

Development of Sitamau-Basai-Suwasara Major District Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

TECHNICAL DUE DILIGENCE REPORT



FEBRUARY, 2021

SUBMITTED BY



RUKY PROJECTS PRIVATE LIMITED Hyderabad – 500 072 www.rukyprojects.com



Development of Sitamau-Basai-Suwasara Major District Road in the State of Madhya Pradesh on BOT (Toll+Annuity) Basis

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CHAPTER 1. INTRODUCTION

1.1 General

DBL SITAMAU SUWASARA TOLLWAYS LIMITED (herein after referred to as the "Concessionaire") had augmented the existing road "Sitamau-Basai-Suwasara" section of MDR in the state of Madhya Pradesh, in accordance with the provisions of the Concession Agreement (CA) executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the "MPRDCL") on 5th December, 2011.

Project road starts at Sitamau (Km.0.000) and ends at Suwasara (Km.34.973) passing through Tilrod, Surjani, Belara and Basai in the state of Madhya Pradesh on Design, Build, Finance, Operate and Transfer (DBFOT) Toll + Annuity basis. Project Location map is given at Fig 1-1.



Figure 1.1: Project Location Map



SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL SITAMAU SUWASARA TOLLWAYS LIMITED vide agreement dated 26th March 2018

SHREM FINANCIAL PRIVATE LIMITED (SFPL) appointed RUKY Projects Pvt. Ltd. as consultants for detailed Technical Due Diligence Services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements if any and to review the traffic potential and to estimate the projected Toll Collection etc.

1.2 Project Data:

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

S. No.	Particulars	Details
1	Name of the project	Construction, Operation and Maintenance of Sitamau-Basai-Suwasara section of MDR on DBFOT (Design, Build, Finance, Operate and Transfer) on Toll plus Annuity basis.
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation Limited
4	Name of the Concessionaire	DBL SITAMAU SUWASARA TOLLWAYS LIMITED
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Date of LOA	17.10.2011
7	Date of Agreement	05.12.2011
8	Design length as per Schedule B of CA	Approximately 34.973 Kms.
9	Length omitted under negative Change in Scope	-0.014 Kms.
10	Actual length constructed	34.959 Kms.
11	Project lane configuration	2 Lane
12	EPC cost	55.00 Cr
13	Nature of contract	BOT (Toll + Annuity)
14	Toll collected by	Concessionaire
15	Concession period	15 years from the appointed date
16	Appointed date	04.05.2012
17	Concession end date	03.05.2027
18	Construction period	730 days from the appointed date.
19	Schedule completion date	04.05.2014
20	Date of issuance of Provisional Certificate (Commercial operation date)	28.03.2013
21	Date of issuance of Completion Certificate	15.06.2013

Table 1.1: Project Data

S. No.	Particulars	Details
22	Annuity amount (every six months)	3.69 Cr
23	Total number of annuities payable	26 Nos.
24	First annuity payment date	28.09.2013
25	Total number of annuity paid	15 Nos.

1.3 Scope of consultancy services

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

- Review of various contractual documents
- Collection of historic/past toll revenue data
- Collection of historic/past classified Traffic data from toll plaza and to estimate the projected traffic to arrive at revenue projections.
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, tolling system etc., of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout review of tolling system to evaluate the efficiency and functionality of tolling system and to identify and give suggestions to improve if any setbacks in the system.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.
- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.



CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project

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

S. No	Particulars	As per CA	As per COS	As per Site
1	Total project length	34.973 Kms.	-0.014 Kms.	34.959 Kms.
2	Four lane divided carriageway	0.550 m		0.550 Kms.
3	Two lane with paved shoulder	2.573 Kms.	-0.014 Kms.	2.559 Kms.
4	Bypass realignment	0.200 m		0.200 Kms.
5	Intermediate lane with granular shoulder	31.650 Kms.		31.650 Kms.
6	Rigid pavement-two lane with paved shoulder	2.123 Kms.	-0.014 Kms	2.109 Kms.
7	Flexible pavement	32.850 Kms.		32.850 Kms.
8	Toll plaza	1 No.		1 No.
9	Bus bays / Bus shelters	24 Nos.		24 Nos.
10	Truck lay bays			
11	Major junction	1 No.		1 No.
12	Minor Junctions	11 no.		11 no.
13	Major Bridges	2 No.		2 No.
14	Minor Bridges	7 No.		7 No.
15	Pipe Culverts	25 Nos.	+1,-1	25 Nos.
16	Slab/Box Culverts	5 Nos.		5 Nos.

2.2 Typical Cross Section (TCS) Schedule

The Concessionaire has followed the Typical Cross Sections shown below as per schedule, during the construction.



Figure 2.1: (TCS 1) Intermediate Lane with Hard Shoulder



















As built drawings are verified and the pavement crust is found in accordance with TCS. TCS schedule is provided below.

S. No.	From (Km.)	To (Km.)	Length (Kms.)	Type of TCS
1	0+000	0+550	0.550	TCS 2
2	0+550	7+450	6.900	TCS 1
3	7+450	8+050	0.600	TCS 4A
4	8+050	9+600	1.550	TCS 1
5	9+600	9+800	0.200	TCS 4A
6	9+800	12+270	2.470	TCS 1
7	12+270	12+70	0.200	TCS 3
8	12+470	14+400	1.930	TCS 1
9	14+400	14+650	0.250	TCS 3
10	14+650	16+480	1.830	TCS 1
11	16+480	16+790	0.310	TCS 4A
12	16+790	21+770	4.980	TCS 1
13	21+770	21+970	0.200	TCS 4A
14	21+970	33+750	11.780	TCS 1
15	33+750	33+850	0.100	TCS 4B
16	33+850	33+960	0.110	TCS 3
17	33+960	34+000	0.040	TCS 4B
18	34+000	34+386	0.386	TCS 1
19	34+386	34+959	0.573	TCS 4B

Table 2.2: TCS Schedule





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2.3 Road Side Drainage

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

2.4 Service Roads:

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

2.5 Bypass/Realignment:

Realignment is constructed from Km 22+600 to Km 22+800 as per Provisions of Schedule B of the CA.

2.6 Intersections:

As per provisions of Schedule B of the CA, 1 Major Intersection and 11 Minor Intersections are provided. Details are given below.

rubic 2.5. Summary of Sunctions					
S. No.	Chainage (Km.)	Type of junction	Type of Cross Road		
Major Intersection					
1 0+000 T		Т	SH 14		
	Mi	inor Intersection			
1	0+600	Т	Village Road		
2	7+930	Т	Village Road		
3	12+338	Х	Village Road		
4	19+540	Т	Village Road		
5	22+800	Т	Village Road		
6	26+059	Т	Village Road		
7	26+120	Т	Village Road		
8	28+200	Х	Village Road		
9	33+245	Х	Village Road		
10	34+025	Т	Village Road		
11	34+973	Х	MDR		

Table 2.3: Summary of Junctions

2.7 Grade Separated Structures and underpasses:

There are no Grade separated structures in the Project, as per provisions of Schedule B of the CA.

2.8 Road Under Bridge:

There is one existing RUB, which was Retained at Km 33+911 as per provisions of Schedule B of the CA.

2.9 Summary of the Carriageway Details:

The details of Pavement and Carriageway type are shown in the following table.

	, and a second potential potential and a second potential and a seco						
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	Remarks			
1	2 Lane with Earthen shoulder	31.826		Fig 2.1 of Schedule D of CA			
2	2 Lane with Paved shoulder	0.560	2.023	Fig 2.3 of Schedule D of CA			
3	4 Lane	0.550		Fig 2.2 of Schedule D of CA			
4	Total Length of the Project	34.959 Kms.					
	TYPE OF ALIGNMENT						
5	New Alignment						
6	Realignment	0+200					
7	Strengthening						
8	Reconstruction	32.736	2.023				
9	Total Length of the Project	34.959 Kms.					

2.10 Summary of Structures

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

S. No.	Description	RUB	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	1	2		3	
2	Widening			3	3	4
3	Reconstruction			4	15	1
4	New				4	
5	Improvement					
	Total	1	2	7	25	5

Table 2.5: Summary of Structures

2.11 Toll Plazas

As per Schedule C of the CA provisions, one Toll Plaza has been constructed at Ch. 4+500. Salient features of Toll Plaza are provided below.

- Each side comprises of, one normal lane and one extra wide lane.
- The lane width in normal lanes is 3.2 m and extra lane is of 4.5 m width.
- Single canopy is provided to cover the toll lanes.
- Toll plaza has been constructed as per standards set forth in Schedule D of CA having facilities like lighting, water supply and firefighting Arrangements.
- Closed circuit cameras are installed and monitored in administrative building.

2.12 Bus shelters

As per the provisions of Schedule C of the CA, 24 Nos. Bus shelters are provided in the entire length of Project. Details such as Chainage Location and Name of Village are listed in the following table.

S. No.	Chainage (Km.)	Side*	Remarks	S. No.	Chainage (Km.)	Side*	Remarks
1	3+200	LHS	Palint	13	19+500	LHS	Kejadiya
2	3+300	RHS	Palint	14	19+600	RHS	Mandsaur
3	7+720	LHS	Titrod	15	22+650	LHS	Mandsaur
4	7+800	RHS	Titrod	16	22+500	RHS	Khamkhed
5	11+000	LHS	Devchiri	17	26+050	RHS	Khamkhed
6	11+200	RHS	Devchiri	18	26+150	LHS	Kantiya
7	12+280	LHS	Belara	19	28+150	RHS	Kantiya
8	12+380	RHS	Belara	20	28+250	LHS	Dhamniya
9	14+500	LHS	Belara	21	33+150	RHS	Dhamniya
10	14+600	RHS	Dhikaliya	22	33+320	LHS	Gangadhar
11	16+500	LHS	Dhikaliya	23	34+680	RHS	Gangadhar
12	16+650	RHS	Kejadiya	24	34+750	LHS	Suwasara

		_		
Table	2.6:	Bus	shelters	details

*Note: LHS-Left Hand Side, RHS-Right Hand Side

2.13 Other Project Facilities Provided as per Schedule C of the CA

- Roadside furniture: Sign boards, kilometer stones, road marking and object/hazard markers are provided in accordance with IRC-SP: 73-2007.
- Traffic safety devices: W beam crash barriers, parapet walls are provided as per the provisions of Schedule C of the CA.
- Landscaping: provided at toll plaza location and being maintained
- Medical Aid Post: Provided at toll plaza location and operational.
- Highway Lighting: Highway lighting is provided at Toll Plaza location and is functional.



Km. 0+000

Km. 4+000

Mnow A



Km. 3+600



Km. 11+400



Km. 10+400



Km. 15+000



Km. 15+000

Km. 26+600

Figure 2.7: Photos Representing Project Facilities.



CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

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

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in the following table. Representative photographs are given below to have a clear picture of the Project.

S. No.	Features	Remarks		
1	Terrain	Plain and Rolling Terrain		
2	Land Use	Built Up 3 %, Agriculture 64% and Barren 22%		
3	Two lane length	34.409 Kms.		
4	Four lane length	0.550 kms.		
5	Earthen shoulder	1.0 m to 1.5 m width on site		
6	Realignment	200 m		
7	Junctions	12 Nos.		
8	Toll Plaza	Km. 4+500		
9	Sign boards	Sign boards are provided as per requirement		
10	Road Markings	Lane markings are provided as per requirement		
11	Bus Bays /shelters	24 Nos.		
12	Street Lighting	Highway lighting provided as per requirement		
13	Avenue plantation	Provided		

Table 3.1: Road Inventory

3.3 Pavement Condition:

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

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

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



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

3.4 **Pavement Condition Survey:**

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

The Pavement Condition is measured under the following sub-heads:

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

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

Table 3.2: Pavement condition summary						
Chaina	ge	Longth (lync)	Condition			
From (km.)	To (km.)	Length (kms.)	Condition			
0+000	34+973	34.973	Good			





Km. 2+200

Km. 11+400

Mnom 🖄



Km. 8+400

Km. 16+200



Km. 27+800 Figure 3.1: Representative pavement condition photos

CHAPTER 4. INVENTORY AND CONDITION OF STRUCTURES

4.1 General Assessment and Condition of the Structures:

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

4.2 Inventory of Structures :

The Inventory of the Structures at site is as follows.

S. No.	Type of Structure Numbers				
1	Major bridges	2 Nos.			
2	Minor Bridge	7 Nos.			
3	Pipe culverts	25 Nos.			
4	Slab/Box Culverts	5 Nos.			

Table 4.1: List of Structures

The Super structure of Major bridges is of RCC Balanced cantilever type resting on RCC single/twin circular column type piers and abutments supported by well foundations. The Super structure of Minor Bridge is of RCC solid slab and the sub-structures are of RCC/PCC conventional wall type Piers and Abutments supported on open foundations. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2.** The culverts observed along the project road are mainly of two types viz. pipe culverts and RCC slab/box culverts. The condition of most of the Culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3**.

4.3 Details of Major Bridges:

The total length of the major bridge at Km 20+879 is 110.0m with 4 spans. The superstructure consists of RCC Box girder built as balanced cantilever. Each pier consists of single RCC circular column with a hammer head capping beam whereas abutment is regular RCC wall type abutment. Well foundations have been constructed for all piers and abutments. Superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

The total length of the major bridge at Km 21+089 is 294.6m with 13 spans. The superstructure consists of RCC Box girder built as balanced cantilever. Each pier consists of twin RCC circular columns connected with a capping beam and abutments are of wall type with CRS Masonry. Well foundations have been constructed for piers and abutments. Superstructure is seated on elastomeric bearings. Expansion joints are of Buried type. RCC railings have been provided on both sides of the deck.

S. No.	Chainage	Span Arrangement	Total Length of Bridge (m)
1	Km.20+879	3x32m+1x14m.	110.0
2	Km.21+089	2x18.6m+11x23.4m.	294.6

Table 4.2: List of Major Bridges

The condition of the superstructure and substructure is good.



Km. 21+089 Figure 4.1: Representative photos of Major Bridge

4.4 Details of Minor Bridges

There are 7 minor bridges in the project stretch. The type of superstructure for minor bridges is RCC solid slab and the substructure is PCC conventional wall type supported on open foundations. Expansion joints are buried type and bearings are of Tar Paper and neoprene bearings. RCC crash barriers are provided on all structures.

S. No.	Chainage (Km.)	Span Arrangement	Total Length of Bridge (m)	Description
1	0+818	1x6.0 m	6.0	The structure has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
2	1+596	2x3.65	7.3	The Minor Bridge has RCC solid slab superstructure supported on CRM/RCC wall type piers and abutments. Other features are Tar Paper Bearings and buried type expansion joints, Brick Masonry parapet, bituminous wearing coat.
3	4+030	1x6.6m	6.6	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar Paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
4	8+578	2x7.3m	14.6	The Minor Bridge has RCC solid slab superstructure supported on PCC/RCC wall type piers and abutments. Other features are Tar Paper Bearings and buried type expansion joints, RCC crash barrier, bituminous wearing coat.
5	10+083	2x7.7m	15.4	It has RCC solid slab superstructure supported on PCC/RCC wall type piers and abutments. Other features are Tar paper Bearings and

Table 4.3: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span Arrangement	Total Length of Bridge (m)	Description
				buried type expansion joints, RCC crash barrier, bituminous wearing coat.
6	12+656	1x6.7m	6.7	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, Brick Masonry parapet, bituminous wearing coat.
7	21+650	1x8.4m	8.4	The Minor Bridge has RCC solid slab superstructure supported on RCC wall type abutments. Other features are Tar paper Bearings and buried type expansion joints, Brick Masonry parapet wall, bituminous wearing coat



Km. 4+030

Km. 10+083

Figure 4.2: Representative photos of minor bridges

4.5 Details of culverts

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

General Description of the Slab/Box Culverts

The details of the culverts are given below.

Table 4.4. LIST OF SIdD/ BOX CUIVERTS						
S. No.	Chainage (Km.)	Span				
1	7+660	1x 3.6m.				
2	10+873	1 x 3.6m.				
3	13+150	1 x 3.8m.				
4	21+433	1x 2.0m.				
5	22+070	1x 3.4m.				

Table 4.4: List of Slab/Box Culverts

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



Km: 21+433 Figure 4.3: Representative photo of Box Culvert

General Description of the Pipe Culverts

The details of the pipe culverts are as given below.

S. No.	Chainage (Km.)	No. of Rows& Dia (m)		SI. No.	Chainage @Km.	No. of Rows& Dia(m)	
1	0+400	1 x 1.0		14	16+715	1x1.2	
2	2+890	1 x 1.2		15	16+780	2x1.2	
3	3+060	2 x 1.2		16	16+870	1 x 1.2	
4	9+693	1 x 1.2		17	18+388	1 x 1.0	
5	11+792	2 x 0.9		18	19+736	1 x 1.0	
6	11+950	1 x 1.2		19	19+898	1 x 1.0	
7	12+638	1 x 1.2		20	19+995	1x1.2	
8	13+400	1 x 1.2		21	22+790	1 x 1.2	
9	14+455	1 x 1.2		22	23+427	1 x 1.2	
10	14+630	1 x 1.2		23	24+980	1 x 1.2	
11	14+737	1 x 1.2		24	25+350	1 x 1.2	
12	15+215	2 x 1.0		25	26+560	1 x 1.2	
13	16+489	1 x 1.2					

Table 4.5: List of Pipe Culverts



Condition of the Pipe Culverts

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



CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULE

5.1 General

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

5.2 Pavement design

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

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

Review of Pavement Design

The Pavement crust details as per the approved pavement design of the project are given below:

S. No.	Description/ Pavement layer	Design Parameters	Adopted values
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	8 years for BT 15 years for Granular	8 years for BT 15 years for Granular
3	Design Traffic (MSA)	4 MSA for BT 9 MSA for Granular	5 MSA for BT 10 MSA for Granular
4	Surface course (SDBC)	25 mm	25 mm
5	Binder course (DBM)	50 mm	50 mm
6	Base course (WMM)	250 mm	250 mm
7	Sub Base course (GSB)	150 mm	200 mm

 Table 5.1: Flexible Pavement Design summary

5.3 Validation of Pavement design

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

Pavement design validation is carried out as per actual traffic from COD. As per IRC 37, Vehicle Damage Factor (VDF), Distribution of commercial vehicles and growth rate values are 3.5, 0.75 and 5% respectively. Summary is given below.

	AADT in Vehicles CVPD		MCA	CNACA		Bomarka				
Fifedi	Car	LCV	BUS	2-AT	MAV	(Veh.)	IVISA	CIVISA	rear	Remarks
2014	519	233	50	30	88	400	0.38	0.38	1	Actual
2015	922	343	61	46	143	593	0.57	0.95	2	Actual
2016	916	314	52	40	112	517	0.50	1.45	3	Actual
2017	849	343	52	37	133	565	0.54	1.99	4	Actual
2018	775	345	52	37	138	571	0.55	2.54	5	Actual
2019	971	429	55	41	145	670	0.64	3.18	6	Actual
2020	1127	387	56	43	139	625	0.60	3.78	7	Actual
2021	1183	407	58	45	146	657	0.63	4.41	8	Projected
2022	1243	427	61	48	154	690	0.66	5.07	9	Projected
2023	1305	449	64	50	161	724	0.69	5.76	10	Projected
2024	1370	471	67	52	169	760	0.73	6.49	11	Projected
2025	1439	495	71	55	178	798	0.76	7.25	12	Projected
2026	1510	519	74	58	187	838	0.80	8.06	13	Projected
2027	1586	545	78	61	196	880	0.84	8.90	14	Projected
2028	1665	572	82	64	206	924	0.89	9.79	15	Projected

Table 5.2: Real Time Traffic from COD and Projected Traffic Current years with 5% growth for CMSA

Based on the above actual traffic, estimated MSA at 8 years and 15 years are 4.41,9.79 respectively. Traffic considered in pavement design(5MSA,10MSA) is more than estimated traffic based on above actual traffic. Hence the pavement design adopted is found in order.

Details of Pavement design for Rigid Pavement are as follows:

Table 5.5. Rigid Favernent De	Table 3.3. Right avenient Design for Fon Haza						
Description	Design/Adopted Thickness						
CBR of sub grade	10 %						
Design life in years	30						
Pavement Quality Concrete (PQC) - mm	250/ 280						
Dry Lean Concrete (DLC) - mm	150						
Drainage Layer (GSB) - (mm)	150						
Diameter of Dowel Bar (mm)	32						
Length of Dowel Bar (mm)	500						
Spacing of Dowel Bars (mm)	280						
Diameter of Tie Bar (mm)	12 (Deformed)						
Length of Tie Bar (mm)	640						
Spacing of Tie Bars (mm)	560						

Table 5.3: Rigid Pavement Design for Toll Plaza

The Pavement crust has been designed according to IRC specification and found in order, the adopted/ Constructed pavement layer thickness is adequately provided than actual/designed thickness.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic of 5 MSA and 10 MSA for a design life of 8 years for Bituminous layers (up to end of the year 2020) and 15 years for granular layers respectively (up to the end of the year 2027), whereas the actual traffic is 4 MSA and 9 MSA for 8 years and 15 years



respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

However, it is recommended to carry out traffic survey, pavement condition and pavement strength evaluation prior to end of concession period to evaluate the requirement of overlay.

5.5 Maintenance/ Overlay schedule

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

Routine maintenance - Every year

Periodic Renewal for Flexible Pavement – Proposed on or before 2020(However overlay was done in 2018). Next over lay is scheduled in 2025.

Periodic Maintenance for Rigid Pavement – re-texturing shall be done at least once in 10 years from construction (as per IRC 58-2015).

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

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

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

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

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

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				

Table 6.1: Referred IRC Publications

6.2 Road Safety Audit

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

Table 6.2: Safety Items								
S. No.	lte	Status	Condition					
		Chevron signs	Available	Good				
1		Village sign Board	Available	Good				
	Sign Boards	Informatory Boards	Available	Good				
		Object Hazard Markers at	Available	Good				
		culverts						
2	Road Marking	Studs & Lane Marking	Available	Fair				
3	Metal Beam Crash Barriers	At High Embankments	Available	Good				

This Project Section is part of an important corridor. It is the Concessionaire's duty and responsibility to provide safe road for the commuters by assuring safe and hindrance free movement for both Traffic and Pedestrians along urban locations & habitations.

Few Observations on the road furniture in safety aspects for the project road are mentioned below:

- At few places reflectors were missing on the sign boards and few sign boards were also damaged.
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly



Km. 0+000

Km. 2+000



Km. 5+200

Km. 6+000

Project: Development of Sitamau - Suwasara Road of MDR (SSTL) in the state of Madhya Pradesh on BOT (Toll + Annuity) Basis

Mnom X







Km. 11+200



Km. 11+400

Km. 12+400



Km. 14+200

Km. 32+600



Km. 16+200

Km. 34+900





6.3 Conclusion

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



CHAPTER 7. TOLL PLAZA & HTMS

7.1 General

There is one toll plaza on the project road at Ch. 4+500. Each side comprises of 1 normal lanes, 1 extra wide lane. The lane width in normal lanes is 3.2 m and in extra wide lane is 4.5 m. The width of islands provided is 1.8 m. The single canopy is provided to cover the toll lanes. Toll plaza building is G+1 floor building which houses control room, UPS and Pantry.

7.2 Tolling Equipment and Control Room Equipment's

List of equipment provided at toll plaza and control room is given below.

S. No.	Description	No.
1	OHLS	4 Nos
2	LPIC	4 Nos
3	AVC	2 Nos
4	RFID	4 Nos
5	Printer	1 No
6	Booth camera	1 No
7	Intercom (Internal)	4 Nos
8	Voilation Alarm	4 Nos
9	UFD	1 No
10	Server	1 No
11	PoE switch	1 No
12	NVR	1 No
13	PTZ Camera	1 No

Table 7.1: List of Equipment at toll plaz	a
Table 7.1. List of Equipment at ton plaz	.a

7.3 Vehicles

The list of vehicles, which were observed at site for operation of highway and toll plaza, is presented below. Table 7.2: List of Vehicles

S. No.	No.	
1	Patrol vehicle	1
2	Ambulance	1
3	Water tanker	1

<image>

Figure 7.1: Km. 4+500 Toll Plaza



CHAPTER 8. TRAFFIC CENSUS AND TOLL REVENUE

8.1 Traffic Census

In accordance with clause 22.1, the Concessionaire shall install, maintain and operate electronic/computerized traffic counters at each of the Toll Plazas and collect data relating to the number and types of vehicles using the Project Highway. A weekly statement of such data shall be complied and furnished forthwith by the Concessionaire to MPRDC substantially in the form specified in Schedule N of CA.

Accordingly, the Concessionaire provided the details. Based on the data made available the summarized annual classified Traffic census details for the past five years are provided in Table 8.1 below. The Actual traffic data recorded below has been taken as a basis to calculate AACGR % (Average Annual Compound Growth Rate).

FY Year	Car	LCV	Bus	Truck	MAV	Total Traffic
2016	335426	114816	19144	14569	40864	524819
2017	309738	125026	19049	13495	48666	515974
2018	282830	125810	19160	13383	50206	491389
2019	354433	156570	20231	14876	52806	598916
2020	412525	141817	20318	15765	50970	641395
	5.63%					

Table 8.1: Year wise Traffic (Vehicles) Details

*AACGR- Annual Average Compound Growth Rate

8.2 Actual Revenue Collection

In accordance with clause 19.5, "During the operation period, the Concessionaire shall furnish to MRPDC within 7 days of completion of each month, a statement of fee substantially in the form set forth in Schedule-M (Monthly fee statement)". As per provisions of CA the concessionaire submitted monthly fee statement and the summary of form submitted under Schedule M during the financial year 2019-20 is given under as Table 8-2.

Description	Car	Car(pass)	LCV	Bus	Truck	MAV	Total
In Nos.	230861	2318	112395	18344	15123	50313	429354
Toll Revenue collection in Rs.	4617220	185407	5619750	1886605	1856775	12112205	26277962

The figures shown in Table 8-1 are as per the Real time traffic data on project road for the past five years and the growth rate is calculated to be 5.63%. It is pertinent to note that the figures given in table 8-1 are inclusive of exempted /non tollable traffic.

The figures shown in Table 8-2 are actual tollable traffic based on which the toll revenue collected and is excluding of exempted/non tollable traffic. For the realistic estimate of the traffic growth and projected revenue calculation actual traffic based on which FY 2019-20 revenue collected (**Table 8.2**) is

considered as a base year traffic and the projected traffic growth rate is restricted to 5% even though the growth as per **Table 8.1** is >5%.

Based on the base year traffic and growth rate as explained above traffic projections from year 2019-20 to till end of Concession period toll plaza wise are calculated and summarized below in Table 8.3.

FY		AAD	「 in Ve	hicles	5		AADT in PCU						
Year	Car	LCV	BUS	2- AT	MAV	(Veh.)	Car	LCV	BUS	2- AT	MAV	(PCU)	Remarks
PCU Factor				1	1.5	3	3	4.5					
2020	639	308	50	41	138	537	639	462	151	124	620	1357	Actual
2021	671	323	53	44	145	564	671	485	158	131	651	1425	Projected
2022	704	339	55	46	152	593	704	509	166	137	684	1496	Projected
2023	740	356	58	48	160	622	740	535	175	144	718	1571	Projected
2024	777	374	61	50	168	653	777	561	183	151	754	1650	Projected
2025	815	393	64	53	176	686	815	590	192	159	792	1732	Projected
2026	856	413	67	56	185	720	856	619	202	167	831	1819	Projected
2027	899	433	71	58	194	756	899	650	212	175	873	1910	Projected
2028	944	455	74	61	204	794	944	682	223	184	916	2005	Projected

Table	8.3:	Pro	iected	traffic
Table	0.0.		Jeccea	

*CVPD: Commercial vehicle per day (LCV+BUS+2 AT+MAV)

8.3 **Toll Revenue Calculations**

The toll revenue for horizon year is calculated based on the input from the above data, actual toll rates collected on base year (2019-20), with Traffic growth, WPI growth and toll efficiency has been assumed 5%, 4% and 100% respectively and other inputs considered in revenue calculations is given in Table 8.4

Table 8.4: Toll Revenue inputs				
Particular	Toll plaza 1			
Location	Km. 4+500			
4 lane length in kms.	0			
2 lane length in kms.	35			
Agreement Date	05-12-2011			
Appointed Date	04-05-2012			
Concession period	15 years			
Commercial operation date	15-06-2013			
Concession End Date	03-05-2027			
Traffic study year	2020			
Vehicle Type	AADT (Veh.)			
Car/Jeep/Van	639			
2-axle Bus	308			
LCV/LGV	50			

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Particular	Toll plaza 1
2A-Truck	41
MAV (2A-6A)	138
Growth Rate (%)	5%

The split trip type, based on the available toll data from Concessionaire is used to derive the annual toll collection for the plaza. The revenue estimated and presented below. Detailed toll revenue estimation is given in **ANNEXURE 4.**

Financial Year	Annual Revenue of TP1 @ Km. 4+500	Remarks		
2019-20	262.780	Actual		
2020-21	281.967	Projected		
2021-22	309.631	Projected		
2022-23	332.984	Projected		
2023-24	378.761	Projected		
2024-25	406.230	Projected		
2025-26	434.642	Projected		
2026-27	472.397	Projected		
2027-28	45.754	33 Days		

Table 8.5: Toll Revenue Estimated (in Rs. lakhs)
CHAPTER 9. OPERATION AND MAINTENANCE

9.1 General

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

9.2 Inspection

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

- **Visual Inspection:** Visual inspections are done at frequent intervals, and are intended to determine any potential traffic hazards to the road user or hampering the aesthetics of the project stretch. Visual inspections are meant to identify defects that constitute an imminent or immediate hazard to the public.
- **Detailed Inspection:** Detailed Inspections often require some measuring instruments, are done less frequently and are intended more towards determining performance and behavior of various elements. These inspections also indicate, need (if any) for thorough inspections. Detailed inspections are carried out primarily to establish programs of periodic or major maintenance tasks, and enhancement requirements not requiring urgent execution
- **Thorough Inspection:** Thorough Inspections are aimed at finding the cause and remedy of specific problems and at specific locations. Specialist's inspections are required once in a while. Thorough Inspections shall be carried out with highly sophisticated instruments

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

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

9.3 Operations

Traffic Flow Operation & Traffic Management Plan

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

- 1 Permitting smooth and uninterrupted flow of traffic during normal operating conditions.
- 2 Functioning of the Toll System including charging and collecting the fees from the road user in accordance with the CA.
- 3 carrying out preventive and periodic maintenance of the Project road;
- 4 undertaking routine maintenance including prompt repairs of potholes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices;

- 5 Undertaking major maintenance such as resurfacing of pavements, repairs to structures, and repairs and refurbishment of tolling system and other equipment;
- 6 Functioning of the lighting system;
- 7 Functioning of the Patrolling System
- 8 Functioning of rescue and medical aid services
- 9 Ambulance as and when required
- 10 Functioning of the Project Facilities
- 11 Administrative, Operational and Maintenance Base Camp
- 12 Truck Lay byes
- 13 Pickup Bus stops / Bus Bays
- 14 Protection of the environment and provision of equipment and materials therefore;
- 15 Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
- 16 Complying with Safety Requirements in accordance with Article 18.

9.4 Operation of Toll Plaza

There are two lanes in each direction operating at toll plaza, middle lanes are used by Car/LCV for collecting toll and extra wide lanes are utilized by wide vehicles like Bus/Trucks/Tractors and toll exempted vehicles. The cash collected is deposited on daily basis to the escrow account. In case of ETC system Toll collection is connected with Network system and directly deposited into the Escrow account

9.5 Maintenance of Project road

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

- 1. Preventive Maintenance
- 2. Routine Maintenance
- 3. Periodic Maintenance
- 4. Special repairs

Preventive Maintenance

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

The strategy of applying periodic treatments at appropriate times in a pavement's life is economical than applying treatment at the end of pavement's life. Preventive maintenance is designed to retard pavement deterioration. Regular preventive maintenance will be carried out to ensure adherence to the Design Requirements and specifications throughout the Concession period. Preventive Maintenance shall include the activities related to each element and the system as a whole of the Project Preventive Maintenance for Structures is estimated by the consultant. The condition data collected from site was used to arrive at the appropriate treatments and quantities. Rates from Schedule of Rates (SOR) of MP, was used to arrive at the cost.

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



Routine Maintenance:

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

Periodic Maintenance

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

The details of periodic maintenance schedule are given below.

S No.	Scheduled Major Maintenance	Year	Status at site
1	1st Periodic Maintenance	2018	Executed
2	2 nd Periodic Maintenance	2025	Scheduled

Table 9.1: Schedule and status of for Periodic Maintenance

Special Repairs

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

- a. Culvert and bridge repairs
- b. Retaining wall repairs and construction;
- c. Construction of diversions;
- d. Floodway repairs; and
- e. Flood damage restoration works, etc.

9.6 Review of Test Reports:

Bump Integrator Test:

Maintenance of road is dependent on several factors, one of which is the condition of Pavement surface. As such Roughness is the measurement of the riding quality, which in turn is the effect of total surface deterioration. Bump Integrator (BI) is one of the equipment needed for roughness measurement. The roughness of pavement surface is designated as uneven index value and expressed as surface roughness from which the condition of the road can be assessed. The test was conducted in the month of Sept 2020. As per Schedule K of the CA, If the value exceeds 3000mm in a KM, the stretch shall be rectified. No stretch exceeded the permissible limit of 3000 mm in the Project road.

Benkelman Beam Deflection (BBD):

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

Concessionaire has conducted the test in Jan 2020. The test report has been verified and found within permissible limits as per IRC 81.

9.7 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 5**.

Year	Routine maintenance	Incidental maintenance	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.131	0.098		0.30	0.53
2021	0.135	0.101		0.31	0.55
2022	0.139	0.104		0.32	0.57
2023	0.143	0.107		0.33	0.58
2024	0.147	0.110		0.34	0.60
2025	0.152	0.113	5.39	0.35	6.01
2026	0.156	0.117		0.36	0.64
2027	0.161	0.120		0.37	0.66
2028	0.015	0.011		0.03	0.06
Total	1.180	0.882	5.390	2.742	10.194

Table 9.2: Proposed Plan for Future Operation & Maintenance Cost (In Crores)



CHAPTER 10. REVIEW OF CONCESSION AGREEMENT

10.1 Scope of Work (Article 2)

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

- Construction of the Project road on the Site set forth in Schedule-A and as specified in Schedule-B together with provision of Project Facilities as specified in Schedule-C, and in conformity with the Specifications and Standards set forth in Schedule-D of the CA
- Operation and maintenance of the Project road in accordance with the provisions of Concession Agreement (CA)
- Performance and fulfillment of all other obligations of the Concessionaire in accordance with the provisions of this CA and matters incidental

10.2 Letter of Award

After evaluation of the bids received, Authority will select one bidder considering their score in technical and financial bids. Further Authority will issue a Letter called LOA (Letter of Award) to the selected bidder requiring the execution of agreement within stipulated time. The issued LOA copy given in **ANNEXURE 6**.

10.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

- Providing adequate Right of Way
- Providing necessary approvals as per the CA

Conditions precedent to be fulfilled by the Concessionaire

Provide performance security to the Authority

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

10.4 Major Obligations of the Concessionaire (Clause 5.1)

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

10.5 Obligations relating to the Competing Roads (Clause 6.3)

Neither Authority nor any Governmental Instrumentality shall construct the Competing Road before 10th Anniversary of the Appointed Date.

10.6 Performance Security (Article 9)

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

10.7 Provisional Completion Certificate (Clause 14.3)

• Upon completion of works in accordance with the specifications and standards set forth in the Schedule B, C and D of CA and after determining the tests on completion successful the Independent engineer shall issue the Completion Certificate in the form set forth in Schedule J of the CA. Provisional Completion Certificate given in **ANNEXURE 7**

10.8 Completion Certificate (Clause 14.4)

• Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire. Completion Certificate given in **ANNEXURE 8**

10.9 Commercial Operation Date (COD) (clause 15.1)

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

10.10 Change of scope (Article 16)

Change of scope, proposals were initiated during construction period and consented by the MPRDC. Details are provided in **ANNEXURE 10.**

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

- Permitting safe, smooth and uninterrupted flow of traffic on the Project road
- Collecting and appropriating the Fee
- Minimizing the disruption to traffic in the event of accidents.
- Undertaking routine maintenance including prompt repairs of pot holes, cracks, joints, drains, embankments, structures, pavement markings, lighting, road signs and other traffic control devices
- Undertaking major maintenance such as resurfacing of pavements, repairs and refurbishments of tolling system and other equipment

- Preventing any un authorized use of the Project road.
- Protection of environment and provision of equipment and materials
- Complying with safety Requirements in accordance with the provisions of the CA.

10.12 Maintenance Requirements (Clause 17.2)

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

10.13 Maintenance Manual (Clause 17.3)

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

10.14 Maintenance Programme (Clause 17.4)

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

10.15 Damages for breach of Maintenance Obligations (Clause 17.8):

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

10.16 Monthly status reports (Clause 19.1)

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

Independent Engineer or the Authority. In particular, such report shall separately identify and state in reasonable detail the defects and deficiencies that require rectification.

10.17 Monthly Fee Statement (Clause 19.5)

During the Operations Period, the Contractor shall furnish to the Concessionaire and the Authority, if required by the Contractor, within 7 (seven) days of completion of each month, a statement of Fee substantially in the format set out in the CA ("Monthly Fee Statement").

10.18 Annuity (Article 25)

The Annuity payment of Rs 3.69 Crores is due and payable by the Authority to the Concessionaire for each six months after COD as set forth in Clause 25.2.1 and Schedule Y of CA.

S. No.	Particulars	Paid on
1	1 st Annuity	08-Oct-13
2	2 nd Annuity	02-Apr-14
3	3 rd Annuity	04-Oct-14
4	4 th Annuity	31-Mar-15
5	5 th Annuity	03-Oct-15
6	6 th Annuity	04-Apr-16
7	7 th Annuity	05-Oct-16
8	8 th Annuity	03-Apr-17
9	9 th Annuity	07-Oct-17
10	10 th Annuity	17-Apr-18
11	11 th Annuity	04-Oct-18
12	12 th Annuity	30-Mar-19
13	13 th Annuity	30-Sep-19
14	14 th Annuity	21-Apr-20
15	15 th Annuity	28-Sep-20

 Table 10.1: Status of Annuity Payments

10.19 Concession Fee (Article 26)

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

10.20 Toll fee (Clause 27.1.1)

Toll Fees Shall be revised annually in accordance with Clause 27.2.1.



10.21 Change in Law (Article 41)

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

CHAPTER 11. INSURANCE

11.1 Details of Insurance

As per clause 32.1 of the Concession Agreement (CA), the Concessionaire shall effect and maintain at its own cost during the Operation Period such insurances for such maximum sums as may be required under the Financing Agreements and the Applicable laws, and such insurances as may be necessary or prudent in accordance with Good Industry Practice. Insurance copies are provided in **ANNEXURE 9**. Accordingly, the Concessionaire has procured the following insurances for mitigating the risks

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

Name of the	Insurance	Doliov No.	Effectiv	e Period	Description of the Property		
Policy	Company	POlicy NO	From	То	Description of the Property		
Civil Engineering Completed Risk	National Insurance Company Ltd	3213004419 10001985	27.03.2020	26.03.2021	Road & Structure: Toll Building & Toll Booths, TMS, HTMS, Office &IT equipment, Electronic Equipment, Road Furniture, Fixtures, electrical Poles Lighting & Fittings, Sign boards & Safety Barrier		
Employees Compensati on Insurance Policy	HDFC ERGO General Insurance Company Ltd	311420338 8604100000	19.05.2020	18.05.2021	All categories of Employees of the Contractor & sub- contractor engaged in the Project		
EEI Policy Limited		171200/44/ 2021/39	08.09.2020	07.09.2021	Electronic Equipment installed in the project road		

Table 11.1: Insurance Details

CHAPTER 12. CONCLUSION

12.1 General

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

12.2 Pavement Condition

The overall project pavement condition is good. RCC drains are constructed in Built up locations and earthen drains in rural locations resulting in, effective drainage system along the project road. Shoulder condition is fair.

12.3 Condition of Structures

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

12.4 Traffic Growth

Based on real time traffic data collected from the submissions made as per Schedule N of the CA, the traffic growth observed is 5.63%. However, 5% only considered while estimating forecast of traffic volumes.

12.5 Project Facilities

Toll Plaza is located at Ch.4+500 and is operational. Toll Plaza is operated by ETC Toll collection system and connected by network system monitored in administrative building. Bus bays are in fair condition. Medical Aid posts found functional. Avenue plantation and landscaping at Toll Plaza is provided and being maintained. Highway lighting is provided at toll plaza locations and found functional.

12.6 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per site requirement. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

12.7 Maintenance

- The routine maintenance being carried out by O&M contractor effectively. Based on documents reviewed, time to time observations made by client/Authority, being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried out in 2018 and next MM is scheduled in 2025.

12.8 Epilogue

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

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ANNEXURES

RUKY Doc No.RU-DD Report- Sitamau-Suwasara /01



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**

Chaina	ge (Km.)		Pavement Condition					Riding	g Quality		SI	noulder	t t	Road Sid	e Drain	Remarks
From	То	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)	Pavement Edge Drop (cm)	Compositi on	Condition (Fair / Poor/ Damaged)	Embankme Condition (Good/Fair Poor)	Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
0+000	1+000								G		PS & ES	F	F	LD & ULD	F	
1+000	2+000								G		ES	F	F	ULD	F	
2+000	3+000								G		ES	F	F	ULD	F	
3+000	4+000								G	2-2.5	ES	F	F	ULD	F	
4+000	5+000								G		ES	F	F	ULD	F	
5+000	6+000								G		ES	F	F	ULD	F	
6+000	7+000								G		ES	F	F	ULD	F	
7+000	8+000								G		PS & ES	F	F	LD & ULD	F	
8+000	9+000								G		ES	F	F	ULD	F	
9+000	10+000								G		PS & ES	F	F	LD & ULD	F	
10+000	11+000								G		ES	F	F	ULD	F	
11+000	12+000								G		ES	F	F	ULD	F	
12+000	13+000								G		PS & ES	F	F	LD & ULD	F	
13+000	14+000								G		ES	F	F	ULD	F	



Chaina	ge (Km.)	Pavement Condition				Riding	g Quality		Sł	noulder	/	Road Sid	e Drain	Remarks		
From	То	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)	Pavement Edge Drop (cm)	Compositi on	Condition (Fair / Poor/ Damaged)	Embankme Condition (Good/Fair Poor)	Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
14+000	15+000								G		PS & ES	F	F	LD & ULD	F	
15+000	16+000								G	2-2.5	ES	F	F	ULD	F	
16+000	17+000								G		PS & ES	F	F	LD & ULD	F	
17+000	18+000								G		ES	F	F	ULD	F	
18+000	19+000								G		ES	F	F	ULD	F	
19+000	20+000								G	2-2.5	ES	F	F	ULD	F	
20+000	21+000								G		ES	F	F	ULD	F	
21+000	22+000								G		PS & ES	F	F	LD & ULD	F	
22+000	23+000								G		ES	F	F	ULD	F	
23+000	24+000								G	2-2.5	ES	F	F	ULD	F	
24+000	25+000								G		ES	F	F	ULD	F	
25+000	26+000								G		ES	F	F	ULD	F	
26+000	27+000								G	2-2.5	ES	F	F	ULD	F	
27+000	28+000								G		ES	F	F	ULD	F	
28+000	29+000								G		ES	F	F	ULD	F	
29+000	30+000								G	2-2.5	ES	F	F	ULD	F	
30+000	31+000								G		ES	F	F	ULD	F	
31+000	32+000								G		ES	F	F	ULD	F	
32+000	33+000								G	2-2.5	ES	F	F	ULD	F	



Chaina	ge (Km.)		Pa	avement	Conditio	n		Riding Quality		Shoulder 번 ~		, ut	Road Side Drain		Remarks	
From	То	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (km/hr)	Quality (G/F/P /VP)	Pavement Edge Drop (cm)	Compositi on	Condition (Fair / Poor/ Damaged)	Embankme Condition (Good/Fair Poor)	Type (LD/ULD/ CD/NO)	Condition (PF/F)***	
33+000	34+000		5	3					F		ES	F	F	ULD	F	
34+000	34+973								G		PS & ES	F	F	LD & ULD	F	



Type of Structure	Minor Bridge	Minor Bridge	Major Bridge	Major Bridge	Minor Bridge				
Chainage (Km.)	0+818	1+596	4+030	8+578	10+083	12+656	20+879	21+089	21+650
Substructure	Good	Good	Good	Good	Good	Good	Good	Good	Good
Superstructure	Good	Good	Good	Good	Good	Good	Good	Good	Good
Expansion Joint	Good	Good	Good	Good	Good	Good	Fair	Fair	Good
Approach slabs	Good	Good	Good	Good	Good	Good	Good	Good	Good
Drainage spouts	-	-	-	-	-	-	-	-	-
Approaches	Good	Good	Good	Good	Good	Good	Good	Good	Good
Wearing coat	Good	Good	Good	Good	Good	Good	Fair	Fair	Good
Bearings	-	-	-	-	-	-	-	-	-
Quadrant Pitching	Fair	Fair	Good	Good	Fair	Good	Fair	Fair	Fair
Toe wall	-	-	-	-	-	-	-	-	-
Aprons	-	-	-	-	-	-	-	-	-
Remarks	-	-	-	-	-	-	-	-	-

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	Condition of Box/ Slab Culverts									
S. No.	Chainage (Km.)	Condition	Return wall	Quadrant pitching	Toe wall	Aprons	Parapet wall			
1	7+660	Good	Good	Good	Fair	-	Good			
2	10+873	Good	Good	Fair	Fair	-	Good			
3	13+150	Good	Good	Fair	Fair	-	Good			
4	21+433	Good	Good	Fair	Fair	-	Good			
5	22+070	Good	Good	Good	Fair	-	Good			

Annexure 3: Condition of Box/Slab/ Hume Pipe Culverts

Condition of pipe Culverts

S. No.	Chainage (km.)	Hume Pipe	Head wall	Quadrant pitching	Toe wall
1	0+400	Good	Good	Good	
2	2+890	Good	Good	Good	
3	3+060	Good	Good	Fair	
4	9+693	Good	Good	Fair	
5	11+792	Good	Good	Fair	
6	11+950	Good	Good	Fair	
7	12+638	Good	Good	Fair	
8	13+400	Good	Good	Fair	
9	14+455	Good	Good	Fair	
10	14+630	Good	Good	Fair	Fair
11	14+737	Good	Good	Fair	Fair
12	15+215	Good	Good	Fair	Fair
13	16+489	Good	Good	Fair	Fair
14	16+715	Good	Good	Fair	
15	16+780	Good	Good	Fair	
16	16+870	Good	Good	Fair	
17	18+388	Good	Good	Fair	
18	19+736	Good	Good	Fair	
19	19+898	Good	Good	Fair	Fair
20	19+995	Good	Good	Fair	Fair
21	22+790	Good	Good	Fair	Fair
22	23+427	Good	Good	Fair	Fair
23	24+980	Fair	Fair	Fair	Fair
24	25+350	Good	Good	Fair	Fair
25	26+560	Good	Good	Fair	Fair

Annexure 4: Estimation of Toll Revenue

1. Tollable Traffic considered for Toll Revenue in No.s (AADT):

Table 1: Details of Tollable Traffic (Base Year 2019-20)

	Traffic (AADT)
venicie rype	Km. 4+500
Car/Taxi/Van	639
LCV	308
Bus	50
Truck	41
MAV	138

2. Traffic Growth Rates

Table 2: Details of Growth rates adopted

Year	Car	LCV	BUS	Truck	MAV	
2019-25	5.00	5.00	5.00	5.00	5.00	
2025-30	5.00	5.00	5.00	5.00	5.00	

3. Trip Distribution Ratio as per the Toll Data.

Table 3: Details of Trip Distribution (Base Year 2019-20)

Vehicle Type	Single Trip	Local Pass	Total
Car/Taxi/Van	99%	1%	100%
LCV	100%	-	100%
Bus	100%	-	100%
Truck	100%	-	100%
MAV	100%	-	100%

4. Toll Rates :

Table 4: Details of Toll Fee (Base Year 2019-20)

Vehicle Type	Toll Fee at Km.4.500
Car/Taxi/Van	20
LCV	50
Bus	105
Truck	125
MAV	240



Toll Revenue:

Years	Car/Jeep	Car/Jeep (local pass)	LCV	Bus	Trucks	MAV	Total in RS	Total in Lakh.	Cumulative (in Lacs)
2019-20	4617220	185407	5619750	1886605	1856775	12112205	26277962	262.780	262.780
2020-21	4848081	206845	5900738	2022426	2064290	13154296	28196675	281.967	544.746
2021-22	5090485	217187	6815352	2224669	2250870	14364491	30963053	309.631	854.377
2022-23	5345009	241461	7156119	2442079	2450947	15662820	33298436	332.984	1187.361
2023-24	7015325	267619	8197009	2675670	2665405	17055071	37876098	378.761	1566.122
2024-25	7366091	281000	8606860	2926514	2895181	18547390	40623035	406.230	1972.353
2025-26	7734395	310579	9037203	3195753	3039940	20146303	43464173	434.642	2406.994
2026-27	8121115	326108	10279818	3355541	3298335	21858738	47239655	472.397	2879.391
2027-28	8527171	359534	10793809	3658830	3574969	23692052	4575370	45.754	2925.145



Annexure 5: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Km	34+959	12	4	350	5,87,311	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	km	2+559	24	4	350	85,982	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Km	2+559	52	1	1939	2,58,019	01 Nos of Labour
6	ROW Cleaning	Half yearly	Km	17+4795	2	5	350	61,178	5 Nos of labour per KM (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos	30	2	2	650	78,000	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Km	34+959	4	1	350	48,943	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos	24	6	1	350	50,400	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos	1.00	6	15	350	31,500	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos	7	2	2	350	9,800	02 Nos of Labour for removal of vegetation/ Structure
								12,11,133	

Shrem **

S. No.	Item		Unit	No	Frequency per year	Quantity	Rate	Amount	Remarks
	EQUIPMENT SUPPLY							-	
1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos	1	12	1	15000	15,000	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
2	Grass cutter	Monthly	Nos	0.6	12	0	12000	330	(12000/year)
3	Bikes	Monthly	Nos	0.6	12	0	2500	1,100	Per Supervisor/Per Month
4	Toll plaza AMC	Yearly	Nos		12	1	5000	60,000	10000/month
								76,430	
1	Ambulance	Monthly	Nos	12		1	10000	10000	(1200000 is the cost of vehicle, considering 10% Rental per year) including maintenance (1 Ambulance/toll plaza)
2	Consumables for Medical Aid Post and Ambulance	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
3	Consumables for Route Patrolling & Crane	Monthly	Nos	12		1	500	6000	2500 Per month for per set (Per set - Per toll plaza)
								22,000	
	Total Maintenance Cost							13,09,563.00	



Incidental cost for 1 year

S. No	Item		Unit	No	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sam	1	1	779	516	4 01 964	10 % of Total Project length on
		than yearly	oqiii	-	_	775	510	1,01,501	B/S for 1 year
2	Maintenance of Earthen	Halfwaarly	Cum	1	2	E 2 / 2 9 E	225	2 52 060	5% of total Shoulder length
	Shoulder	пан уеану	Cum	1	5	524.565	225	3,33,900	throughout the project
3	Sign Board	Quartarly	Km	1	1	12	4000	52,000	2.5 % of Total sign boards per
	Sigii Boald	Quarterry	NIII	1	T	15	4000		half year (considered 500 Nos)
4	MACA	Monthly	DNAT			27 F	2400	00.000	2.5% of Total qty per year -
	IVIBCB	MONTHLY	RIVII			57.5	2400	90,000	(considered 2400 per number)
5	Nilo Stone (KNA Stone / HNA								5 % of total stones per year
		Quarterly	Nos	34.959	4	9	2250	81,000	(unable to understand the
	Stone / ROW Stone etc.)								backup)
		9,78,924							



S.NO.	Particulars		Amount							
1	Man Power		₹ 20,16,000							
2	Fuel for Generator & Vehicles		₹ 5,76,000							
3	Electricity		₹ 3,30,000							
4	Stationary		₹ 10,000							
5	Replacement of Electrical Fixtures		₹ 37,760							
6	Refurbishment of Toll Plaza Equipment		₹ 75,000							
	Total Amount	₹	30,44,760							

Operational Expenses Statement

Summary of Major Maintenance

Description	Due date	Base cost Esc Period		Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimation	20-01-2021					
1st Major Maintenance - Highway	01-04-2026	4,66,53,620	5.20	3.0%	5,39,27,750	5.39
				Total	₹ 5,39,27,750	5.39

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	QUANTITY	RATE	AMOUNT
	Pavement (Asphalt & Concrete)				
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-	
(a)	On Bituminous surface @ 2.0 kg to 3.0 kg/10 sq.m.	Sqm	2,35,700.00	14.00	32,99,800



2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.	Cum	-	7,480.00	
	Providing and laying Semi dense bituminous concrete using a batch type Hot Mix Plant	Cum	3,049.38	6,800.00	2,07,35,750
	Micro surfacing	Sqm	1,13,725.00	160.00	1,81,96,000
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	1,054.50	250.00	2,63,625
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	1,054.50	130.00	1,37,085
	Total				4,26,32,260
	Junctions, Traffic Signs Marking and Other Appurtenances			-	
1	Providing and laying of cement concrete kerb without channel (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative Consider 5% for construction period.	Rmt	-	380.00	
2	Providing and laying lane markings of hot applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35 .The finished surface to be level, uniform and free from streaks and holes,Ref. to Technical specification 803.	Sqm	7,793.33	516.00	40,21,360



3	Road Studs	Nos	-	750.00	
	Total Chapter 9			-	40,21,360
	Grand Total				4,66,53,620

DUE DILIGENCE REPORT

Annexure 6: Letter of Award

31 03:47 HP LASENDET FAX MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED (Govt. of M P Undertaking) 16-A, Arera Hills, Bhopel - 482 011 Tel: (0) 0755-2765196, 205, 313, 218 (EPBX) Fax: 01-755-2572643 Website : NWW mpipe wow No MPROC/BOT/S-B-S/2010 5200 Bhopil, dated (2), October 2011 M/s Dilip Buildeon Ltd. E-5/99, Arena Colony, Bhopal Regarding, Strengthening, Widening, Maintaining and Sub: Operating of Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. assued from time to time before submission of the tender document. Also refer to your hid documents containing an unconditional price bid of ₹ 3.69 crores (Rupees three crores sixty nine lacs only) as Annuity Amount payable in terms of Clause 25 of the Concession Agreentent. Parsoant to our acceptance of your tender and decision to award the work to you, we request you to send your acceptance and sign the Concession Agreement within the time stipulated in the Tender. Thanking you, Yours faithfully Eacl: Duplicate copy of LoA (Neera] Vijay Dy .General Manager

Show 2

-	TES	T E S Hull-191, Vyzs Nagar, Near Hamanan & Shankar Temple, Ujjain-456010 (M.P.) Email: <u>benveojjain@genail.com</u> Ph no0734/2519209
Ref. No	n - 5-B-5/TLO/2013/ 216	Date: - 28/03/2013
1. 1 At BC 14 bu SU 14 Hi	PROVISIO S.C.Jain acting as Independent Eng greement dated 05th Dec.2011 for dev OT (Toll+ Annuity) Basis Section Star and terminates at Km.34+973 by joinin ild operate and Transfer (BOT) (JWASRA TOLLWAYS LIMITED, BI and Schedule –I of the Agreement hav ghway with the provisions of the Agree	NAL CERTIFICATE incer, under and in accordance with the Concession velopment of Sitamau Basai Suwasra Road (MDR) or rts From KM.0+000 at Sitamau Village Junction with Sh- ng With MDR-45 near Suwasara Village(the "MDR") or Toll +Annuity) basis, through M/S DBL SITAMAU HOPAL ,hereby certify that the Tests specified in Article e been undertaken to determine compliance of the Projec ement,
2. C Pu an in Fo re Ci Wi co	Constructions Works that were found to meh List appended hereto, and the con- d/or rectify all such works in the tim complete works have been delayed as arce Majeure and the Provisional ce maining incomplete works have bee ancessionaire,) I am satisfied that hav orks, it would not be prudent to withho impletion thereof.	be incomplete and/or deficient have been specified in the cessionaire has agreed and accepted that it shall complete the and manner set forth in the agreement. (Some of the a result of reasons attributable to the MPRDC or due to rtificate cannot be withheld on this account. Through an delayed as a result of reasons attributable to the ing regard to the nature and extent of such incomplete id commercial operation of the Project Highway Pending
3. In in he 20	view of the foregoing, I am satisfied the commercial service of the Users there rby provisionally declared fit for entry 113.	hat the Project Highway can be safely and reliably places of, and in terms of the agreement, the Project Highway i y into commercial operation on this the 28 th day of march
Ad Al Fc	CCEPTED, SIGNED, SEALED ND DELIVERED or and on behalf of ONCESSIONAIRE by:	SIGNED SEALED AND DELIVERED for and on behalf of INDEPENDENT ENGINEER by: (N N N 28(3)12- (Signature)

Moone

Annexure 8: Completion Certificate



Letter No: - H-R/TLO2013/ 219

Te Shri Mahendra Singh-Authorized Signatory Theme Engineering Services Pvt. Ltd., Jaipur-302018 (Raj.)

Theme Engineering Services Pvt. Ltd. M1-191, Vyas Nagar, Near Hanuman & Sharkar Yemple, Ujjsin-456010 (M.P.) Email:themeuflain@gmail.com Ph No: 0734-2519209

Date:-15/06/2013

Sub: - Recommendation for issuing Completion Certificate of Sitaman-Basai-Suwasara toad on BOT (Toll+ Annuity) basis.

It is to intimate that the Shamas-Basai-Suwasara road from Km. 0/000 at Sitamau village SH-14 junction to Km 34/973 of Major District Road (the MDR) is completed by M/s DB1. Sitamau Suwasara Tollways limited on 15.06.2013. I undersigned recommend the following completion cartificate to be signed by authorized signatory.

COMPLETION CERTIFICATE

1. I ,Sh. S. C. Jain, acting as Independent Engineer, under and in accordance with the Concession Agreement dated 05/12/2011 (the "Agreement"). For Two laning of the Siteman- Basai -Suwasara section from Km. 0/000 at Sitamau Village SH-14 junction to Km.34/973 of Major District Road (the " MDR") on build, operate and transfer (BOT) basis, through M/s DBL Sitamau Suwasara Tollways Ltd, hereby certify that the Tests specified Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and J am satisfied that the Project Highway can basefuly and reliably placed in commercial service of the Users thereof.

2. It is certified that in terms of the aforesaid Agreement, all works forming part of Two-Laning have been completed, and the Project Highway is hereby declared fit for entry in to commercial operation on this the 15th of June 2013.

Enclosed: - Photocopy of Completion Certificate Page No. 35 of Schedule-L

RECOMMENDED AND \$IGNED

(S. C. Jain) Team Leader

Date: - 15/06/2013

Copy to,

- 1) Chief Engineer (MDR), MPRDC, Bhopal
- Divisional Manager, MPRDC, Ullain.

C. Jain.) cam Leader

Theme Engineering Services Pvt. Ltd,

Theme Engineering Services Pvt.Ltd.

B-24, Ookul Vatika, Jawahar Circle, Jaipur-302018(Ral.). Phil-+91-141-2224404 04 on

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Annexure 9: Insurance

पॉलसिंग अनुसूची/ Policy Schedule - Civil Engineering Completed Risk Policy Number: व्यवसाय स्त्रोत /Business Source: 910355 321300441910001985 जारीकर्ता कार्यालय/Issuing Office वकिरय चैनल वविरण/Sales Channel Code: 91035500000001 कार्यालय कोड /Office Code: 321300 नाम /Name: Aspire Insurance Brokers Pvt कार्यालय पता /Office Address: BHOPAL Ltd - HO Contact Number: 8291914810 DIVISION II B-8, Indrapuri, B H E L, Bhopal, सह दलाल कोड / Co Broker Code: Madhya Pradesh - 462022. State Code: 23, Madhya Pradesh GSTIN: 23AAACN9967E1ZB Customer Care Toll Free Number: Contact Number: 755 2682822 1800 345 0330 eMail: 321300@nic.co.in email:customer.support@nic.co.in Mobile Number: Strengthening, Widening, Maintaining and Operating of Sitamau-Basai-Suwasara Road on BOT (Toll + Annuity) basis. Name of the co insured under the policy is Dilip Buildcon Ltd. & MPRDCL. Name of the contractor under the policy is Dilip Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause. जसिकी गवाही में दनि/ माह /वर्ष को उपरोक्त उल्लेखति कार्यालय पते पर अधोहस्ताक्षरी को वधिवित अधकित कथि जा रहा है उसके हाथ नरिधारति कणि जाएं। यह अनुसूची, संलगुन पॉलसीि, खण्ड, पृष्ठांकन और पॉलसिी शबुदों, जो कंपनी वेबसाईट <u>https://nationalinsurance.nic.co.in</u> पर उपलब्ध है, को एक अनुबंध के रुप में एक साथ पढ़ा जाए तथा कोई भी शब्द या अभवियक्त जिसिके लएि यह वशिष्टि अरुथ पॉलसीि या अनुसूची के कसिों भी हसिसे में संलग्न कयिा गया हो, एक ही अरुथ वहन करेगा चाहे जहाँ भी उललेखति हो। यह आश्वासन दयिा जाता है कपि्रीमयिम चेक के अस्वीकृत के मामले में, यह दस्तावेज स्वतः प्राथमकिता नरिस्त हो जाएगी । /IN WITNESS WHEREOF, the undersigned being duly authorized

hereunto set his/ her hand at the office address mentioned above, this 27/March/2020. This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website <u>https://nationalinsurance.nic.co.in</u> shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'

इंश्योरेन्सइंडयिालनिटिड

कृते नेशनल इनुश्योरेन्क स्टांप इयूटी लेनिटिडा For and on behalf of National Insur Duty: Company (₹ 0.50) अधकित हस्तात्व Authoria Tai Signater

Spraine?

TECHNICAL

DUE DILIGENCE REPORT

ॉलसिी अनुसूची/ Policy Schedule - Civil	Engineering Completed	Risk						
Policy Number:	व्यवसाय स्त्रोत	/Business Source:	910355					
जारीकरता कार्यालय/Issuing Office	<u>वकिरय चैनल वविर</u> 010355000000	ण/Sales Channel	Code:					
भार्यालय कोड /Office Code: 321300	जाम /Name: As	91035500000001 नाम /Name: Aspire Insurance Brokers Pvt						
higanea 441 70mce Address. BHOPAL DIVISION II B-8, Indrapuri, B H E L, Bho Madhya Pradesh - 462022.	opal, Ltd - HO Contac सह दलाल कोड /	ct Number: 829191 Co Broker Code:	4810	1				
Stato Code: 23, Madnya Fraussi GSTIN: 23AAACN997E12B Contact Numbor: 755 2682822 eMail: 321300@nic.co.in Mobilo Number:	Customer C 18 email:custom	are Toll Free N 800 345 0330 ner.support@nic	umber: c.co.in					
गुराहक का लाग /Customer Name: DBL	SITAMAU SUWASARA	ग्राहक आई 970137027	ST /Custo	omer ID:	पैन /PAN: AAECD0387N			
पता/ Address: PLOT NO-5, INSIDE GOV	IND NARAYAN SINGH	फोन /Phon	ie:					
GATE CHUNA BHATTI, KOLAR ROAD District: BHOPAL, State: MADHYA PRA Cell: 8815188912	BHOPAL, City: BHOPA DESH, PIN: 462016.	ıL, ई-ਸੇਕ /E-M	lail:					
midnight of 26/03/2021 पुरीझथिस/ Premium र ।	5,16,298.00 कवर नो	ट संख्या और तथि Note Number a	7 Cover nd Date	NA				
पुरामायमा Premium र। CGST	\$ 55,467.00	Note Number a	nd Date					
SGST/UTGST	₹ 55,467.00	_			2224 01 22/02/2020			
GST	प्रस्तात	माख्या और तथि/P	roposal	RE1120142700	30/14 DL 2/103/2020			
भरता बाढ उपकर/Kerala Flood Cess	र 0.00 प्रस्ताव ₹ 0.00	संख्या और तथि/िम Number ar	nd Date	00002000270				
iGST केरला बाढ उपकर/Kerala Flood Cess कवर:जीएसटी_टीडीएस / Less:GST_TDS	र 0.00 प्रस्ताव र 0.00	संख्या और तथि7ि Number ar	nd Date	00002003210				
ाउउ। अरला बाढ उपकरा/Kerala Flood Cess कमरजीएसटी_टोडीपस / Less:GST_TDS पुनर्पुरापुरा चिगेग्य सुटाम्प	र 0.00 प्रस्ताव र 0.00 र 0.00 रसीद	संख्या और तथि/िम Number ar संख्या और तथि/िम	roposal nd Date Receipt	321300811910	0007666 Dt. 27/03/2020			
ाउठा अरला बाढ उण्फन(Kerala Flood Cess कम्मजीपरायी_टीप्रीपरा / Less:GST_TDS पुनर्पुराप्ति योग्य स्टाम्प इय्ट्री /Recoverable Stamp Duty	र 0.00 प्रस्ताब र 0.00 र 0.00 रसीद	संख्या और तथि/िम Number ar संख्या और तथि/िम Number ar	Receipt	321300811910	0007666 Dt. 27/03/2020			
ाउउ । अरला बाढ उण्फर(Kerala Flood Cess बन्म:जीपरारी_टोडीपरा / Less:GST_TDS पुनरुपुराप्रतीियोग्य स्टाम्प इय्टी /Recoverable Stamp Duty	र 0.00 प्रस्ताव र 0.00 र 0.00 रसीद पछिली प	संख्या और तथि/िम Number ar संख्या और तथि/िम Number ar ॉलसी संख्या और स	Receipt nd Date	321300811910	0007666 Dt. 27/03/2020			
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েচ্চা भेरसा बाढ उप्प्लर/Kerala Flood Cess बन्ग-जीपरगे, टोजैपरग / Less:GST_TDS पुनरृपुराप्तनि योग्य स्टाम्प इय्टी /Recoverable Stamp Duty जुल /Total Amount হ । Rupees Seven Lakh Twenty Seven Tho cation: Silamau, Basai, Silwasera Pood	र 0.00 प्रस्ताव र 0.00 र 0.00 रसीद पछिली प 7,27,232.00 Pre usand Two Hundred Th on BOT (Toll + Appuily	संख्या और तथि7ि Number ar संख्या और तथि7ि Number ar ॉलसिी संख्या और स vious Policy Numbe Expi nity Two Only.) basis Madhya Pr	Receipt nd Date মনাণুনী নাইিি er and ry Date adesh Mi	321300811910 NA	0007666 Dt. 27/03/2020 aur - District Others, 458339			
দের। अरसा याढ उप्पनर/Kerala Flood Cess बन्म:जीएसरी_टीप्रैपरा/ Less:GST_TDS पुनर्पुराय्ती योग्य स्टाम्प इय्दी (Recoverable Stamp Duty बनुल /Total Amount হা Rupees Seven Lakh Twenty Seven Tho cation:Sitamau-Basai-Suwasara Road Sr.No Type of Risk	र 0.00 प्रस्ताव र 0.00 र 0.00 रसीद पछिली प 7,27,232.00 Pre usand Two Hundred Tr on BOT (Toll + Annuity Description Of Risk	संख्या और तथि7िम Number ar Number ar Number ar ॉलसिी संख्या और स vious Policy Numb sirty Two Only.)) basis, Madhya Pr Earthquake Zone	roposal nd Date Receipt nd Date লোণুনী লখিনি er and ny Date Sum li	NA andsaur, Mands nsured of the risk(₹)	2007666 Dt. 27/03/2020 aur - District Others, 458339. Excess(?)			
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1.Excess applicable under the policy is: (a) Upto SI of Rs 500 Cr = 10% of Claim subject to Minimum of Rs 5 lacs & (b) SI above 500 Cr & upto 1500 Cr = 10% of Claim subject to Minimum of Rs 10 lacs. Entire Road package will be treated as One location for application of Excess. 2 Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land. 3.No Coverage for (Road) Transportation Tunnels 4.No Coverage for Marine Vessel Impact Damage. 5.Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:

Printed on 27/03/2020 by ID: 71671



Scanned with CamScanner

Shrow **

ELEC							
Policy No	171200/44/2021/39		Prev Poli	cy No :			• •
Cover Note No	: ER1700203534		Cover No	te Dt :	08/09/2020		
Insured's Code	: 114389445		Issuing O	ffice Code	: 171200		
Insured's Name	: DBL Sitamau Suwasar	a Tollways Ltd	Issuing O	ffice Name	e: CBU Vadoo	lara (GSTII	N: 24AAACT06
Address	 Close Construction (Construction) Plot No 5, Inside Govin Gate, Chuna Bhatti, Kolar Ro Madhya Pradesh, 4620 	oad, Bhopal, 016	Address	:	Ist FLOOR, KI ROAD VADODARA	RTI TOWE	R, TILAK
Tel /Fax /Email	: BHOPAdvn 462eth @uni	soninsurance.n	^{et} Tel /Fax /	Email :	0265-2427075	0001 / 0265-24	36654 /
Agent/Broker De	tails				171200@00161	nainsuran	.c
Dev.Off.Code	:						
Agent/Broker	: LC0000000179 (1149)	UNISON INSU	ANCE BROK	ING SER	ICES P LTD		
Address Tel/Fax/Email	: 601-602 ,6TH FLOOR / VADODARA 300015 G 2252274,BARODA,GU	AURAM NR VA AUJARAT INDIA	SNA,HP PET A,MOB NO 98	ROL PUM 98295111	P MARKAND E PHONE NO 02	DESAI RAC 265-	ספ
Period of Insurance	E : FROM 00:00 ON 08/	09/2020 TO MI	DNIGHT OF 0	7/09/2021			
Collection No & Dt	· DC IND 321400084	47 - 17/09/2020	GST IN	VOICE NO) :2419487413	UIN :0	
Gross Premium	: 1.582 G	et · 2	85 S	tamp Duty	• 1	Total ·	1 867
Section I : E	EEI - EQUIPMENT	RISK	DETAILS		Sum Insured:		35,14,783
Section I : E	EEI - EQUIPMENT Risk : AS PER LIST / Road and bride	RISK ATTACHED ge stretch conne	DETAILS	amau	Sum Insured:		35,14,783
Section I : E	EEI - EQUIPMENT Risk : AS PER LIST / Road and bridg to Suwasara	RISK ATTACHED ge stretch conno	DETAILS	amau	Sum Insured:		35,14,783
Section I : E	EEI - EQUIPMENT Risk : AS PER LIST / Road and bridg to Suwasara MADHYA PRA	ATTACHED ge stretch conn DESH - 458884	DETAILS ecting from Sit	amau	Sum Insured:		35,14,783
Section I : E 1 Location of the SI Description of No. Items	EEI - EQUIPMENT Risk : AS PER LIST / Road and bridg to Suwasara MADHYA PRA of Manufacturer Name	RISK ATTACHED ge stretch conno ADESH - 458888 Year of Manufacture	DETAILS ecting from Sit 3 Annual Maintenance Contract	amau Identifica	Sum Insured: ation No. Escal %	lation	35,14,783 Sum Insured
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Section I : E 1 Location of the SI Description (No. Items 1 AS PER LIST Deductible / Exc Excess : (a) For equipment w 1) For PC : 5% 2) For Equipment (i) Equipment	EEI - EQUIPMENT Risk : AS PER LIST / Road and bridg to Suwasara MADHYA PRA of Manufacturer Name AS PER LIST ess for : AS PER LIST with value upto Rs. 1 lakh of claim amount subject ent other than PC : t (other than Winchester	RISK ATTACHED ge stretch conno ADESH - 458888 Year of Manufacture 2018 ATTACHED to minimum of Drive and/or Ha	DETAILS ecting from Sit Annual Maintenance Contract Rs.2500/- ard Disc)- 5% c	amau Identific: AS PER	Sum Insured : ation No. Escal % LIST	lation	35,14,783 Sum Insured 35,14,783
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Shnow 3

HDFC ERGO General Insurance Company Limited



Certificate of Insurance cum Policy Schedule

Employees Compensation Insurance



Insured Name DBL SITAMAU SUWASARA TOLLWAY Number:AACCD6124B)						s ltd (pai	Ν	Business	OTHERS	
Correspo Address	ondence	PLOT NO PRADESI	PLOT NO. 5, GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, BHOPAL, BHOPAL, MADHYA PRADESH, 462016.							
Mobile		Phone			E Mail				Policy Issuance Date	14/05/2020
Period of Insurance		From Date	& Time	19/05/202	0 00:01 A	M	To Dat	e & Time	18/05/2021 Mid	night

LAW

The Policy covers Liability of the Insured under the following Law(s) shown as covered, subject to claim being otherwise admissible as per terms, conditions and exclusions of the Policy and subject to Limit of Indemnity as stipulated against each Law:

Sr. No.	Law	Limit of Indemnity
a.	Employee's Compensation Act, 1923 and subsequent amendments thereof prior to the date of issue of this Policy	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured
b.	Common Law	Subject otherwise, to the terms, conditions & Exclusions of the Policy, the amount of liability incurred by the Insured, but not exceeding:-
		a) Limit Per Employee for any number of accidents during Period of Insurance ₹. Unlimited
		b) Limit Per Accident for any number of Employees ₹.Unlimited
		c) Aggregate Limit for all accidents and claims arising there from during the Period of Insurance ₹.Unlimited

EC-13-0005		
3114203388604100000		Page 2 of 13
HDFC ERGO General Insurance Company Limited (Formerly HDF)	C General Insurance Limited)	UIN : IRDAN125P0017V02201112 IRDAI Reg No.146 CIN : U66030MH2007PLC17711
Registered & Corporate Office: 1st Floor,HDFC House, 165 - 166 Backbay Reclamation,	Customer Service Address: D-301, 3rd Floor, Eastern Business District (Mag	Toll Free Number: 1800 2700 700 anet Mall), Telephone : +01 22 6638 3600 Fax: 01 22 6638 3609

Annexure 10: Change of Scope

Shrew XX

TECHNICAL

DUE DILIGENCE REPORT

PRDC	(Govt. of M. 45-A, Arera Hil Tel.: (O) 0755-2765196, 205, 213, 216 (Ef Website : w	P. Undertaking) ls, Bhopal-462 011 ABX), 0755-2550995, Fax : 91-755-2572643 ww.mprdc.nic.in
No	/MPRDC/MDR/2015	Bhopal, Date : /03/15
10,	Team Leader, M/s Theme Engineering Services Independent Engineer, Ujjain	
Sub :- Ref :-	Minutes of Meeting of Advisory committee of M Suwasara Road on BOT (Toll +Annuity) Scheme Your letter no. S-B-S/TL/2015/1122 dated 03.02.	PRDC for Development of Sitamau-Basai- - Change of Scope . 2015.
27.02.2 +Annu	Please find enclosed the Minutes of meeting 015 the change of scope for Development of Sitar ty) Scheme.	of Advisory Committee of its meeting dated mau-Basai- Suwasara Road on BOT (Toll
hereby Agreem	In principle approval of change of scope as per granted with the instructions to submit Financ ent within 15 days time.	r minutes of Advisory Committee (enclosed) are ial implication as per provision of Concession
Encl: M	inutes of meeting	
		Chief Engineer (MDR) MPRDC, Bhonal
Endt.No	187/MPRDC/MDR/2015	Phonel D.
Copy to	:	Bhopai, Date : 4 /04/15
1. Gene	ral Manager (F) MPRDC, Bhopal	
2. Gene	al Manager MPRDC, Indore	
3. Divis	onal Manager MPRDC, Ujjain	1
A. M/s E Encl : As	BL, Bhopal above	Chief Engineer (MDR) MPRDC, Bhopal
	Connectina People Through au	cality intrastructure

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	MINUTES OF MEETING	
M/S in th	Meeting of advisory committee of MPRDC for change of scope for Development of Sitamau-Basai-Suwasra road on BOT (Toll+Annuity) basis as S DBL Sitamau-Suwasra tollways ltd. Bhopal has been held in the office of MPRDC on dated 02.04.2014, 31.05.2014 & 27.02.2015. Following officials were put the meeting:-	igned esent
1.	Shri A.S. Chendke, Technical Advisor, MPRDC, Bhopal	
2.	Shri Narendra Kumar, Chief Engineer (MDR), MPRDC, Bhopal	
3.	Shri Alok Chaturvedi, General Manager, MDR, MPRDC, Bhopal	
4.	Shri Arun Paliwal, GM (Fin.), MPRDC, Bhopal	
5.	Shri A.L.Suryawanshi General Manager MPRDC Indore	24
6.	Shri Rakesh Jain, Divisional Manager, MPRDC, Ujjain	
7.	Shri Anil Shrivastava, AGM, MDR, MPRDC, Bhopal	5
8.	Shri O.P. Sharma, Team Leader, Independent Engineer, M/s Theme Engineering Services Pvt. Ltd., Jaipur	
9	Shri Nitin Shrivastava, General Manager, Concessionaire, M/S DBL Sitamau-Suwasra tollways ltd. Bhopal	
	The work change of scope recommended by Independent Engineer vides its letter no. S-B-S/TL/2015/1122. On dated 03/02/2015 have been discussed or as and decided as below:	e by

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			As per Schedule-B					tructed by	Cone	cessionaire		
s 10.	Particular	Place / Locatio n	From (Km)	To (Km)	Length (Km)	Existing width to be paved excluding drains (in Mtr.)	From (Km)	To (Km)	Le ngt h (K m)	Existing width paved excluding drains (in Mtr.)	Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
1	Four lane	Sitamau	0+000	0+550	.55	Four lane	0+000	0+550	.55	Four lane	Executed as per Schedule- B no change of scope	Committee agreed
		Titrod	7+450	8+050	.60	17	7+450	8+050	.60	17	Executed as per Schedule- B no change of scope	Committee agreed
		Surjani	9+600	9+800	.20	17	9+600	9+800	.20	17	Executed as per Schedule- B no change of scope	Committee agreed
	Two lane paved shoulder in builtup stretch	Belara	12+250	12+450	.20	17	12+250	12+450	.20	17	Executed as per Schedule- B no change of scope	Committee agreed
2		Dhikaliy a	14+400	14+650	.25	17	14+400	14+650	.25	17	Executed as per Schedule- B no change of scope	Committee agreed
		Kejadiy a	16+500	16+800	.30	17	16+500	16+800	.30	17	Executed as per Schedule- B no change of scope	Committee agreed
	Two lane paved shoulder in builtup stretch	Basai	21+800	22+000	.20	17	21+800	22+000	.20	17	Executed as per Schedule- B no change of scope	Committee agree
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•							33+750	33+870	.12 0	12	Executed as per Schedule- B no change of scope	Committee agreed
		Overpas s	33+750	34+000	.25	12	33+870	34+000	.13 0	12	Permission from Railway could not be obtained for construction in this stretch. It is recommended to consider as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
		Suwasra	34+400	34+973	.573	14	34+400	34+973	.57 3	10	Land in this portion could not be made available due to public hindrance. It is recommended to consider as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
3	Total Project Length			34.973 k	m.		34.959 km				Actual length of project reduced by 14 m. It is recommended to consider reduced length as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
4	Drain		2x2	2.573 km.=5	.164 km.		5.078 km.				Actual length of drain reduced by 68 m. It is recommended to consider reduced length of drain as negative change of scope	Committee agreed to consider as negative Change of Scope as recommended by I.E.
Project: Development of Sitamau - Suwasara Road of MDR (SSTL) in the state of Madhya Pradesh on BOT (Toll + Annuity) Basis

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SI	Type of	Chainage		Detail as	Development of Proposal as per Schedule-B			Proposal as per Actual Construction			Reasons/Justification	Desision of
No.	Structu re	Existi ng	Desig n	Schedule -A	Propos al	Type of Struct ure	Span arrange ment	Propo sal	Type of Struct ure	Span arrangem ent	and recommendation of I.E for Change	Committee
1		0+333	0+334	Burried	Recons.	HPC	1 X 1.20	Recon s.	нрс	1 X 0.900	As per SP-73, 900mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
2	HPC	3+068	3+066	PC, 2 X 0.750	Recons.	HPC	2 X 1.20	Recon S.	HPC	1 X 1.20	Only 1 X 1.20 m HPC constructed in place of 2 X 1.20 m HPC by Concessionaire. Hence It is recommended difference of cost Negative change of scope	Committee agreed to consider negativ Change of Scop as recommendee by IE

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3	-	-	3+500			НРС	1 X 1.20	New	HPC	1 X 1.20	Additional culvert. No change of scope not acceptable as per clause 4.00 of Schedule-B	Committee agreed
4		12+64	12+63 8	Burried	Recons.	HPC	1 x 1.20	Not Constructed		ructed	Not required as per site condition, as Minor bridge at ch. 12+656 (2x3.45) is constructed. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
5	НРС	16+72 5	16+71 5	PC, 2 X 0.300	Recons.	HPC	1 X 1.20	Recon s. HPC 1 X 1.00		1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed

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6	sc	16+78 9	16+78 0	SC, 1 X 1.00	Recons.	HPC	2 X I 20	Recon s.	HPC	1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed
7	HPC	16+88 0	16+87 0	PC, 1 X 0.450	Recons.	нрс	1 X 1.20	Recon s.	НРС	1 X 1.00	As per SP-73, 1000 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
8	НРС	18+39 6	18+38 8	PC, 1 X 1.0	Widen.	HPC	1 X 1.00	Recon s.	HPC	1 X 0.900	As per SP-73, 900 mm dia. HPC is not accepted. Hence It is recommended to consider as Negative change of scope	Committee agreed to consider negative Change of Scope as recommended by IE
9	HPC	19+75 1	19+73 6	PC, 1 X 1.0		Retained	I	Widened due to Toll Plaza from 12.70 m width to 24.80 m = 12.10 m extra			Additional culvert. No change of scope not acceptable as per clause 4.00 of Schedule-B	Committee agreed
												e.

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As per SP-73, 900mm dia. HPC is not accepted. PC, 1 X 1 X Hence It is 10 10 HPC 20+010 19+995 HPC HPC 1 X 0.900 Recons. Recons. 0.900 1.20 recommended truction truction to consider as Negative change of scope Advisory committee agreed and recommended to grant In principle approval as per last column above. Independent Engineer should submit financial implication of change of scop within 15 days time positively. mon 20mmins Duendke ma (Nitin Shrivastava) (Anil-Shrivastava) (Alok Chaturvedi) (Arun Paliwal) (Narendra (A.S. Chendke) (O.P. Sharma) Survanshi (Rakesh Jain) GM. MPRDC Concessionaire Team Leader GM (MDR)MPRDC **Divisional Manager** GM (MDR.) GM (Finance) Kumar) **Technical Advisor** M/s Theme Engineering, Indore MPRDC Bhopal MPRDC Bhopal Representative Bhopal Ujjain MPRDC ,Bhopal Chief Engineer Ujjain. MPRDC Bhopal

Annexure 11: Project Photos































