi - Devala					
17.	0+000	0+350	2L+PS	350	TCS 2.3
18.	0+350	2+600	2L+ES	2250	TCS 2.1
19.	2+600	2+800	2L+PS	200	TCS 2.3
20.	2+800	6+750	2L+ES	3950	TCS 2.1
21.	6+750	7+100	2L+PS	350	TCS 2.3
22.	7+100	10+400	2L+ES	3300	TCS 2.1
23.	10+400	11+000	2L+PS	600	TCS 2.3
24.	11+000	16+200	2L+ES	5200	TCS 2.1

S. No.	From (Km.)	To (Km.)	Description	Length (m)	TCS Type
25.	16+200	16+400	2L+PS	200	TCS 2.3
26.	16+400	18+630	2L+ES	2230	TCS 2.1
27.	18+630	19+200	2L+PS	570	TCS 2.3
28.	19+200	21+300	2L+ES	2100	TCS 2.1
29.	21+300	22+000	2L+PS	700	TCS 2.3
30.	22+000	24+900	2L+ES	2900	TCS 2.1
31.	24+900	25+580	2L+PS	680	TCS 2.3
32.	25+580	25+700	2L+ES	120	TCS 2.1
33.	25+700	25+900	2L+PS	200	TCS 2.3
34.	25+900	28+430	2L+ES	2530	TCS 2.1
Total (Kms.)				65.400	

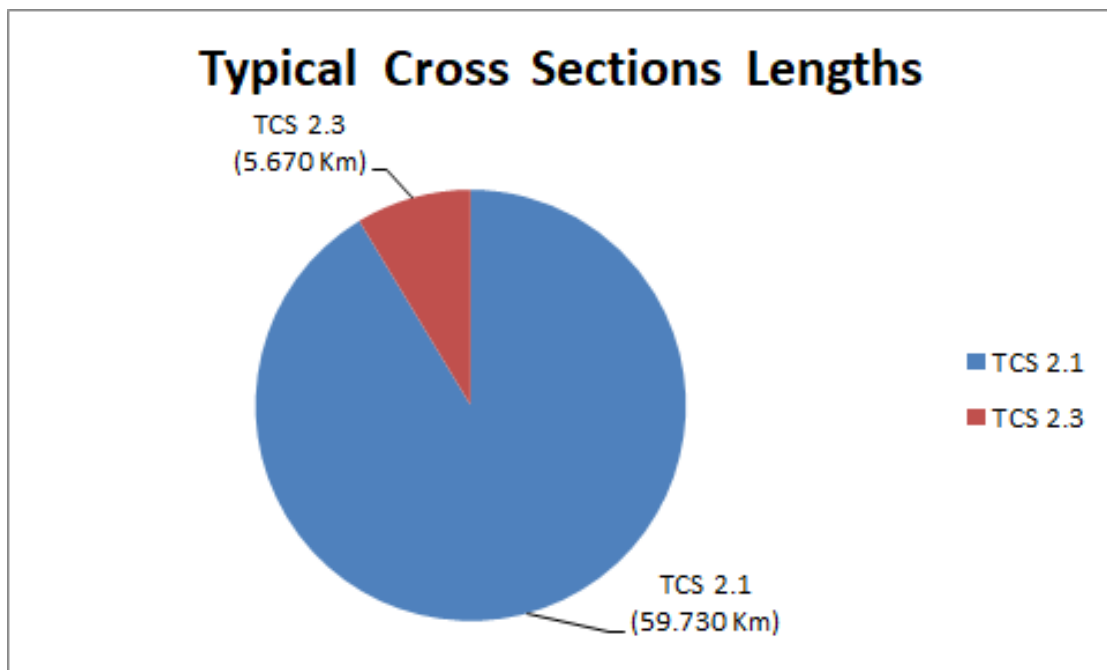


Figure 2.3: Pictorial Diagram of TCS Lengths

2.3 Road Side Drainage

- To facilitate quick disposal of storm water from the carriage way and to avoid accumulation of drainage from road side community on to the carriage way, RCC drains are constructed along the main carriage way on both flanks in Built-up sections as specified in Schedule B of the Concession Agreement in strict adherence to the Standard Specifications set forth in Schedule D of the Concession Agreement
- Accordingly, Concessionaire has provided RCC covered drains with footpath in built up areas while earthen drain in open and rural areas.

2.4 Service Roads:

Service roads are not provided along the entire stretch of the project road as per provisions of Schedule B of the Concession Agreement.

2.5 Bypass/Realignment:

Bypasses are not provided for the project road. Total 9 No of realignments are present for the project road as per Schedule B of Concession Agreement. The total realignment length is 1.719 Kms. for total project road. The list of realignment sections is given below.

Table 2.3: Realignment sections for the Project road

S No	Design Chainage (Km.)		Length (Km.)
	From	TO	
Bankhlaftata-Sovardevala			
1	1+950	2+050	0.100
2	17+150	17+300	0.150
3	20+500	20+600	0.100
Mandla-Singhaji Bridge Approach Road			
4	5+450	5+550	0.100
5	6+870	7+330	0.430
Mundi-Atoot NVDA			
6	1+680	1+815	0.135
7	5+730	6+010	0.280
8	12+490	12+650	0.160
9	26+411	26+675	0.264
Total Length			1.719

2.6 Intersections:

As per Schedule B of the Concession Agreement 7 Nos. of Major Junctions and 25 Nos. of Minor Junctions are developed. Details are given below.

Table 2.4: Summary of Junctions

S.No.	Chainage (Km.)	Side	Type of Junction	Junction category
Bankhlaftata-Sarvardevala Road				
1	0+000	LHS RHS	X	Major
2	23+672	LHS RHS	X	Major
3	2+456	RHS	T	Minor
4	5+500	RHS	T	Minor
5	5+700	RHS	T	Minor
6	8+000	RHS	T	Minor
7	8+356	LHS	T	Minor
8	11+033	LHS	T	Minor

S.No.	Chainage (Km.)	Side	Type of Junction	Junction category
9	11+500	RHS	T	Minor
10	11+575	RHS	T	Minor
11	12+790	LHS	T	Minor
12	14+650	LHS	T	Minor
13	15+420	RHS	T	Minor
Punasa-Singhaji Thermal Power Plant				
14	0+000	LHS RHS	X	Major
15	3+990	LHS	Y	Major
16	4+390	LHS	T	Major
17	0+100	RHS LHS	Staggered	Minor
18	6+010	LHS	T	Minor
19	6+060	LHS RHS	Staggered	Minor
20	6+185	RHS	T	Minor
21	6+415	RHS	T	Minor
Singhaji Bridge approach road				
Mundi-Atoot NVDA				
22	0+000	LHS RHS	X	Major
23	28+432	LHS RHS	X	Major
24	3+010	LHS	T	Minor
25	16+180	LHS	T	Minor
26	17+030	LHS	T	Minor
27	17+100	LHS RHS	X	Minor
28	18+700	RHS	T	Minor
29	19+200	RHS	T	Minor
30	25+350	RHS	T	Minor
31	25+510	RHS	T	Minor
32	25+600	LHS	T	Minor

2.7 Grade Separated Structures and underpasses:

Vehicular underpasses are not proposed on the Project road.

2.8 Road Over Bridge(ROB):

ROBs are not proposed in the project road.

2.9 Summary of the Carriageway Details:

Table 2.5: Summary of Carriageway Details

S.No.	Description	Flexible (Km.)	Rigid (Km.)	TCS Type
1	Total Length of 2 lane (Flexible)	60.710		Fig 2.1 of Schedule D of CA
2	Total Length of 2 lane (Rigid))		4.690	Fig 2.3 of Schedule D of CA
3	Total length	65.40		
Type Of Alignment				
4	New alignment			
5	Realignment	1.719		
6	Strengthening			
7	Reconstruction	63.681		
8	Total length of the project	65.400		

2.10 Summary of Structures:

Summary of Structures as per provisions of schedule B of the CA is given below.

Table 2.6: Summary of Structures

S.No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	3	1	2	3
2	Widening		1	20	3
3	Reconstruction		5	55	5
4	New		1	25	1
5	Improvement				
6	Existing Causeway is reconstructed as minor bridge		3		
	Total	3	11	102	12

Details of the condition survey carried out on Structures are provided at ANNEXURE-2&3

2.11 Bus shelters:

As per the provisions of Schedule C of the CA, 48 Nos. Bus shelters are provided. Details such as Chainage Location and Name of Village are listed in the following table.

Table 2.7: List of Bus shelters

S.No.	Chainage (Km.)	Side	Location
Section-I			
1	1+100	LHS	Near Rayapura Village
2	1+200	RHS	Near Rayapura Village
3	3+000	LHS	Near Sonkhedi Village

S.No.	Chainage (Km.)	Side	Location
4	3+100	RHS	Near Sonkhedi Village
5	5+420	LHS	Near Sanghawal Village
6	5+480	RHS	Near Sanghawal Village
7	7+700	LHS	Near Utawad Village
8	7+800	RHS	Near Utawad Village
9	8+500	LHS	Village Road
10	8+600	RHS	Village Road
11	11+600	LHS	Village Road
12	11+700	RHS	Village Road
13	14+500	LHS	Bahaderpura Village
14	14+600	RHS	Bahaderpura Village
15	15+500	LHS	Village Road
16	15+400	RHS	Village Road
17	19+320	RHS	Marjapur Village
18	23+400	LHS	Dogawa Village
19	23+500	RHS	Dogawa Village
Section II			
20	3+850	LHS	Singharwal Junction
21	3+990	RHS	Singharwal Junction
22	4+300	LHS	Dharkhadi Junction
23	4+480	RHS	Dharkhadi Junction
24	0+150	LHS	Near Manadal
25	0+220	RHS	Near Manadal
26	5+990	LHS	Near Selda mal
27	6+110	RHS	Near Selda mal
Section III			
28	0+050	LHS	Mundi Village
29	0+050	RHS	Mundi Village
30	3+060	LHS	Oborani Village
31	3+050	RHS	Oborani Village
32	6+850	LHS	Bamori Village
33	6+850	RHS	Bamori Village
34	10+550	LHS	Jalwa Village
35	10+550	RHS	Jalwa Village
36	16+380	LHS	Dewala Village
37	16+380	RHS	Dewala Village
38	17+200	LHS	Punasa
39	17+200	RHS	Punasa
40	18+670	LHS	Kutla Village

S.No.	Chainage (Km.)	Side	Location
41	18+670	RHS	Kutla Village
42	21+800	LHS	Dood Village
43	21+800	RHS	Dood Village
44	25+300	LHS	Atoot Village
45	25+300	RHS	Atoot Village
46	25+900	RHS	Atoot Village
47	28+400	LHS	Punasa
48	28+400	RHS	Punasa

2.12 Other Project Facilities Provided as per Schedule C of CA:

- Road side furniture: Sign Boards KM stones, Road Marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic Safety Devices: Metal Beam Crash barriers, parapet walls are provided as per the provisions of Schedule C of the Concession Agreement.
- Tree Plantation: Tree plantation is provided on both sides of the Project Corridor all along the way and being maintained.

MUNDI – DEVLAKUTLA - ATOOT



KM 0+000



KM 28+000

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA



KM 0+000



KM 2.200

Figure 2.4: Existing Road Features

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

Road Inventory and pavement condition surveys were carried out by a team of Engineers and the features noted at site are presented in the sections below:

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in **Table 3.1** and few representative photographs are given at the end of the Chapter

Table 3.1: Road Inventory

S.No.	Features	Remarks
1.	Terrain	Plain and Rolling
2.	Land Use	Predominantly agriculture & balance is built up
3.	Two Lane length	65.400 Kms.
4.	Earthen shoulder	1.0 m to 1.5m Width on site
5.	Realignments	1.719 Kms.
6.	Junctions	07Nos Major Junctions, 25 Nos Minor Junctions
7.	Toll Plaza	Nil
8.	Sign boards	Sign boards are provided as per highway requirements
9.	Road Markings	Lane markings are provided as per highway requirements
10.	Bus Bays /shelters	48 nos.
11.	Avenue plantation	Provided along the Project road

3.3 Pavement Condition

Pavement condition survey was carried out on the project road based on visual observations supplemented by simple measurements. The criteria adopted for the classification of condition of the pavement is as per 4.2.1 of IRC 81-1997.

Table 3.2: Pavement Classification

Classification	Pavement condition
Good	No cracking, rutting less than 10mm
Fair	No cracking or cracking confined to single crack in the wheel track with rutting between 10mm and 20mm.
Poor	Extensive cracking and/or rutting greater than 20mm sections with cracking exceeding 20% shall be treated as failed.

Pavement surface condition assessment is a key component of infrastructure asset management. The information is used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is

to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey

The survey on general pavement condition was primarily undertaken by means of slow drive-over survey, and supplemented with measurements where ever necessary. Pavement assessment was done with the help of simple instruments using measuring tape, Straight edge. It was carried out to quantify pavement deficiency on a representative basis. Aspects of pavement condition assessment include surface defects, rut depth, cracking, pot holes, patched areas, shoulder conditions etc. An overall assessment of performance serviceability of the road was also done to rate the existing pavement and shoulder condition qualitatively.

The pavement condition was measured under the following sub-heads:

- Shoulder- (Composition/Condition)
- Riding Quality (Good/Fair/Poor/Very Poor)
- Pavement Condition-
 - Cracking (% of Surface area)
 - Ravelling (% of Surface area)
 - Potholes (% of Surface area)
 - Patching (% of Surface area)
 - Rut depth (Moderate 10 to 20 mm & Severe >20 mm)
 - Pavement edge drop (mm)
- Road Side Drain (Non-Existing/ Partially Functional/ Functional)

Upon verification of the Pavement condition in the above said manner, it is observed that the Pavement condition of Project road is good. The Summary of field measurements of the Pavement Condition survey is tabulated in the standard proforma as per IRC: SP-19 and is given in ANNEXURE 1.

Table 3-3: Pavement condition summary

Chainage		Length (Kms.)	Condition
From (km.)	To (Km.)		
Section-I			
0+000	23+670	23.670	Good
Section-II			
0+000	4+810	4.810	Good
0+000	8+490	8.490	Good
Section-III			
0+000	28+430	28.430	Good

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KM 28+000



KM 24+900



KM 11+800



KM 9+100

PUNASA - MUNDI ROAD TO SINGAJI THERMAL POWER PLANT



KM 1+200



KM 1+400

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA



KM 0+000



KM 3+800

Figure 3.1: Representative Photographs of Pavement Condition

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Details of the Existing structures

Inspection of existing structures on the project section was carried out, Detailed inventory and condition is examined during the site visit as per the guide lines provided in IRC SP: 52-1999 & IRC SP: 35-1990.

4.2 Inventory of Structures

The details of structures along the project highway are listed below.

Table 4.1 List of Structures

S.No.	Type of Structure	Numbers
1	Major bridges	03 Nos.
2	Minor Bridge	13 Nos.
3	Pipe culverts	96 Nos.
4	Slab/Box Culverts	12 Nos.

The Major bridges superstructure is of RCC Solid slab wall type piers and abutments with open foundation. The minor bridges of superstructure are RCC solid slab and the substructures are of RCC/PCC conventional wall type supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair except in few locations. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3**.

4.3 Details of Major Bridges:

The total length of the Major Bridge at Km. 13+369 is 70.0m with 5 spans. The superstructure consists of RCC Solid slab. Piers and abutments are of RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

The total length of the Major Bridge at Km. 25+611 is 60.6m with 6 spans. The superstructure consists of RCC Solid slab. All piers and abutments are regular RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

The total length of the Major Bridge at Km 25+939 is 80.8m with 8 spans. The superstructure consists of RCC Solid slab. All piers and abutments are regular RCC wall type. Open foundations have been constructed for all piers and abutments. RCC railings have been provided on both sides of the deck.

Table 4.2 List of Major Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)
1	13+369	5 x 14.0	70.0
2	25+611	6 x 10.1	60.6
3	25+939	8 x 10.1	80.8

The condition of the superstructure and substructure is good. Certain minor maintenance operations such as quadrant pitching, reflector plates, cleaning of drainage spouts and strip seal expansion joints are to be carried out.

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KM 13+369



KM 25+611



KM 25+939

Figure 4.1: Representative photos of Major Bridges.

4.4 Details of Minor Bridges

The details of Minor bridges in the project stretch are given below. The type of superstructure for minor bridges are RCC girders, RCC solid slab and RCC Box type. The substructures are PCC/RCC/Masonry conventional wall types supported on open foundations. Expansion joints are either buried type or strip seal and bearings are of tar paper and elastomeric bearings. RCC crash barriers are provided on all the structures.

Table 4.3 Inventory of Minor Bridges

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
Bankhla-fata-Dogawa road				
1	0+533	1x10.6+1x9.4+1x10.6	30.6	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.
2	2+000	3x11.4	35.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
3	2+781	2X 7.0	14	Minor Bridge consists of RCC solid slab superstructure supported on PCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.
4	6+973	2 x 17.0	34	Minor Bridge consists of RCC precast girder superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat, and elastomeric Bearings and strip seal expansion joints.
5	10+459	3x8.4	26.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
6	12+193	3x8.4	26.8	Minor Bridge consists of RCC 3 cell box type. Other features are RCC crash barrier, bituminous wearing coat.
7	14+054	2x8.4	18.4	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
Mundi-Atoot Road				
1	2+513	2 x 6.4	13.9	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
2	6+650	1x 6.8	7.3	Minor Bridge consists of RCC single cell box type. Other features are RCC crash barrier, bituminous wearing coat.
3	16+154	2 x 8.4	18.4	Minor Bridge consists of RCC twin cell Box type structure. Other features are RCC crash barrier, bituminous wearing coat.
4	17+098	4 x 8.6	34.4	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutment. Other features are RCC crash barrier,

S.No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
				bituminous wearing coat.
5	18+486	2 x 6.4	14.4	Minor Bridge consists of RCC twin cell box type. Other features are RCC crash barrier, bituminous wearing coat.
Mundi-Beed road -Power plant				
1	1+300	4 x 10.3	41.2	Minor Bridge consists of RCC solid slab superstructure supported on RCC wall type piers and abutments. Other features are RCC crash barrier, bituminous wearing coat.

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KM 2+513



KM 16+154



KM 18+486

Figure 4.2: Representative Photos of Minor Bridges.

4.5 Details of Culverts

The culverts observed along the project road are mainly of two types' viz. RCC Slab/Box culverts and Pipe culverts. The condition of culverts is generally good for some of the pipe culverts. Vegetation and vent cleaning is required. In general, the condition of all the structures is found satisfactory. The detailed condition of the same are given in the following sections. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3**.

4.5.1. Details of the Slab/Box Culverts

There are 12 Nos. of slab/Box culvert in the project stretch. The details of the culverts are as given below.

Table 4.4 List of Slab/Box Culverts

S.No.	Chainage (Km.)	Span (m)	Vent Size (m)
Bankhlaftata Section			
1	2+781	1 x 2.1	1.6
2	18+01	1 x 3.4	2.8
3	18+631	1 x 5.2	3.20
Mundi Atoot Section			
4	2+937	1 x 2.8	2.5
5	3+387	1 x 3.4	2.0
6	3+424	1 x 3.4	2.0
7	6+18	1 x 4.0	4.0
8	6+726	1 x 2.5	1.8
9	17+866	1 x 2.3	1.25
10	18+701	1 x 3.70	1.90
11	25+23	1 x 4.2	2.80
12	27+369	1 x 1.4	2.5

The general condition of above Box/slab culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

4.5.2. Details of the Pipe Culverts

There are 96 Nos. of pipe culverts in the project road. The details of the culverts are as given below.

Table 4.5 List of Pipe Culverts

S.No.	Chainage (Km.)	No. of Row/Dia.(m.)	S. No.	Chainage (Km.)	No. of Row/Dia.(m.)
1	0+448	1 x 0.9	49	3+177	2 x 0.9
2	0+919	1 x 1.2	50	3+24	1 x 1.2
3	1+318	2 x 1.2	51	3+598	1 x 1.2
4	2+463	1 x 1.2	52	3+694	1 x 1.0
5	4+518	2 x 0.9	53	3+802	1 x 1.0
6	5+709	1 x 1.2	54	4+018	1 x 1.0
7	6+015	1 x 1.2	55	4+142	1 x 1.2
8	7+277	1 x 1.2	56	4+406	1 x 1.2
9	8+112	1 x 1.2	57	4+578	1 x 1.2
10	8+309	1 x 1.2	58	4+743	1 x 1.2
11	8+891	2 x 0.9	59	4+995	2 x 0.9
12	9+200	1 x 1.2	60	5+14	1 x 1.2
13	10+200	1 x 1.2	61	5+529	1 x 1.2

S.No.	Chainage (Km.)	No. of Row/Dia.(m.)
14	10+809	1 x 1.2
15	11+304	2 x 0.9
16	12+743	2 x 1.2
17	12+886	1 x 1.2
18	13+757	3 x 1.2
19	14+054	2 x 1.2
20	14+229	1 x 1.2
21	16+115	2 x 0.9
22	17+212	1 x 1.2
23	19+492	1 x 1.2
24	20+504	1 x 1.2
25	22+700	1 x 1.2
Mundi Thermal Power Plant section		
26	0+145	1 x 1.2
27	1+398	1 x 1.2
28	1+604	1 x 1.2
29	1+754	1 x 1.2
30	2+331	1 x 1.2
31	2+721	1 x 1.2
32	2+894	1 x 1.2
33	3+526	1 x 1.2
34	3+626	1 x 1.2
35	4+026	1 x 1.2
36	4+206	1 x 1.2
37	4+359	1 x 1.2
38	4+480	1 x 1.2
39	4+581	1 x 1.2
40	4+730	2 x 0.9
Mundi Singhaji Bridge section		
41	0+384	1 x 1.2
42	0+599	1 x 1.2
43	1+566	1 x 1.2
44	1+743	1 x 1.2
45	1+964	1 x 1.2
46	2+618	1 x 1.2
47	2+809	1 x 1.2
48	2+947	1 x 1.2

S. No.	Chainage (Km.)	No. of Row/Dia.(m.)
62	5+623	1 x 1.0
63	5+831	1 x 1.0
64	6+005	1 x 1.0
65	6+833	1 x 1.2
66	6+907	1 x 1.2
67	7+373	1 x 1.2
68	8+020	1 x 1.2
Mundi Atoot Section		
69	0+396	1 x 1.0
70	0+809	1 x 1.0
71	1+921	1 x 1.2
72	2+948	1 x 1.2
73	3+346	1 x 1.2
74	3.437	1 x 1.2
75	7+124	1 x 1.2
76	8+492	1 x 1.2
77	8+608	1 x 1.2
78	9+524	1 x 1.2
79	9+99	2 x 0.9
80	10+366	1 x 1.2
81	10+758	1 x 1.2
82	11+124	1 x 1.2
83	11+466	2 x 0.9
84	11+581	2 x 0.9
85	12+176	1 x 1.2
86	12+608	1 x 1.0
87	14+067	1 x 1.0
88	15+251	1 x 1.2
89	16+763	1 x 1.0
90	17.579	
91	19+52	1 x 1.0
92	21+08	1 x 1.2
93	23+937	1 x 1.2
94	25+413	1 x 1.2
95	26+092	1 x 1.2
96	21+08	1 x 1.2

The general condition of above pipe culverts is good. Maintenance is to be carried out before monsoon for vent clearance, Protection works etc.

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General:

Review of Pavement design report includes providing insights on design life of pavement, crust thickness, history of overlays on the existing pavement, pavement condition and CA provisions for the upcoming renewal cycles.

5.2 Pavement design:

The flexible pavement has low flexural strength and hence layers reflect the deformation of the lower layers / sub-grade on to the surface layer after the withdrawal of wheel load. In order to control the deflections in the sub-grade so that no permanent deflections result, the pavement thickness is so designed that the stresses on the sub-grade soil are kept within its bearing capacity. Loading of bituminous pavement requires the stiffest layers to be placed at the top surface of successive weaker layers down to sub-grade.

The project road is already operational and the standards applicable during the design development phase of the project road are taken into account for this review. Therefore, the design of pavement has been validated based on IRC: 37-2001 publication while the current publication is IRC: 37-2018.

Review of Pavement Design

The project road has three sections i.e. Section-1 Bankhlaftata-Sarvardevala, Section-II Punasa-Singhaji power plant and Singhaji Bridge approach and Section-III Mundi-Attot Nvda. These three sections have been considered as single homogeneous section HS: As per the pavement design approved in the project, the following conclusions are given.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	Design Parameters
1	Sub Grade CBR (%)	10%
2	Design Life (Years)	15 years
3	Design Traffic for BT (MSA)	2 MSA actual for 8 Years 5 MSA Adopted for 8 Years
4	Design Traffic for Granular Layers (MSA)	4.6 MSA actual for 15 Years 10 MSA Adopted for 15 Years
5	Surface course (SDBC)	25 mm
6	Binder course (DBM)	50 mm
7	Base course (WMM)	250 mm
8	Sub Base course (GSB)	200 mm

*Traffic estimated at pavement design stage is 2 MSA and 4.6 MSA for 8 Years and 15 Years respectively which is less than the specified MSA in Schedule D of CA (10MSA). Hence 10 MSA (5 MSA for BT for Initial stage) is adopted in pavement design for further evaluation of crust thickness.

5.3 Validation of Pavement design

The new pavement shall be designed in accordance with the IRC:37. “Guidelines for the Design of Flexible Pavements”. Rigid pavement shall be designed in accordance with the method prescribed in IRC:58. “Guidelines for the Design of Plain Jointed Rigid Pavements for Highways”.

Traffic considered in pavement design 5 MSA for Initial stage (8 Years) for BT and 10MSA for (15 Years) granular layers is more than the traffic forecast during the design stage. Hence the pavement design adopted is found in order.

Rigid Pavement

Pavement crust thickness in the pavement design report for rigid pavement is as follows: -

Table 5.2: Rigid Pavement Design for Toll Plaza

Description	HS-I Parameters
CBR of sub grade	10 %
Design life in years	30
Pavement Quality Concrete (PQC) - mm	280
Dry Lean Concrete (DLC) - mm	150
Drainage Layer (GSB) - (mm)	150
Separation Membrane (Microns)	125
Diameter of Dowel Bar (mm)	32
Length of Dowel Bar (mm)	500
Spacing of Dowel Bars (mm)	300
Diameter of Tie Bar (mm)	12 (Deformed)
Length of Tie Bar (mm)	640
Spacing of Tie Bars (mm)	500

5.4 Overlay during operation and maintenance:

The pavement has been designed to cater traffic 5 MSA (8 Years – up to 2021) for BT and 10 MSA (15 Years – up to 2028) for Granular layers for entire project road (up to 2028), whereas the actual traffic is 2 MSA and 4.6 MSA for 8 Years and 15 Years respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation before the end of Stage-I of design life (as per pavement design report) and prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule:

Periodic Maintenance includes Profile corrective course overlaid with the periodic renewal of the wearing course of SDBC. The detailed maintenance schedule is summarized below.

Routine maintenance - Every year

Periodic Renewal for Flexible Pavement - Proposed on or before 2021 and 2028.

Periodic Maintenance for Rigid Pavement – Re-texturing shall be done once in 10 years from construction.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

Road Safety Audit (RSA) is defined as “the formal safety performance examination of an existing or future road or intersection by an independent, multidisciplinary team. It qualitatively estimates and reports on potential road safety issues and identifies opportunities for improvements in safety for all road users”.

Road Safety has multi- sectorial and multi- dimensional issues. It incorporates the development and management of road infrastructure, provisions of safer vehicles, legislations and law enforcements, mobility planning, provisions of health and hospital services, child safety, urban land use planning.

A Key feature of a road safety audit is the use of a team of professionals with varied expertise. The team shall include highway safety engineers, highway design engineers, maintenance personal, and law enforcement. Additional specialties shall be added to the team as needed.

Central Road Research Institute (CRRI) has studied road safety elements extensively in the past and has come up with various manuals such as manual for safety in road design (1998), Road safety Audit Manual (2003) and Revised Road Safety Audit manual (2010). Indian Road Congress (IRC) has published Special provision SP-88, Manual on road Safety Audit. The methodology used for the design stage audit process is based on these manuals like Type Designs for Intersections on National Highways, 1992

Table 6.1: Referred IRC Publications

IRC : 35	Code of Practice for Road Markings
IRC : 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC : 67	Code of Practice for Road signs
IRC : 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP-88	Manual of Road Safety Audit

6.2 Existing Road Safety Audit

During the site visit it is observed that all safety items are provided as shown in the following table

Table 6.2: Safety Items

S. No.	Item Description	Status	Condition
1	Chevron signs	Available as per site requirement	Fair
	Village sign Board	Available as per site requirement	Fair
	Informatory Boards	Available as per site requirement	Fair

S. No.	Item Description		Status	Condition
		Object Hazard Markers at culverts	Available as per site requirement	Fair
2	Road Marking	Lane Marking	Available as per site requirement	Fair
3	W Beam Crash Barriers	At High Embankments	Available as per site requirement	Good

This Project Section is part of important corridor. It is the Concessionaire’s duty and responsibility to provide a safety and thorough fare for the road users by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

6.3 Conclusion

Safety arrangements done for road users along the project road are found in conformity with project highway requirements and good industry practice. However, a continuous monitoring on safety arrangements is required during the operation and maintenance period.

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Km. 2+500



Km. 6+400



Km. 10+400



Km. 8+200



Km. 10+4000



Km. 14+200



Km. 10+500



Km. 27+400

BANKHAL-DOGAWAN-BORAWAN-SAVARDEVALA



Km. 2+200



Km. 3+800



Km. 5+600



Km. 7+400



Km. 7+500



Km. 8+000

Figure 6.1: Representative Photos During Road Safety Audit

CHAPTER 7. OPERATION AND MAINTENANCE

7.1 General

As per Article 17 of the Concession Agreement, the Concessionaire will operate and maintain the Project road by itself or through O & M Contractors and comply with specification and standards, and other requirements set forth in this Agreement, Good Industry Practice, Applicable Laws, applicable permits and manufacturer guidelines.

7.2 Inspection

Inspection system followed is illustrated as divided into the following 3 types.

Visual Inspection: Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.

Detailed Inspection: Detailed Inspections often (require some measuring instruments) are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate if there is any need for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution

Thorough Inspection: Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

The inspection procedures will assist in identifying the need for replacement or renewal under planned program of maintenance and rehabilitation. The elements viz pavement, drainage, shoulders / slopes / Earthworks, structures and buildings are covered.

Maintenance program will be submitted to Authority not later than 45 days prior to beginning of each accounting year during the operation period.

7.3 Operations:

Traffic Flow Operation & Traffic Management Plan:

Following are the obligations of the Concessionaire for the regular and emergency operations of the Project road and Project Facilities.

- 1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
- 2 carrying out preventive and periodic maintenance of the Project road;
- 3 undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;
- 4 undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs
- 5 Functioning of the lighting system;
- 6 Functioning of the Patrolling System

- 7 Functioning of rescue and medical aid services
- 8 Ambulance as and when required
- 9 Functioning of the Project Facilities
- 10 Administrative, Operational and Maintenance Base Camp
- 11 Truck Parking Lay bays
- 12 Pickup Bus stops / Bus Bays
- 13 Protection of the environment and provision of equipment and materials therefor;
- 14 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
- 15 complying with Safety Requirements in accordance with Article 18.

7.4 Maintenance of Project Road

The maintenance methodology and yearly maintenance programme will guide the Maintenance team to undertake the routine & periodic maintenance works of the Project Facilities. This programme is the basic indicator of the intended works to be carried out by the Maintenance Team over a period of one year.

Road maintenance can be carried out in four ways as listed below.

- i. Preventive Maintenance
- ii. Routine Maintenance
- iii. Periodic Maintenance
- iv. Special repairs

Preventive Maintenance

Preventive maintenance is an organized, systematic process of applying a series of preventive treatments over the life of the pavement to minimize life cycle costs.

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period.

The flexible pavement is in good condition and hence doesn't require any immediate or preventive interventions.

Routine Maintenance

Routine maintenance, which involves repairing of cracks, replacement of safety girders along the highway, clearance of debris following accidents, ensuring functionality of sign posts, maintenance of a security set-up, and such other activities.

Periodic Maintenance

In contrast to preventive maintenance treatments, periodic maintenance treatments are ideally applied on pavements to improve surface integrity and waterproofing, or to improve skid resistance, without increasing the strength of the pavement significantly. They are sometimes referred to as “functional overlays,” as they are intended to restore or enhance the ability of the roadway to serve its purpose (function), but do not increase the load-carrying capabilities. If the pavement failure is more and demands for a “structural overlay” they are intended to increase load-carrying capabilities of the project road.

The details of periodic maintenance schedule are given below.

Table 7.1 Schedule and status of Periodic Maintenance

Description	Schedule	Status
1 st Periodic Maintenance	2021	Planned to execute
2 nd Periodic Maintenance	2028	Planned to execute

Special Repairs

The group of activities performed to restore the roadway following damage due to natural calamities such as heavy floods, sand storms, hurricanes, cyclones, earthquakes or landslides which shall be unpredictable. The affected Project road shall be rectified, and the system shall be restored to function as per programme prepared in consultation with Independent Engineer. Typical activities include,

- Culvert and bridge repairs
- Retaining wall repairs and construction;
- Construction of Diversions;
- Floodway repairs; and
- Flood damage restoration works, etc.

7.5 Review of Test Reports

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed.

The test was conducted in the month of September 2020. As per Schedule K of CA, If the stretch exceeds 3000mm in a KM shall be rectified. No stretch exceeded the permissible limit in the Project Road.

Benkelman Beam Deflection (BBD):

The performance of flexible pavement is closely related to the elastic deflection of pavement under the wheel loads. The deformation or elastic deflection under a given load depends upon subgrade soil type, its moisture content and compaction, the thickness and the quality of pavement courses, drainage conditions, pavement surface temperatures etc. BBD method is widely followed to evaluate the structural capacity of pavement and for estimation and design of overlay for strengthening of any weak pavement.

Concessionaire has conducted the test in September 2019. The test report has been verified and found within permissible limits as per IRC 81.

7.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA and project corridor. The cost summary is given below, and detailed cost estimations are given in ANNEXURE 4.

Table 7.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.191	0.377		0.00	0.57
2021	0.196	0.389	11.41	0.00	12.00
2022	0.202	0.400		0.00	0.60
2023	0.208	0.412		0.00	0.62
2024	0.215	0.425		0.00	0.64
2025	0.221	0.438		0.00	0.66
2026	0.228	0.451		0.00	0.68
2027	0.235	0.464	6.73	0.00	7.43
2028	0.242	0.478	6.90	0.00	7.62
2029	0.073	0.144		0.00	0.22
Total	2.01	3.98	25.04	0.01	31.04

CHAPTER 8. REVIEW OF CONCESSION AGREEMENT

8.1 General: Scope of Work (Article 2)

Article 2 provides the scope of work which includes the following.

- construction of the Project road on the Site set forth in Schedule-A of CA and as specified in Schedule-B of CA together with provision of Project Facilities as specified in Schedule-C of CA, and in conformity with the Specifications and Standards set forth in Schedule-D of CA;
- operation and maintenance of the Project road in accordance with the provisions of this Agreement;
- performance and fulfilment of all other obligations of the Concessionaire in accordance with the provisions of this Agreement and matters incidental

8.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 5**.

8.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority:

- Providing adequate Right of Way
- Providing necessary approvals as per the Concession Agreement

Conditions precedent to be fulfilled by the Concessionaire:

- Provide performance security to the Authority
- Executed and procured Escrow Agreement & Substitution Agreement
- Procured all applicable permits specified in Schedule E of CA
- Executed financing Agreements and delivering 3 copies of Financial Package
- Delivered to the Authority confirmation in original of the correctness of their representations and warranties set forth in Agreement and a legal opinion from the legal opinion from the legal counsel of the Concessionaire

8.4 Major Obligations of the Concessionaire (Clause 5.1)

- The Concessionaire shall obtain necessary permits in conformity with the applicable laws
- Procure appropriate rights for obtaining materials
- Perform and fulfil its obligations under financing Agreements
- To make reasonable efforts to facilitate the acquisition of land required for execution
- Transfer the Project road upon termination of the Contract Agreement

8.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement,
- The Performance security shall remain in force and effect for a period of one year from the Appointed Date
- Performance Security shall be released upon the Concessionaire expending on Project Construction, an Aggregate sum, not less than 20% of the Total Project Cost.

8.6 Provisional Completion Certificate (Clause 14.3)

Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA after determining the tests on successful completion, the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the Concession Agreement. Copy of the Provisional Completion Certificate issued is enclosed at **Annexure 6**

8.7 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Completion Certificate, Completion Certificate shall be issued to the Concessionaire.
- Copy of the Completion Certificate issued is enclosed at **Annexure 7**.

8.8 Commercial Operation Date (COD) (clause 15.1)

- COD shall be the date on which the Provisional Completion Certificate is issued by the Independent Engineer.
- With COD the Project shall enter into commercial service and the Concessionaire is entitled to demand and collect Fee.

8.9 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDC and the same are given in ANNEXURE 9

8.10 O&M Obligations of the Concessionaire (Clause 17.1)

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of other equipment
- Preventing any unauthorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the Contract Agreement.

8.11 Maintenance Requirements (Clause 17.2)

The Contractor shall procure that at all times during the Operations Period; the Project road conforms to the maintenance requirements set forth in Schedule K of CA (the “Maintenance Requirements”).

8.12 Maintenance Manual (Clause 17.3)

No later than 180 (one hundred and eighty days prior to the Scheduled Two Laning Date, the Contractor shall, in consultation with the Independent Engineer, evolve a repair and maintenance manual (the “Maintenance Manual”) for the regular and preventive maintenance of the Project in conformity with the Specifications and Standards, Maintenance Requirements, Safety Requirements and Good Industry Practice, and shall provide 5 (five) copies thereof to the Authority and 2 (two) copies to the Independent Engineer. The Maintenance Manual shall be revised and updated once every 3 (three) years and the provisions of this Clause shall apply, mutatis mutandis, to such revision.

8.13 Maintenance Programme (Clause 17.4)

- On or before COD and no later than 45 days prior to the beginning of each Accounting year during the Operation Period as the case may be the Concessionaire shall provide to the Authority and Independent Engineer its proposed annual programme of preventive, urgent and the schedule maintenance.
- The Concessionaire has been submitting the Annual Maintenance Programme regularly as per the above clause.

8.14 Damages for breach of Maintenance Obligations (Clause 17.8)

- In the event that the Contractor fails to repair or rectify any defect or deficiency set forth in the Maintenance Requirements within the period specified therein, it shall be deemed to be in breach of this Agreement and the Concessionaire shall be entitled to recover Damages, to be calculated and paid for each day of delay until the breach is cured, at the higher of the following.
- 0.5% (zero decimal five percent) of the Average Daily Fee, and
- 0.1% (zero point one per cent) of the cost of such repair or rectification as estimated by the Independent Engineer.

8.15 Monthly status reports (Clause 19.1)

During the Operation Period, the Contractor shall, no later than 7 (seven) days after the close of each month, furnish to the Concessionaire, the Authority and the Independent Engineer a monthly report stating in reasonable detail the condition of the Project including its compliance or otherwise with the Maintenance Requirements, Maintenance Manual, Maintenance Program and Safety Requirements, and shall promptly give such other relevant information as may be required by the Concessionaire, Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

8.16 Annuity (Clause 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y of CA, the sum of Rs 9.90 Crores.

As per Clause 27.2.2, In case the COD is different from the Schedule Y of CA, then the annuity payment schedule shall be suitably modified to be a period of 6 months from the preceding Annuity Payment date are shown below.

Table 8.1 Status of Annuity Payments

S. No.	Particulars	Payment Paid on
1	1 st Annuity	18-Oct-14
2	2 nd Annuity	31-Mar-15
3	3 rd Annuity	5-Oct-15
4	4 th Annuity	04-Apr-16
5	5 th Annuity	5-Oct-16
6	6 th Annuity	10-Apr-17
7	7 th Annuity	31-Oct-17
8	8 th Annuity	27-Apr-18
9	9 th Annuity	16-Oct-18
10	10 th Annuity	04-Apr-19
11	11 th Annuity	1-Oct-19
12	12 th Annuity	21-Apr-20
13	13 th Annuity	30-Sep-20

All the annuities are being paid regularly by the Authority.

8.17 Concession Fee (Article 26)

- In consideration of the grant of Concession the Concessionaire shall pay Concession Fee of Rs1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC

8.18 Change in Law (Article 41)

The Contractor acknowledges that the Contractor shall be responsible for any consequences arising from any Change in Law and the Contractor shall at its own costs and expenses, undertake the compliance with any such Change in Law, however, in the event any receivables are obtained by the Concessionaire from the Authority, towards the losses incurred by the Concessionaire on account of Change in Law, then the Contractor shall ensure that such receivables are passed to the Concessionaire.

CHAPTER 9. INSURANCE

9.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice.

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

Table 9.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Property
			From	To	
Civil Engineering Completed Risk	National Insurance Company Limited	321300441910001991	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office & IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier

Copy of the insurance copy is enclosed at **Annexure 8**.

CHAPTER 10. CONCLUSION

10.1 General

Based on detailed site inspection, review of various documents and reports as described in the preceding chapters technical over view of the Project is provided below.

10.2 Pavement Condition

- Pavement condition is good.
- Drainage system is effective along the project road as the RCC drains constructed in built up locations and earthen drains in rural locations.
- Shoulder condition is fair.

10.3 Condition of Structures

- General condition of Bridges is good.
- No major structural defects were noticed
Condition of Culverts is good.
- Observed vegetation growth in vents of Box and Hume Pipe culverts and they are getting cleared during regular maintenance period.

10.4 Road safety

- Pavement marking is in good condition and number of sign boards are provided as per Highway requirement. The condition of signboards is good.
- Other road appurtenances like metal beam crash barriers and Kerb are intact

10.5 Maintenance

- The routine maintenance being carried out by O&M contractor effectively, based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance is scheduled in 2021.

10.6 Epilogue

The project is designed and constructed as per the stipulated specifications besides maintenance work is being carried out timely and effectively to keep the road in traffic worthy and safe at all times.

Annexures

Annexure 1: Pavement Condition

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
Bankhlafata Dogawa																
0.000	1.000								G		ES	F	F	ULD	F	
1.000	2.000								G		ES	F	F	ULD/LD	F	
2.000	3.000								G		ES	F	F	ULD/LD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G		ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD/LD	F	
6.000	7.000								G		ES	F	F	ULD	F	
7.000	8.000								G		ES	F	F	ULD/LD	F	
8.000	9.000								G		ES	F	F	ULD	F	
9.000	10.000								G		ES	F	F	ULD	F	
10.000	11.000								G		ES	F	F	ULD/LD	F	
11.000	12.000								G		ES	F	F	ULD/LD	F	
12.000	13.000								G		ES	F	F	ULD	F	
13.000	14.000								G		ES	F	F	ULD	F	
14.000	15.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
15.000	16.000								G		ES	F	F	ULD	F	
16.000	17.000								G		ES	F	F	ULD	F	
17.000	18.000								G		ES	F	F	ULD	F	
18.000	19.000								G		ES	F	F	ULD	F	
19.000	20.000								G		ES	F	F	ULD/LD	F	
20.000	21.000								G		ES	F	F	ULD	F	
21.000	22.000								G		ES	F	F	ULD	F	
22.000	23.000								G		ES	F	F	ULD	F	
23.000	23.670								G		ES	F	F	ULD/LD	F	
Mundi To ThermalPower plant																
0.000	1.000								G	0.5	ES	F	F	ULD	F	
1.000	2.000								G		ES	F	F	ULD	F	
2.000	3.000								G		ES	F	F	ULD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	4.810								G		ES	F	F	ULD	F	
Shingaji Bridge Road																
0.000	1.000								G	0.5	ES	F	F	ULD/LD	F	
1.000	2.000								G	1	ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
2.000	3.000								G		ES	F	F	ULD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G	1	ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD/LD	F	
6.000	7.000								G	0.5	ES	F	F	ULD/LD	F	
7.000	8.000								G		ES	F	F	ULD	F	
8.000	8.490								G					ULD	F	
Mundi Atoot section																
0.000	1.000								G					ULD/LD	F	
1.000	2.000								G		ES	F	F	ULD	F	
2.000	3.000								G		ES	F	F	ULD/LD	F	
3.000	4.000								G		ES	F	F	ULD	F	
4.000	5.000								G		ES	F	F	ULD	F	
5.000	6.000								G		ES	F	F	ULD	F	
6.000	7.000								G		ES	F	F	ULD/LD	F	
7.000	8.000								G		ES	F	F	ULD/LD	F	
8.000	9.000								G		ES	F	F	ULD	F	
9.000	10.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P/VP)		Composition	Condition (Fair / Poor / Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
10.000	11.000								G		ES	F	F	ULD/LD	F	
11.000	12.000								G		ES	F	F	ULD	F	
12.000	13.000								G		ES	F	F	ULD	F	
13.000	14.000								G		ES	F	F	ULD	F	
14.000	15.000								G		ES	F	F	ULD	F	
15.000	16.000								G		ES	F	F	ULD	F	
16.000	17.000								G		ES	F	F	ULD/LD	F	
17.000	18.000								G	0.5	ES	F	F	ULD	F	
18.000	19.000								G		ES	F	F	ULD/LD	F	
19.000	20.000								G	0.5	ES	F	F	ULD/LD	F	
20.000	21.000								G	0.5	ES	F	F	ULD	F	
21.000	22.000								G		ES	F	F	ULD/LD	F	
22.000	23.000								G	1	ES	F	F	ULD	F	
23.000	24.000								G	1	ES	F	F	ULD	F	
24.000	25.000								G	0.5	ES	F	F	ULD/LD	F	
25.000	26.000								G				F	ULD/LD	F	
26.000	27.000								G		ES	F	F	ULD	F	
27.000	28.000								G		ES	F	F	ULD	F	

Condition: G=Good, F=Fair, P=Poor & VP=Very poor Rutting: M=Moderate & S=Severe Drain: LD=Lined open Drain, ULD=Unlined Drain, CD=Covered Drain, NO=No drain, PF=Partial Function, F= Functional

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
28.000	28.430								G		ES	F	F	ULD	F	

Annexure 2: Condition of Bridges

S.No.	Chainage	Type of Structure	Substructure	Superstructure	Expansion Joint	Approach slabs	Drainage spouts	Wearing coat	Bearings	Quadrant Pitching
Bhamkalfata-Dogawa road										
1	0+533	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	-
2	2+000	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
3	2+781	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
4	6+973	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
5	10+459	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
6	12+193	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
7	14+054	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	Good	Good
Mundi-Atoot Road										
8	2+513	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
9	6+650	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
10	16+154	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
11	17+098	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
12	18+486	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good
Mundi-Beed road -Power plant										
13	1+300	Minor Bridge	Good	Good	Fair	Fair	Fair	Fair	-	Good

Annexure 3: Condition of Culverts

Box/Slab Culverts

S.No.	Chainage	Box/slab	Return wall	Quadrant pitching	Toe wall	Aprons
1	2.781	Good	Good	Fair	Fair	Fair
2	18.01	Good	Good	Fair	Fair	Fair
3	18.631	Good	Good	Fair	Fair	Fair
4	2.937	Good	Good	Fair	Fair	Fair
5	3.387	Good	Good	Fair	Fair	Fair
6	3.424	Good	Good	Fair	Fair	Fair
7	6.18	Good	Good	Fair	Fair	Fair
8	6.726	Good	Good	Fair	Fair	Fair
9	17.866	Good	Good	Fair	Fair	Fair
10	18.701	Good	Good	Fair	Fair	Fair
11	25.23	Good	Good	Fair	Fair	Fair
12	27.369	Good	Good	Fair	Fair	Fair

Hume Pipe Culverts

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0.448	Good	Fair	Fair	Fair
2	0.919	Good	Fair	Fair	Fair
3	1.318	Good	Fair	Fair	Fair
4	2.463	Good	Fair	Fair	Fair
5	4.518	Good	Fair	Fair	Fair
6	5.709	Good	Fair	Fair	Fair
7	6.015	Good	Fair	Fair	Fair
8	7.277	Good	Fair	Fair	Fair
9	8.112	Good	Fair	Fair	Fair
10	8.309	Good	Fair	Fair	Fair
11	8.891	Good	Fair	Fair	Fair
12	9.2	Good	Fair	Fair	Fair
13	10.2	Good	Fair	Fair	Fair
14	10.809	Good	Fair	Fair	Fair
15	11.304	Good	Fair	Fair	Fair
16	12.743	Good	Fair	Fair	Fair
17	12.886	Good	Fair	Fair	Fair
18	13.757	Good	Fair	Fair	Fair
19	14.054	Good	Fair	Fair	Fair
20	14.229	Good	Fair	Fair	Fair
21		Good	Fair	Fair	Fair

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
22	16.115	Good	Fair	Fair	Fair
23	17.212	Good	Fair	Fair	Fair
24	19.492	Good	Fair	Fair	Fair
25	20.504	Good	Fair	Fair	Fair
26	22.7	Good	Fair	Fair	Fair
27	0.145	Good	Fair	Fair	Fair
28	1.398	Good	Fair	Fair	Fair
29	1.604	Good	Fair	Fair	Fair
30	1.754	Good	Fair	Fair	Fair
31	2.331	Good	Fair	Fair	Fair
32	2.721	Good	Fair	Fair	Fair
33	2.894	Good	Fair	Fair	Fair
34	3.526	Good	Fair	Fair	Fair
35	3.626	Good	Fair	Fair	Fair
36	4.026	Good	Fair	Fair	Fair
37	4.206	Good	Fair	Fair	Fair
38	4.359	Good	Fair	Fair	Fair
39	4.48	Good	Fair	Fair	Fair
40	4.581	Good	Fair	Fair	Fair
41	4.73	Good	Fair	Fair	Fair
42	0.384	Good	Fair	Fair	Fair
43	0.599	Good	Fair	Fair	Fair
44	1.566	Good	Fair	Fair	Fair
45	1.743	Good	Fair	Fair	Fair
46	1.964	Good	Fair	Fair	Fair
47	2.618	Good	-	Fair	Fair
48	2.809	Good	Good	Fair	Fair
49	3.177	Good	-	Fair	Fair
50	3.24	Good	Good	Fair	Fair
51	3.598	Good	Good	Fair	Fair
52	3.694	Good	Good	Fair	Fair
53	3.802	Good	Good	Fair	Fair
54	4.018	Good	Good	Fair	Fair
55	4.142	Good	Good	Fair	Fair
56	4.406	Good	Good	Fair	Fair
57	4.578	Good	Good	Fair	Fair
58	4.743	Good	Good	Fair	Fair
59	4.995	Good	Good	Fair	Fair
60	5.14	Good	Good	Fair	Fair

S.No	Chainage	Hume Pipe	Head wall	Quadrant pitching	Toe wall
61	5.529	Good	Good	Fair	Fair
62	5.623	Good	Good	Fair	Fair
63	5.831	Good	Good	Fair	Fair
64	6.005	Good	Good	Fair	Fair
65	6.833	Good	Good	Fair	Fair
66	6.907	Good	Good	Fair	Fair
67	7.373	Good	Good	Fair	Fair
68	8.02	Good	Good	Fair	Fair
69	0.396	Good	Good	Fair	Fair
70	0.809	Good	Good	Fair	Fair
71	1.921	Good	Good	Fair	Fair
72	2.948	Good	Good	Fair	Fair
73	3.346	Good	Good	Fair	Fair
74	3.437	Good	Good	Fair	Fair
75	7.124	Good	Good	Fair	Fair
76	8.492	Good	Good	Fair	Fair
77	8.608	Good	Good	Fair	Fair
78	9.524	Good	Good	Fair	Fair
79	9.99	Good	Good	Fair	Fair
80	10.366	Good	Good	Fair	Fair
81	10.758	Good	Good	Fair	Fair
82	11.124	Good	Good	Fair	Fair
83	11.466	Good	Good	Fair	Fair
84	11.581	Good	Good	Fair	Fair
85	12.176	Good	Good	Fair	Fair
86	12.608	Good	Good	Fair	Fair
87	14.067	Good	Good	Fair	Fair
88	15.251	Good	Good	Fair	Fair
89	16.763	Good	Good	Fair	Fair
90	17.579	Good	Good	Fair	Fair
91	19.52	Good	Good	Fair	Fair
92	21.08	Good	Good	Fair	Fair
93	23.937	Good	Good	Fair	Fair
94	25.413	Good	Good	Fair	Fair
95	26.092	Good	Good	Fair	Fair
96	21.08	Good	Good	Fair	Fair

Annexure 4: Operation & Maintenance Cost

Routine Maintenance cost for 1 year

S.No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	65.4	12	4	350	10,98,720	04 nos of Labour
2	ROW Cleaning	Half yearly	Km	32.7	2	5	350	1,14,450	5 Nos of labour per KM (50% of the Project length)
3	Cleaning of Culverts	Half yearly	Nos	108	2	2	650	2,80,800	3 nos of Labour along with JCB or Excavator
4	Road Furniture Cleaning	Quarterly	Km	65.4	4	2	350	1,83,120	02 nos of Labour
5	Maintenance of Bus shelters	Monthly	Nos	48	6	2	350	2,01,600	2 nos/ Bus shelter/month
6	Bridges	Half yearly	Nos	13	2	2	350	18,200	02 nos of Labour for removal of vegetation/Structure
								18,96,890	
EQUIPMENT SUPPLY								-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	10000	10,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
								10,000	
								19,06,890.00	

Incidental cost for 1 year

S.No.	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm	1	1	5036	516	25,98,576	33 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm	1	1	534	168	89,712	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum	1	3	981	225	6,62,175	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km	1	1	25	4000	1,00,000	5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			75	2400	1,80,000	5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (KM Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos	65.4	4	16	2250	1,44,000	5 % of total stones per year (unable to understand the backup)
Total amount for 1 Year								37,74,463	

Operational Expenses

S.No.	PARTICULARS	Amount
1	Stationary	₹ 10,000
	Total Amount	₹ 10,000

Summary of Major Maintenance

Description	Due date	Base cost	Esc Period	Escallation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
Major Maintenance - Highway	01-04-2021	11,34,24,423	0.20	3.0%	11,41,04,970	11.41
Major Maintenance - Highway	01-04-2027	5,67,12,212	6.20	3.0%	6,72,60,683	6.73
Major Maintenance - Highway	01-04-2028	5,67,12,212	7.20	3.0%	6,89,62,049	6.90
				Total	₹ 25,03,27,702	25.04

Major maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)							
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sqm.	Sqm	4,74,810.00	14.00	66,47,340	4,74,810.00	14.00	66,47,340
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a	Cum	10,683.23	7,480.00	7,99,10,523	10,683.23	7,480.00	7,99,10,523

	hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.							
3	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum	-	6,800.00		-	6,800.00	
4	Micro surfacing	Sqm	1,18,702.50	160.00	1,89,92,400	1,18,702.50	160.00	1,89,92,400
5	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTR S	-	250.00		-	250.00	
6	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	-	130.00		-	130.00	
	Total				10,55,50,263			10,55,50,263
	Junctions, Traffic Signs Marking and Other Appurtenances							
1	Providing and laying of cement concrete kerb without channel (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - Consider 5% for construction period.	Rmt	-	380.00		-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes, Ref to	Sqm	15,260.00	516.00	78,74,160	15,260.00	516.00	78,74,160

	Technical specification 803.							
3	Road Studs	Nos	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
				-	78,74,160		-	78,74,160
	Grand Total				11,34,24,423			11,34,24,423

Annexure 5 : Letter of Acceptance



MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED

(Govt. of M.P. Undertaking)
16-A, Arora Hills, Bhopal - 462 011
Tel.: (0) 755-2765199, 205, 213, 216 (EPBX) Fax : 01-755-2572643
Website : www.mprdc.mil.in.

No. MPRDC/BOT/MDR/P-1/2012/1103a
Bhopal, dated 13 December, 2012

✓ M/s. Dip Buildcon Ltd.,
E-5/99, Arora Colony,
Bhopal
Fax: 4247574

Sub: **Development of Bankhafaata-Dogawa-via-Borawa-Sarvadevala, Punasa-Mundi-Singhaji (Thermal Power Plant Road, Singhaji Bridge Approach Road & Mundi-Devala-Khutala-Atoot NVDA Major District Roads on BOT basis under Package-I.**


In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of Bankhafaata-Dogawa-via-Borawa-Sarvadevala, Punasa-Mundi-Singhaji & Mundi-Devala-Khutala-Atoot NVDA Major District Roads (Package-I) on BOT (Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. 9.90 crores (Rupees nine crores ninety lacs only) as Annuity Amount payable in terms of Clause 27 of the Concession Agreement.

Pursuant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender.


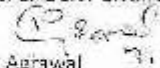

Yours faithfully

Encl: Duplicate copy of L.O.A



(Arun Paliwal)
By General Manager

Connecting People Through quality infrastructure

Annexure 6: Provisional Completion Certificate

 <p>VAIDYA ORGANISATION INFRASTRUCTURE DEVELOPMENT CONSULTANT</p>	<p>T.L. Office: 1003, Shikha Complex, Regd. Forum, Indore (M.P.), Tel/Fax: 0731-4025447 Mob: 9425941036, E-mail: vaidya@rediffmail.com K. Of. : 311, Indraprasth Tower, 2nd Flg. Road, I. S. B. Bldg, Indore (M.P.) Tel/Fax: 0731-4025833 Mob: 9426045691, Email: Vaidya@rediffmail.com</p>
<p>Letter No. VO/TL/DBL-2/78</p>	<p>Date: 31/03/2014</p>
<p>To,</p>	
<p>M/s DBL Bankhalafata - Dogawa Toll ways Ltd, E-5/39 Arera Colony Bhopal (M.P.)</p>	
<p><u>PROVISIONAL CERTIFICATE</u></p>	
<p>1. I Team leader Vaidya Organisation Indore, acting as Independent Engineer, under and in accordance with the concession agreement dated 28.01.2013 (The "Agreement") for development of the Development of Bankhalafata - Dogawa - via Borawa - Sarvardevala, Punasa-Kundi - Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi- Devala - Khutala - Atot NVDA" (3 MDRs) on BOT (Annuity) Basis Package -1 (Total length 65.40km) of MDR the "Project Highway" on build, operate and transfer (BOT) basis, through M/s DBL Bankhalafata - Dogawa Toll ways Ltd Bhopal hereby certify that the test specified in Article 14 and Schedule-I of the agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.</p> <p>2. Construction works that were found to be incomplete and/or deficient have been specified in the punch list appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the agreement. (Some of the incomplete works have been delayed as a result of reason attributable to the MPRDC or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Through the remaining incomplete works have been delayed as a result of reason attributable to the Concessionaire.) I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway pending completion thereof.</p> <p>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 31 day of March 2014.</p>	
<p>ACCEPTED, SIGNED, SEALED AND DELIVERED For and on behalf of CONCESSIONAIRE by:</p>	<p>SIGNED, SEALED AND DELIVERED For and on behalf of INDEPENDENT ENGINEER by:</p>
<p>A.M. Qureshi M/s DBL Bankhalafata - Dogawa Toll ways Ltd Bhopal</p>	<p> P. C. Agrawal Team Leader Indore Package</p>
	

Annexure 7: Completion Certificate

 **VAIDYA ORGANISATION**
INFRASTRUCTURE DEVELOPMENT CONSULTANT

TL Office: 302, Sheta Complex, Paga Square, Indore (M.P.), Tel/Fax: 07314005147
Mob: 9722900337, E-mail: vaidya.infrapro@gmail.com
H. Off: 371, Indraprasth Tower, 6/1, M.G. Road, Indore (M.P.) Tel/Fax: 07314000650
Web: 03762-80020, Email: vaidyaind@yahoo.co.uk

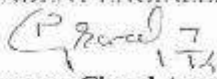
SCHEDULE -J
(See Clauses 14.2 & 14.3)

COMPLETION CERTIFICATE

1. I **Poonam chand Agrawal** Team Leader **Vaidya Organisation Indore**, acting as Independent Engineer, under and in accordance with the Concession Agreement dated 28.01.2013 (the "Agreement"). For intermediate/Two laning of the "Bankhlfata-Dogawa-via Borawa-Sarvardevala, Punasa-Mundi-Singhaji (Thermal Power Plant) & Singhaji Bridge Approach Road, Mundi-Devala-Khutala-Atoot NVDA" (3 MDRs) on **BOT (Annuity) Basis Package -1** (Total length **65.40Km**) of Major District Road (the "MDR") on build, operate and transfer (BOT) basis, through M/s **DBL Bankhlfata - Dogawa Toll ways Ltd. Bhopal** hereby certify that the tests specified in Article 14 and Schedule-I of the agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliable placed in commercial services of the Users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit entry in to commercial operation on this the first day of July, 2014.

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


Poonam Chand Agrawal
Team Leader
Indore Package

Annexure 8: Insurance Details

पॉलिसी अनुसूची Policy Schedule - Civil Engineering Combined Risk
Policy Number: 321300441910001991
संयोजक कार्यालय/Issuing Office: मद्रास, चेन्नई/Sales Channel Code: 910550900001
कार्यालय कोड/Office Code: 321300
कार्यालय पता/Office Address: BHOPAL
 DIVISION H B 6, Indrapuri, B.H.E.L., Bhopal, Madhya Pradesh - 452022.
 State Code: 23, Madhya Pradesh
 GSTW 23AAACW360E12B
 Contact Number: 755 2682622
 eMail: 321300@nic.co.in
 Mobile Number:
सुरक्षा सुदोष/Business Source: 21035A
सहायक कोड/Co Broker Code: 180 345 0330
Customer Care Toll Free Number: 1800 345 0330
email: customer.support@nic.co.in

ग्राहक का नाम /Customer Name: DBL BANKHALAFATA
ग्राहक आईडी /Customer ID: 9701551543
पैन /PAN: AACC0588L
सं. /Address: PLOT NO 5, INSIDE GOVIND NAHAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL-462015, City: BHOPAL, Dist: BHOPAL, State: MADHYA PRADESH, P.N: 462016.
फोन /Phone:
ईमेल /E-Mail:
Cell: 9826292328

प्रभावित: 27/03/2020 से 00.00 से 26/03/2021 को मध्य रात्रि तक प्रभावी। Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

विवरण / Premium	₹	कवरेज संख्या और तारीख / Cover No. Number and Date	NA
CGST	₹ 42,438.00		
SGST/UTGST	₹ 91,438.00		
IGST	₹ 0.00		
केलिंग चार्ज / Kerala Freight Charge	₹ 0.00	प्राथमिक संख्या और तारीख / Principal Number and Date	8800299327006542 Dt: 27/03/2020
बन शोराही / स्टैम्प / Less GST_TDS	₹ 0.00		
पुनर्प्राप्त योग्य स्टैम्प /Recoverable Stamp Duty	₹ 0.00	रसीद संख्या और तारीख / Receipt Number and Date	32130081910007969 Dt: 27/03/2020
कुल /Total Amount	₹ 12,26,072.00	पहिली पॉलिसी संख्या और समाप्ति /Previous Policy Number and Expiry Date	NA

(Rupees Twelve Lakh Twenty Five Thousand Seventy Two Only.)
 Location: Bankhlaifata-Dogawa-Via-Borawa-Savardevala, Punasa-Mundi-Singhaji (Thermal Power Plant) and Singhaji Bridge approach Road, Mundi-Devala-Khutala-Atoot NVDA Road, Madhya Pradesh/Minar - East, Khachwa - M.P, 450001.

Sr.No	Type of Risk	Description Of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Road Furniture, Fixtures, Electrical	Zone II	98,64,80,000.00	1,00,000.00
2	Roads	Poles Lighting & Fittings, Signboard & Safety Barrier	Zone III	5,16,20,000.00	1,00,000.00

संगत शर्तें/प्रत्येकन एंड वारंटी / Clauses, Endorsements and Warranties Applicable/Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause. Policy is subject to following conditions: POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

- 1 Excess applicable under the policy is: (a) Up to SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & up to 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess.
- 2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
- 3.No Coverage for (Road) Transportation Tunnels
- 4.No Coverage for Marine Vessel Impact Damage
- 5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:
 Development of Bankhlaifata-Dogawa-Via-Borawa-Savardevala, Punasa-Mundi-Singhaji (Thermal Power Plant) and Singhaji Bridge approach Road, Mundi-Devala-Khutala-Atoot NVDA Road on BOT (Annuity) Basis Packaged.

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Page no: 1



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Annexure 9: Change of Scope

CIN : U45203MP2004SO020753

 **MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LTD.**
(Govt. of M.P. Undertaking)
45-A, Arena Hills, Bhopal-462 011
Tel.: (O) 0755-2705196, 205, 213, 216 (EPABX), 0755-2550985, Fax: 91-755-2572543
Website : www.mprdc.in

No...../MPRDC/MDR/2014 Bhopal, dated : /12/14

To,
Team Leader,
M/s Vaidya Organization
31, Indraprasth Tower,
6 MG Road, **Indore**
Fax:-0731-4050850


Sub- Development of (i) Bankhlaftata-Dogawa via Borawa -Savardevala Road (length 23.67 km) (ii) Punasa-Mundi-Singhaji(Thermal Power Plant)Road &Singhaji Bridge Approach Road (Length 13.30 km) (iii) Mundi -Devala-Khutala-Atoot NVDA (Length 28.43 km) (BOT Annuity basis) - Change of Scope Proposal

Ref: Your letter no. VO/TL/CF-RDC/80 dated 16.10.2014.

Please find enclosed the Minutes of meeting of Advisory Committee of its meeting dated 11.11.2014 and 24.11.2014 the change of scope for the work of (i) Bankhlaftata-Dogawa via Borawa -Savardevala Road (length 23.67 km) (ii) Punasa-Mundi-Singhaji(Thermal Power Plant)Road &Singhaji Bridge Approach Road (Length 13.30 km) (iii) Mundi -Devala-Khutala-Atoot NVDA (Length 28.43 km) (BOT Annuity basis).

In principle approval of change of scope as per minutes of Advisory Committee (enclosed) are hereby granted with the instructions to submit Financial implication as per provision of Concession Agreement within 15 days time.


Encl: Minutes of meeting


Chief Engineer (MDR)
MPRDC Bhopal

Encl.No. ¹³⁵²⁹...../MPRDC/MDR/2014 Bhopal, dated :2 /12/14

Copy to :-
1. General Manager, MPRDC, Indore
2. General Manager (Fin.), MPRDC, Bhopal.
3. Divisional Manager, MPRDC, Indore-1
4. M/s DBL Bankhlaftata Tollways Ltd. Bhopal with the instruction to submit financial implication as per minutes of meeting through Team Leader, Divisional Manager and General Manager MPRDC Indore within 15 days.

Encl: Minutes of meeting


Chief Engineer (MDR)
MPRDC Bhopal

Annexure Double Through quality infrastructure

MINUTES OF MEETING

Meeting of advisory committee of MPRDC for change of scope for (1) Bankhlfata-Dogawa-Via-Borawa-Savardevala (2) Mundi-Singhaji (Thermal Power Plant) and Singhaji Bridge Approach Road (3) Mundi-Devala-Khutala-Atoot NVDA. Road MDR on Annuity Basis has been held in the office of MPRDC on 11.11.2014 & 24.11.2014. Following officials were present in the meeting:-

1. Shri. A.S. Chendke, Technical Advisor, MPRDC
2. Shri Narendra Kumar, Chief Engineer (MDR)
3. Shri Atok Chaturvedi, General Manager (MDR)
4. Dr. Arun Paliwal, General Manager (Finance)
5. Shri. B.C. Tentawa, Divisional Manager, (Indore-1)
6. Shri Anil Shrivastava, AGM (MDR)
7. Shri P.C. Agarwal, Team Leader, M/s Vaidya Organisation, Indore.
8. Shri Nitin Shrivastava, Concessionaire Representative

The change of scope for above packages of MDR on BOT Annuity basis has been recommended by Independent Engineer vide its letter no. VO/PL/C/RDC/80 dated 16.10.2014. These have been discussed in meeting as below.

Change of Scope for Road Works

Name of Road: - Bankhlfata-Dogawa-Via-Borawa-Sarvardevala

Name of Village / Town	As per Schedule B				As Constructed by Concessionaire on Site				Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.		
1	2	3	4	5	6	7	8	9	10	11
Raipura	1+300	1+600	0.300	12.000	0+000 / 1+300	0+300 / 1+600	0.300	10.000	An Existing road from chainage 1 + 300 to 1 + 600 was proposed with Rigid Pavement 15 m width, but Bypass was constructed with Flexible Pavement at Raipura village. Alternative this regards can be adjusted against lesser Length of Flexible Pavement at Punasa-Mundi-Singhaji (Thermal Power Plant) Road. Change from rigid to flexible pavement. Recommended to adjust from additional rigid pavement length constructed at Thermal Power Plant Road. Lesser width is chargeable as negative variation.	Committee agreed as recommended by IE
Sonkhedi	2+150	2+350	0.200	12.000	2+140	2+340	0.200	10.000	Width attempted is less than 15mtr. Lesser work is chargeable.	
Sangawi	5+700	5+900	0.200	12.000	5+660	5+860	0.200	10.000	Width attempted is less than 15mtr. Lesser work is chargeable.	Committee agreed as recommended by IE

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Name of Road: - Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Name of Road: - Bamkhalfata-Dogawa-Via-Borawa-Sarvardevala

Construction of Drain in built up area

Sr no.	Particular	Provision of drain as per CA	Construction of drain as per actual	Reason and recommendation of IE	Decision of Committee
1	Drains in built up area	As per CA length of drains in built up area is 2x1822 =3644mtr	Actual length of drains to be measured	It is recommended to consider difference in length and size to be as per schedule B and as per work done to consider as change of scope.	Committee agreed as recommended by IE

Name of Road: - Mundi-Singhaji (Thermal Power Plant)

Name of Village/Town	As per Schedule B			As Constructed by Concessionaire on Site			Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	From (Km)	To (Km)	Length (Km)		
1	2	3	4	5	6	7	8	9
	1.Mundi-Thermal Power Plant Two lane with Hard Shoulder proposed in flexible Pavement was as following-			1.Mundi-Thermal Power Plant Two lane with Hard Shoulder Actual Construction in Rigid Pavement was as following-				
	4400	4800	400	4400	4805	405	Rigid pavement constructed as following- 1. The approach portion of Thermal Power Plant (405mtr Length). Plant authority demand rigid pavement. The proposal for same was forwarded vide this office memo no. 37 dt. 06.12.13. (Copy attached) 2. The concessionaire opt work of rigid pavement estimated vide this office memo no. 42 dt. 04.03.14 (copy attached) 3. The CC pavement as below- 7mtr wide PQC. 2mtr wide earthen shoulder on both sides. Difference of cost is adjustable against lesser work at other locations of the package.	Committee agreed as recommended by IE

m chaingae 7 + 800 posed 15 m width, structured at Utawad provision
 Committee agreed as recommended by IE

rule-B in Km. The luge was rice, the complete luge, It is ince in increased 15mtr.
 Committee agreed as recommended by IE

15 + 250 n width, ted at area is within against
 Committee agreed as recommended by IE

CA is
 Committee agreed as recommended by IE

Name of Road: - Mundi-Devala-Khutala-Atoot NVDA.

Name of Village/Town	As per Schedule B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.	From (Km)	To (Km)	Length (Km)	Paved width excluding drain in Mtr.		
1	2	3	4	5	6	7	8	9	10	11
Mundi	0+000	0+350	0.350	12.000	0+000	0+350	0.350	10.000	Construction of road in built up stretches as per available width . it is recommended to considered lesser work is chargeable	Committee agreed as recommended by IE
Chichli Khurd	2+600	2+800	0.200	12.000	2+600	2+750	0.150	10.000		
Bamori	6+750	7+100	0.350	12.000	6+740	7+100	0.360	10.000		
Jalawa	10+400	11+000	0.600	12.000	10+350	10+950	0.600	10.000		
Dewala	16+200	16+400	0.200	12.000	16+130	16+330	0.200	10.000		
Khutala	18+630	19+200	0.570	12.000	18+600	19+100	0.500	10.000		
Dood	21+300	22+000	0.700	12.000	21+300	22+000	0.700	10.000		
Atoot	24+900	25+580	0.680	12.000	24+860	25+370	0.510	10.000		
Atoot	25+700	25+900	0.200	12.000	25+370	25+581	0.211	10.000		
Atoot					25+641	25+890	0.249	10.000		
Atoot					25+970	26+000	0.300	10.000		
Total			3.850				4.130			

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Construction of Drain in built up area

Sr no.	Particular	Provision of drain as per CA	Construction of drain as per actual	Reason and recommendation of IE	Decision of Committee
1	Drains in built up area	As per CA length of drains in built up area is 2x3850 = 7700mtr	Actual length of drains to be measured	It is recommended to consider difference in length and size to be as per schedule B and as per work done to consider as change of scope	Committee agreed as recommended by IE

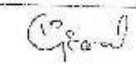
Change of Scope Structure
Bankhlfata-Dogawa-Via-Borawa-Sarvardevala

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
1	02+456 (Existing Chainage) (HPC) 1x0.40.	02+463 (Proposed chainage) Reconstruction (HPC) 1x1.2.	02+484 (P & P Chainage) Retained (HPC). Width 10mtr.	This retained culvert adjusted against additional culvert at ch. 11+749 (S no 4) No variation is proposed.	Committee agreed as recommended by IE
2	06+015 (Existing Chainage) (HPC) 3x1.0.	06+015 (Proposed chainage) Reconstruction (HPC) 3x1.2.	06+015 (P & P Chainage) Retained (HPC).	Proposed reconstruction not done. Negative variation recommended.	Committee agreed as recommended by IE
3	10+200 (Existing Chainage) (HPC) 1x0.40.	10+413 (Proposed chainage) Reconstruction (HPC) 1x1.2.	10+413 (P & P Chainage) Retained (HPC).	This retained culvert adjusted against additional culvert at ch. 12+414 (S no 5). No variation is proposed.	Committee agreed as recommended by IE
4	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	11+749 (P & P Chainage) New Construction (HPC) 1x1.2	This additional culvert adjusted against retained culvert at ch. 2+484 (S no 1). No variation is proposed.	Committee agreed as recommended by IE
5	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	12+414 (P & P Chainage) New Construction (HPC) 1x1.2	This additional culvert adjusted against retained culvert at ch. 10+413(S no 3). No variation is proposed.	Committee agreed as recommended by IE

Bankhlfata-Dogawa-Via-Borawa-Sarvardevala

6	12+743 (Existing Chainage) (HPC)_1x1.0.	12+742 (Proposed chainage) Widening (HPC)_1x1.0.	12+742 (Proposed chainage) Reconstruction (HPC)_1x1.2.	Proposed widening changed to reconstruction due to poor condition of existing structure. Positive variation recommended.	Committee agreed as recommended by IE
7	12+924 (Existing Chainage) (HPC)_1x1.0.	12+886 (Proposed chainage) Widening (HPC)_1x1.0. Existing width 11.37mtr.	12+886 (P & P Chainage) Retained (HPC).	Proposed widening not done. Negative variation recommended.	Committee agreed as recommended by IE
8	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	12+996 (P & P Chainage) New Construction (HPC)_1x1.2	Additional CD not payable. No variation is proposed.	Committee agreed as recommended by IE
9	14+095 (Existing Chainage) (HPC)_4x1.0. Causeway.	14+095 (Existing Chainage) (HPC)_5x1.2.	Schedule Mistake. Not Constructed.	Negative variation recommended. No construct on needed as minor bridge already constructed.	Committee agreed as recommended by IE
10	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	14+490 (P & P Chainage) New Construction (HPC)_1x1.2	No variation proposed as per note given in schedule B	Committee agreed as recommended by IE
11	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	14+976 (P & P Chainage) New Construction (HPC)_1x1.2	New Construction adjust against at retained CD at ch. 4+090 on Thermal Power Plant (S. No. 3). No variation proposed.	Committee agreed as recommended by IE
12	17+250 (Existing Chainage) (HPC)_1x1.0.	17+212 (Proposed chainage) Widening (HPC)_1x1.0.	16+968 (Proposed Chainage) New Construction (HPC).	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE





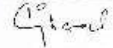
Bankhlfata-Dogawa-Via-Borawa-Sarvardevala

20	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	23+520 (Proposed chainage) New Construction (HPC) _1x1.2.	No variation proposed as per note given in schedule B..	Committee agreed as recommended by IE
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**Change of Scope Structure
Mundi-Thermal Power Road Project.**

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
1	03+203 (Existing Chainage) (HPC) _4x1.0.	01+398 (Proposed chainage) Reconstruction (HPC) _2x1.2.	Schedule Mistake Not Constructed.	Not Constructed. Adjusted against CD at ch. 09+069 (S no 15), Bankhlfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
2	03+054 (Existing Chainage) (HPC) _1x1.0.	01+604 (Proposed chainage) Reconstruction (HPC) _2x1.2.	01+597 (Proposed chainage) Reconstruction (BC) _1x4.D.	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE
3	04+090 HPC (Proposed Chainage)	04+090 (Proposed chainage) New Construction (HPC) _1x1.2.	04+090 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 14+976 (S no 11), Bankhlfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
4	There was no structure at existing chainage.	04+480 (Proposed chainage) New Construction (HPC) _1x1.2.	04+480 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 17+840 (S no 13), Bankhlfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
5	There was no structure at existing chainage.	04+581 (Proposed chainage) New Construction (HPC) _1x1.2.	04+581 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 18+180 (S no 14), Bankhlfata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE

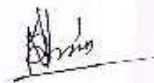


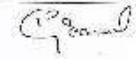


6	There was no structure at existing chainage.	04+730 (Proposed chainage) New Construction (HPC) 1x1.2.	04+730 (P & P Chainage) Not Constructed (HPC).	Not Constructed. Adjusted against CD at ch. 19+250 (S no 16) Bankhlafata Dogawa Road. No variation is proposed.	Committee agreed as recommended by IE
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**Change of Scope Structure
Singhaji Bridge Approach Road**

Sr. No.	Existing detail as per schedule-A	Development proposal as per Schedule-B	Actual construction by concessionaire at site	Recommendation of Independent Engineer	Decision of committee
1	00+000 (Existing Chainage) (HPC) 1x0.30.	0+000 (Proposed chainage) Reconstruction (HPC) 2x1.2.	00+326 (P & P Chainage) Retained (HPC).	Retained culvert adjusted with additional culvert at ch. 4+850 (Sr. No. 2) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
2	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	00+523 (P & P Chainage) Widening (HPC) 1x1.0.	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE
3	00+385 Slab Culvert	00+384 (Proposed chainage) Reconstruction (HPC) 2x1.2.	00+607 (P & P Chainage) Retained (BC).	Retained culvert adjusted against additional culvert at ch. 10+116 (Sr. No. 3) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
4	01+963 (Existing Chainage) (HPC) 1x1.00.	01+963 (Proposed chainage) Reconstruction (HPC) 2x1.2.	02+068 (P & P Chainage) Retained (HPC) 1x1.0.	Retained culvert adjusted against additional culvert at ch. 16+025 (Sr. No. 7) on Mundi Atoot Road. No variation is Recommended.	Committee agreed as recommended by IE
5		Ch. 02+947 New construction HPC 1x1.2	HPC Not constructed	Negative variation is recommended	Committee agreed as recommended by IE





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**Change of Scope Structure
Mundi-Atoot Road Project.**

19	27+369 (Existing Chainage) (HPC) 1x1.0.	27+322 (Proposed Chainage) Reconstruction (SC) 1x1.40	27+322 (Proposed chainage) Reconstruction (HPC) 1x1.2.	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE
20	There was no structure at existing chainage.	There was a defined Nallah at this Chainage but no CD structure proposed.	28+360 (P & P Chainage) New Construction (HPC) 1x1.2	No variation proposed as per note given in schedule B.	Committee agreed as recommended by IE

In-principle approval under change of scope is recommended for above works as per remarks of last column. Further it has been instructed to Independent Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively.

 (Nitin Shrivastava) Concessionaire Representative
 (P.C. Agarwal) Team Leader M/s Vaidya Organisation, MPRTC Bhopal Indore.
 (Anil Shrivastava) AGM (MDR) MPRTC Bhopal
 (Shri. B.C. Tentawal) Divisional Manager Indore-1
 (Anil Chaturvedi) GM (MDR.) MPRTC Bhopal
 (Arun Paliwal) GM (Finance) MPRTC Bhopal
 (Meghendra Kumar) Chief Engineer MPRTC Bhopal
 (A.S. Chendke) Technical Advisor MPRTC Bhopal