



SHREM FINANCIAL PRIVATE LIMITED

Development of Jaora-Piplodha- Jalandharkheda & Piploda-Sailana Road, Raipuriya-Petlabad-Bamniya Road, Jawad-Khoh Road & Soyat-Pidawa Road (MDR Under Package-IV) in the State of Madhya Pradesh on BOT (Annuity) Basis.

TECHNICAL DUE DILIGENCE REPORT



FEBRUARY, 2021

SUBMITTED BY



RUKY PROJECTS PRIVATE LIMITED

Hyderabad – 500 072

www.rukyprojects.com



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CHAPTER 1. INTRODUCTION

1.1 General

DBL Jaora-Sailana Tollways Limited. (herein after referred to as the “Concessionaire”) had augmented the existing road into two lane undivided carriageway from (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (42.27 Kms.) (ii) Raipururiya-Petlabad-Bamniya (18.18 Kms.) (iii) Jawad-Khoh (21.07 Kms.) (iv) Soyat-Pidawa (Km. 6.25 Kms.) with total length of 87.77 Kms. in the State by intermediate-laning/two laning on Design, build, finance, operate & transfer BOT (Annuity) basis in accordance with the terms and conditions of a concession Agreement executed with Madhya Pradesh Road Development Corporation Limited (herein after referred to as the “MPRDC”) on 24.12.2012.

Construction, operation & maintenance of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31(ii) Raipururiya-Petlabad-Bamniya(iii) Jawad-Khoh (iv) Soyat-Pidawa - SH-27 on BOT (Annuity) basis. Project location map is provided at Figure 1.1.

SHREM ROADWAYS PRIVATE LIMITED (SRPL) acquired DBL JAORA-SAILANA TOLLWAYS LIMITED vide agreement dated 26 March 2018.

SHREM FINANCIAL PRIVATE LIMITED appointed RUKY Projects Pvt. Ltd. as consultant for detailed Technical Due Diligence services of the above Road Project to know-how the present condition of Carriageway and Structures, probable costs of Operations and Maintenance during balance Concession period, additional road safety requirements.

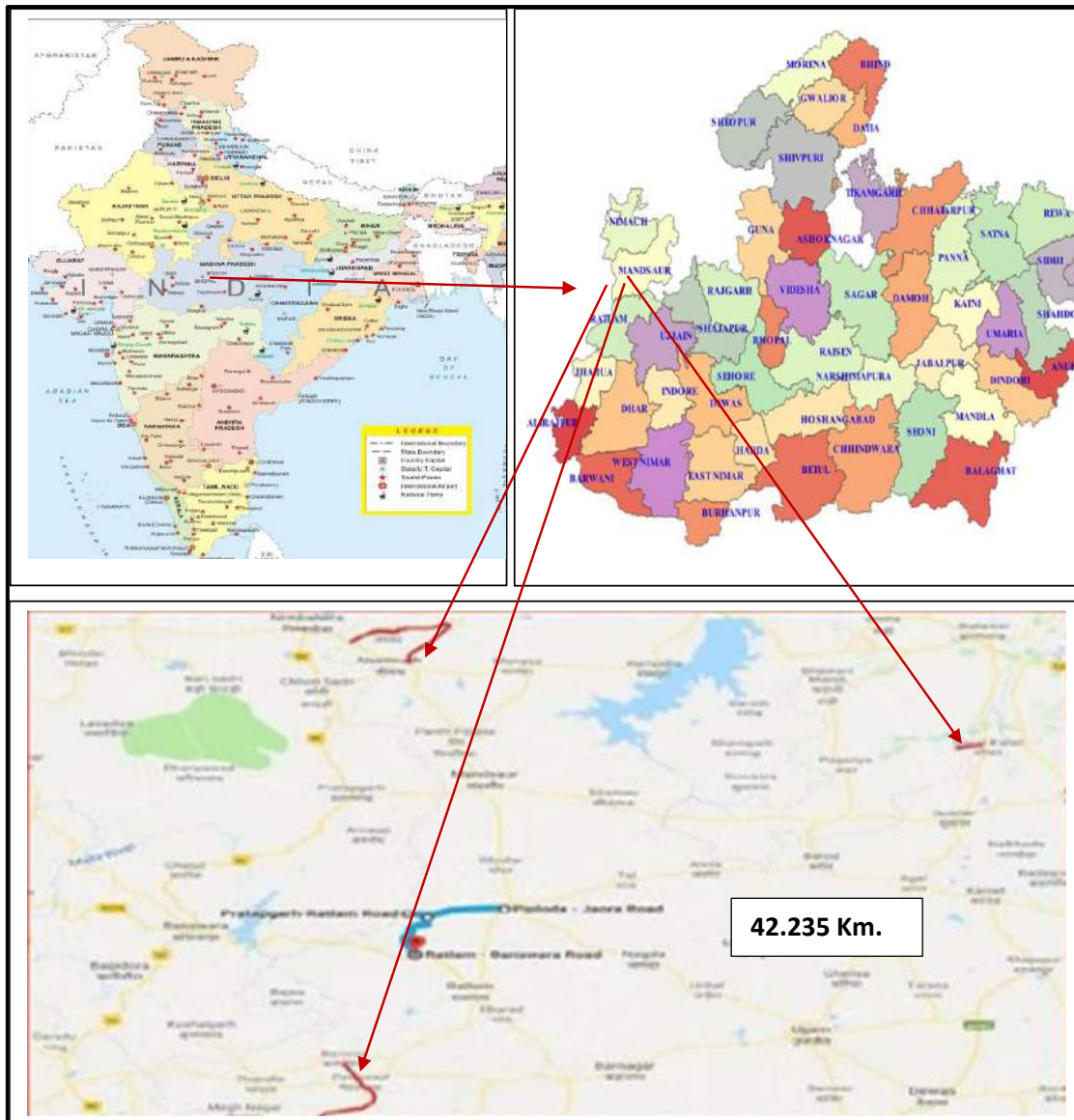


Figure 1.1: Project Location Map

1.2 Project Data

Table 1.1: Project Data

S. No.	Particulars	Details
1	Name of the project	Construction, operation and maintenance of four major district roads under Package-IV comprising of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (42.235 Kms.) (ii) Raipururiya-Petlabad-Bamniya (18.18 Kms.) (iii) Jawad-Khoh (21.07 Kms.) (iv) Soyat-Pidawa (Km. 6.25Kms.) (Total Length 87.77 Kms.) in the state of Madhya Pradesh by Intermediate-Laning/Two Laning on Design, Build, Finance, Operate and Transfer BOT (Annuity) basis
2	Road Type	Major District Road (MDR)
3	Name of the Authority	Madhya Pradesh Road Development Corporation

S. No.	Particulars	Details
		Limited
4	Name of the Concessionaire	DBL Jaora-Sailana Tollways Limited
5	Name of the EPC Contractor	Dilip Buildcon Limited
6	Design Length as per Site	Jaora-Piplodha-Jalandharkheda & Piploda-Sailana: 42.235 Kms. Raipururiya-Petlabad-Bamniya: 18.400 Kms. Jawad-Khoh : 21.030 Kms. Soyat-Pidawa: 6.300 Kms. Total Length 87.965Kms.
7	Project Lane Configuration	4 and 2 Lane
8	EPC Cost	114.41 Cr
9	Nature of contract	BOT (Annuity) basis
10	Concession Period	15 years from the Appointed date
11	Letter of Award Date	09-11-2012
12	Signing of Agreement	24-12-2012
13	Appointed date	29-06-2013
14	Concession end date	28-06-2028
14	Construction Period	730 days from the Appointed date.
15	Schedule Completion Date	28-06-2015
16	Date of issuance of Provisional Certificate (Commercial Operation Date)	09-05-2014
17	Date of issuance of Completion Certificate	14.10.2014
18	Annuity Amount (every six months)	Rs.12.06 Crores
19	Total Number of Annuities payable	26 Nos.
20	First Annuity Payment Received Date	17.12.2014
21	Total Number of Annuity Paid	12

1.3 Scope of Technical Consultant:

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

- Review of various contractual documents
- Carryout detailed assessment of pavement condition and propose maintenance plan along with BOQ.
- Review of latest BBD/BI test report
- Carrying out inventory & condition survey of all elements of road like embankment slope, plantation, road furniture, of the project.
- Carrying out inventory & condition survey of all structures (Major Bridges, Minor Bridges, ROB, RE Wall, Flyovers, VUPs, PUPs, Culverts etc.), suggest any rehabilitation & maintenance requirements along with BOQ.
- Carryout out road safety audit on Project highway and provide suggestions for improvement.
- Assess and Provide BOQ and cost estimate for routine & periodic maintenance including O&M.

- Review of punch list items, NCR's to identify any uncompleted works as on date of submission of report.
- Review of validity of insurance and statutory compliances related to Project.
- Review of correspondences exchanged between parties on contract related issues and claims etc.
- Submission of detailed report on technical due diligence of the project.

CHAPTER 2. PROJECT DESCRIPTION & TECHNICAL DETAILS

2.1 Salient Features of the Project:

The salient features described in the following table to be developed as per schedule B and Schedule C including Change of scope.

Table 2.1: Salient Features

(i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31				
S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Project Length	42.270 Kms.	(-)0.035 Kms.	42.235 Kms.
2	Rigid Pavement	2.622 Kms.	--	2.622 Kms.
3	Length of 2-Lane road	42.270 Kms.	(-)0.035 Kms.	42.235 Kms.
4	Length of 4-Lane road	--	--	--
5	Bypass/ Realignment	0.00 Km./0.995 Kms.	--	0.00 Km./0.995 Kms.
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	36	--	36
8	Truck Lay Bays	--	--	--
9	Major Junction	02	--	02
10	Minor Junctions	14	--	14
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	05	--	04
14	Pipe Culverts	31	--	35
	Slab/Box Culverts	24	--	17
	Total Culverts	55	--	52
(ii) Bamniya-Petlabad-Raipururiya				
S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Project Length	18.177 Kms.	(+)0.223 Kms.	18.400 Kms.
2	Rigid Pavement	--	--	--
3	Length of 2-Lane road	17.460 Kms.	--	17.460 Kms.
4	Length of 4-Lane road	0.940 Kms.	--	0.940 Kms.
5	Bypass/ Realignment	0.000Kms. /0.770 Kms.	--	0.000 Km./0.770 Kms.
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	18	--	18
8	Truck Lay Bays	--	--	--
9	Major Junction	01	--	01
10	Minor Junctions	10	--	10
11	ROB	--	--	--
12	Major Bridges	00	--	--
13	Minor Bridges	03	--	03
14	Pipe Culverts	39	--	33*

	Slab/Box Culverts	09	--	09*
	Total Culverts	48	--	42
(iii) Neemuch –Jawad - Khoh - Nayagaon				
S. No.	Particulars	As per CA	As per COS	As per Site
1	Total Project Length	21.070 Kms.	(-) 0.040 Kms.	21.030 Kms.
2	Rigid Pavement	Nil	--	
3	Length of 2-Lane road	19.530 Kms.	--	19.530 Kms.
4	Length of 4-Lane road	1.500 Kms.	--	1.500 Kms.
5	Bypass/ Realignment	--	--	
6	Toll Plaza	--	--	-
7	Bus Bays / Bus Shelters	10	--	10
8	Truck Lay Bays	--	--	-
9	Major Junction	02	--	02
10	Minor Junctions	11	--	11
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	03	--	03
14	Pipe Culverts	06	--	12*
	Slab/Box Culverts	10	--	07*
	Total Culverts	16	--	19
(iv) Soyat-Pidawa - SH-27				
S. No.	Particulars	As per CA	As per COS*	As per Site
1	Total Project Length	6.255 Kms.	(+) 0.045 Kms.	6.300 Kms.
2	Rigid Pavement	Nil	--	
3	Length of 2-Lane road	6.300 Kms.	--	6.300 Kms.
4	Length of 4-Lane road	--	--	--
5	Bypass/ Realignment	0.000 Kms. /0.450 Kms.	--	
6	Toll Plaza	--	--	--
7	Bus Bays / Bus Shelters	01	--	01
8	Truck Lay Bays	00	--	00
9	Major Junction	00	--	00
10	Minor Junctions	01	--	01
11	ROB	--	--	--
12	Major Bridges	00	--	00
13	Minor Bridges	00	--	00
14	Pipe Culverts	09	--	09
	Slab/Box Culverts	00	--	00
	Total Culverts	09	--	09

* 10 MNB, 89 HPC and 33 slab culverts are constructed as per site requirement along the full length of the project road .

Typical Cross Section (TCS) Schedule:

The Concessionaire has followed the following Typical Cross Section Schedule during the Construction.

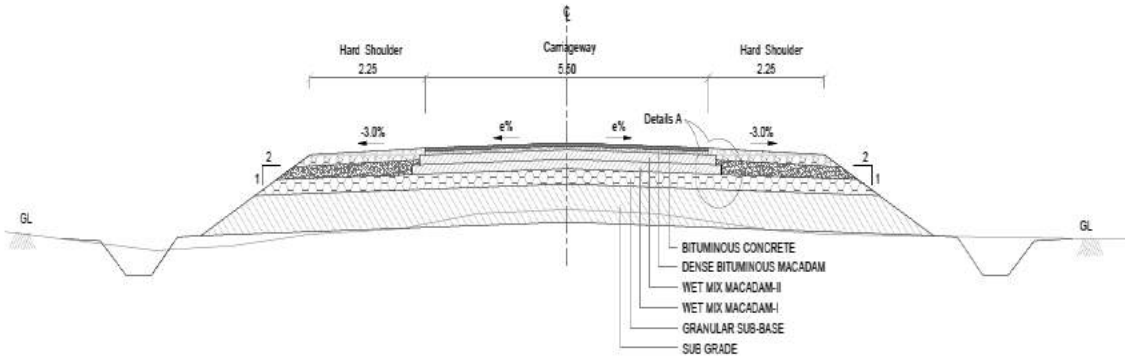


Figure 2.1: TCS 2.1 of Schedule D

Two Laning with Granular Shoulder. (Cross Section in Open Areas & Rural Areas)

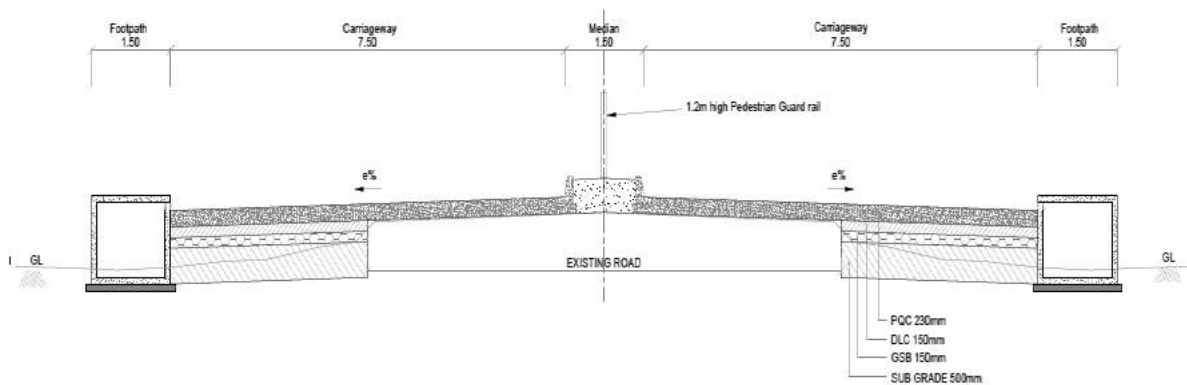


Figure 2.2: TCS 2.2 of Schedule D

Widening to 4 Lane divided Carriageway with footpath Built up area.

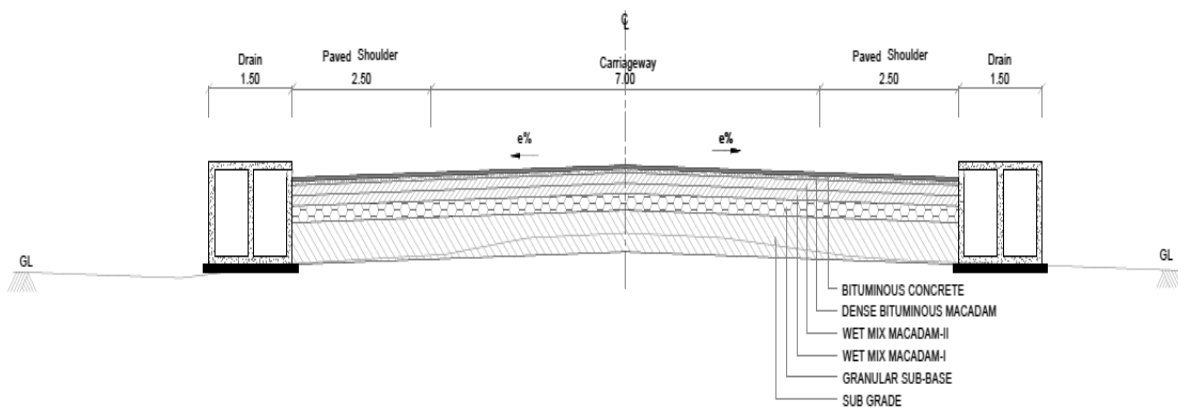


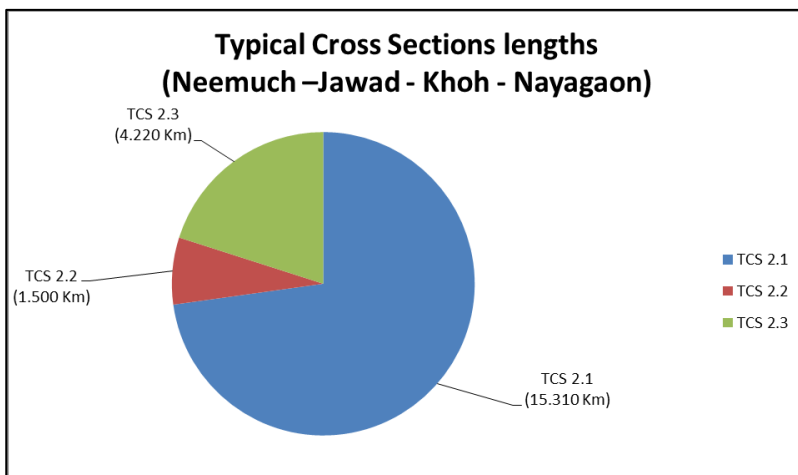
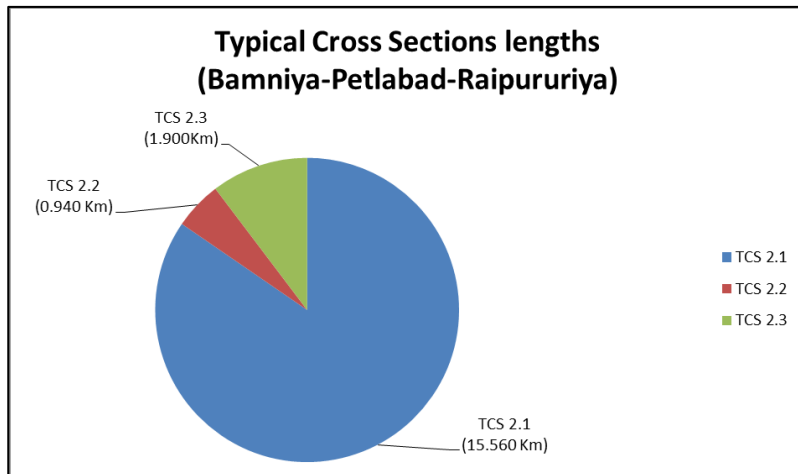
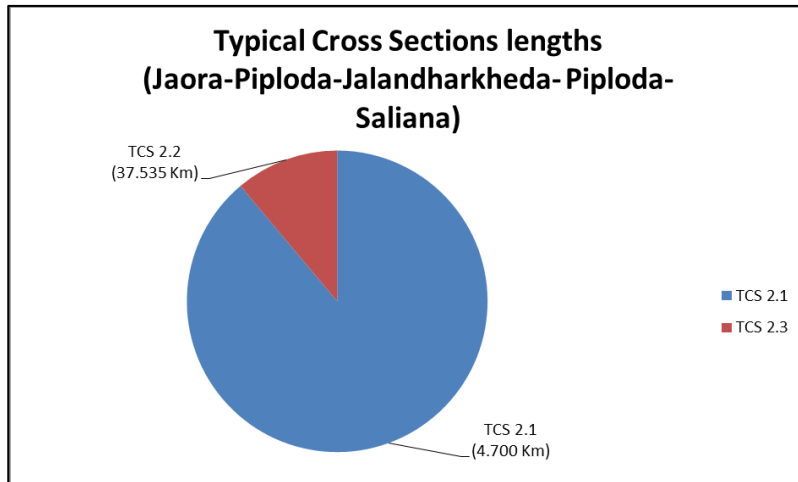
Figure 2.3: TCS 2.3 of Schedule D

The Carriageway shall be 7.0 m with Paved shoulder (In Built up Areas)

TCS Schedule is provided below.

Table 2.2: TCS Schedule

Jaora-Piploda-Jalandharkheda				
S. No.	From (Km.)	To (Km.)	length (m)	Type of TCS
1.	0+000	0+600	600	TCS.2.3 of Schedule D of CA
2.	0+600	17+100	16500	TCS.2.1 of Schedule D of CA
3.	17+100	17+900	800	TCS.2.3 of Schedule D of CA
4.	17+900	22+235	4335	TCS.2.1 of Schedule D of CA
Piploda-Saliana				
S. No.	From (Km.)	To (Km.)	length (m)	Type of TCS
1.	0+000	6+000	6000	TCS.2.1 of Schedule D of CA
2.	6+000	6+750	750	TCS.2.3 of Schedule D of CA
3.	6+750	10+200	3450	TCS.2.1 of Schedule D of CA
4.	10+200	10+550	350	TCS.2.3 of Schedule D of CA
5.	10+550	14+100	3550	TCS.2.1 of Schedule D of CA
6.	14+100	14+500	400	TCS.2.3 of Schedule D of CA
7.	14+500	18+200	3700	TCS.2.1 of Schedule D of CA
8.	18+200	18+322	122	TCS.2.3 of Schedule D of CA
9.	18+322	20+000	1678	TCS.2.3 of Schedule D of CA
Bamniya-Petlabad-Raipururiya				
S. No.	From (Km.)	To (Km.)	length (m)	Type of TCS
1.	0+000	0+700	700	TCS.2.3 of Schedule D of CA
2.	0+700	10+080	9380	TCS.2.1 of Schedule D of CA
3.	10+080	11+020	940	TCS.2.2 of Schedule D of CA
4.	11+020	16+800	5780	TCS.2.1 of Schedule D of CA
5.	16+800	17+100	300	TCS.2.3 of Schedule D of CA
6.	17+100	17+500	400	TCS.2.1 of Schedule D of CA
7.	17+500	18+400	900	TCS.2.3 of Schedule D of CA
Neemuch –Jawad - Khoh - Nayagaon				
S. No.	From (Km.)	To (Km.)	length (m)	Type of TCS
1.	0+000	3+520	3520	TCS.2.1 of Schedule D of CA
2.	3+520	3+880	360	TCS.2.3 of Schedule D of CA
3.	3+880	8+800	4920	TCS.2.1 of Schedule D of CA
4.	8+800	10+300	1500	TCS.2.2 of Schedule D of CA
5.	10+300	11+210	910	TCS.2.3 of Schedule D of CA
6.	11+210	15+300	4090	TCS.2.1 of Schedule D of CA
7.	15+300	17+930	2630	TCS.2.3 of Schedule D of CA
8.	17+930	20+710	2780	TCS.2.1 of Schedule D of CA
9.	20+710	21+030	320	TCS.2.3 of Schedule D of CA
Soyat-Pidawa - SH-27				
S No	From (Km.)	To (Km.)	Length (m)	Type of TCS
1.	0+000	1+000	1000	TCS.2.3 of Schedule D of CA
2.	1+000	6+300	5300	TCS.2.1 of Schedule D of CA



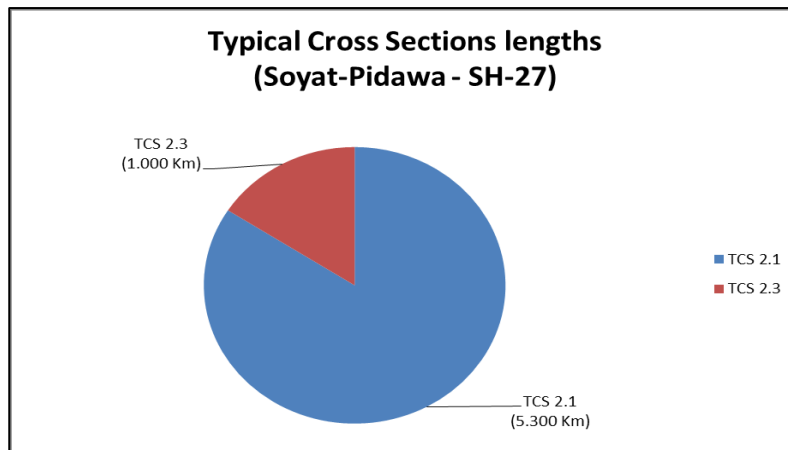


Figure 2.4: Pictorial Diagram of TCS Lengths

2.2 Road Side Drainage

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

2.3 Service Roads:

Service road is not proposed along the entire stretch of the project road as per provisions of Schedule B of CA.

2.4 Bypass/Realignment:

There is no bypass / realignment proposed on the project road as per provisions of Schedule B of CA.

2.5 Intersections:

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

Table 2.3: Summary of Major Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
Jaora- Piploda			
1	0+000	X	SH-31
Piploda - Sailana			
1	18+322	T	Village Road
Bamniya-Petlabad-Raipururiya			
1	0+000	T	Ratlam
Neemuch - Jawad			
1	0+000	X	SH-31
Jawad Nayagaon			
1	21+070	X	SH-31

Table 2.4: Summary of Minor Junctions

S. No.	Chainage (Km.)	Type of junction	Type of Cross Road
Jaora - Piploda			
1	1+530	T	Village Road
2	2+700	T	Village Road
3	4+050	T	Village Road
4	6+580	T	Village Road
5	6+800	T	Village Road
6	9+300	T	Village Road
7	12+050	T	Village Road
8	15+300	T	Village Road
9	17+100	T	Village Road
Sailana Jn - Jalandharkheda			
1	19+700	X	Village Road
Piploda - Sailana			
1	4+020	X	Village Road
2	6+400	X	Village Road
3	12+300	T	Village Road
4	14+300	T	Village Road
Bamniya-Petlabad-Raipururiya			
1	4+800	T	Kalsadiya
2	6+600	T	Asaliya
3	6+980	T	Kesarpura
4	7+200	T	Dulakhedi
5	10+030	T	Badavana
6	10+800	X	Moivagal and Petlabad
7	15+150	T	Suwrpaa
8	16+580	T	Village
9	17+200	T	Raipuriya
10	17+800	T	Jhabua
Neemuch - Jawad			
1	3+780	T	Village Road
2	7+200	T	Village Road
3	9+200	X	Village Road
4	10+100	T	Village Road
Jawad - Nayagaon			
1	10+450	T	Village Road
2	11+223	X	Village Road
3	15+470	X	Village Road
4	15+900	X	Village Road
5	16+400	T	Village Road
6	20+645	T	Village Road
7	20+700	X	Village Road
Soyat Pidawa			
1	0+000	T	Village Road

2.6 Grade Separated Structures and underpasses:

Grade Separated Structures and underpasses are not proposed as per provisions of Schedule B of CA.

2.7 Road Over Bridge:

ROB is not proposed in the project road as per provisions of Schedule B of CA.

2.8 Summary of the Pavement and carriageway details:

Summary of Pavement Details is given below:

Table 2.5: Summary of Pavement and carriageway details

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana				
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
1	2 Lane with Earthen shoulder	22.235	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	17.378	2.622	Fig 2.3 of Schedule D
3	4 Lane	---	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	42.235	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	42.235	---	
9	Total Length of the Project	42.235	---	

Bamniya-Petlabad -Raipururiya				
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
1	2 Lane with Earthen shoulder	15.560	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	1.900	---	Fig 2.3 of Schedule D
3	4 Lane	0.940	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	18.400	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	---	---	
9	Length of Stretch in the Project	18.400		

Neemuch –Jawad - Khoh - Nayagaon				
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
1	2 Lane with Earthen shoulder	15.310	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	4.220	---	Fig 2.3 of Schedule D
3	4 Lane	1.500	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	21.030	---	
Type of Alignment				

Neemuch –Jawad - Khoh - Nayagaon				
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	21.030	---	
9	Length of Stretch in the Project	21.030	---	

Soyat-Pidawa - SH-27				
S. No.	Description	Flexible (Kms.)	Rigid (Kms.)	TCS Type
1	2 Lane with Earthen shoulder	5.3	---	Fig 2.1 of Schedule D
2	2 Lane with Paved shoulder	1	---	Fig 2.3 of Schedule D
3	4 Lane	---	---	Fig 2.2 of Schedule D
4	Length of Stretch in the Project	6.300	---	
Type of Alignment				
5	New Alignment	---	---	
6	Realignment	---	---	
7	Strengthening	---	---	
8	Reconstruction	6.300	---	
9	Length of Stretch in the Project	6.300	---	

2.9 Summary of Structures:

Table 2.6: Summary of Structures

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	--	18	--
2	Widening	--	3	--	13
3	Reconstruction	--	1	07	11
4	New	--	--	4	--
5	Improvement	--	1	2	--
Total		0	05	31	24

Bamniya-Petlabad -Raipururiya					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	--	06	01
2	Widening	--	--	03	--
3	Reconstruction	--	01	25	07
4	New	--	--	04	--
5	Improvement	--	02	01	01
Total		--	03	39	09

Neemuch –Jawad - Khoh - Nayagaon					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	01	--	--
2	Widening	--	--	01	--
3	Reconstruction	--	01	04	10
4	New	--	--	01	--
5	Improvement	--	1	--	--
Total		--	03	06	10

Soyat-Pidawa - SH-27					
S. No.	Description	Major Bridges	Minor Bridges	Hume Pipe Culverts	Box/Slab Culverts
1	Retained	--	--	01	--
2	Widening	--	--	--	--
3	Reconstruction	--	--	--	--
4	New	--	--	08	--
5	Improvement	--	--	--	--
Total		--	--	09	--

2.10 Toll Plazas:

As per Schedule C provisions of the Concession Agreement, No Toll Plazas are provided.

2.11 Bus shelters:

As per the provisions of Schedule C of the Concession Agreement bus shelters are provided at the locations given below.

Table 2-6: List of Bus shelters

Jaora- Piploda			
S. No.	Chainage (Km.)	Side	Location
1	0+000	LHS	Jaora
2	0+100	RHS	Jaora
3	1+560	LHS	Borda
4	1+610	RHS	Borda
5	2+700	LHS	Hariyakh
6	2+750	RHS	Hariyakh
7	4+000	LHS	Akyader
8	4+100	RHS	Akyader
9	6+690	LHS	Barkhera
10	6+820	RHS	Barkhera
11	9+200	LHS	Sukheda
12	9+260	RHS	Sukheda
13	11+300	LHS	Havnara
14	11+340	RHS	Havnara
15	15+250	LHS	Rakoda

Jaora- Piploda			
S. No.	Chainage (Km.)	Side	Location
16	15+350	RHS	Rakoda
17	17+200	LHS	Piploda
18	17+200	RHS	Piploda
Piploda – Sailana Jn.			
S. No.	Chainage (Km.)	Side	Location
1	18+600	LHS	Sailana
2	18+750	RHS	Sailana
Sailana Jn. - Jalandharkheda			
1	19+650	LHS	Khedavad
2	19+800	RHS	Khedavad
3	23+650	LHS	Kamlakha
4	23+750	RHS	Kamlakha
Piploda - Sailana			
S. No.	Chainage (Km.)	Side	Location
1	0+050	LHS	Sailana
2	0+100	RHS	Sailana
3	4+040	LHS	Baroda
4	4+100	RHS	Baroda
5	6+420	LHS	Sherpur
6	6+480	RHS	Sherpur
7	10+450	LHS	Amba
8	10+450	RHS	Amba
9	14+300	LHS	Pahadibg
10	14+400	RHS	Pahadibg
11	18+180	LHS	Saliana
12	18+250	RHS	Saliana
Bamniya-Petlabad-Raipururiya			
S. No.	Chainage (Km.)	Side	Location
1	0.05	LHS	Bamania
2	0.1	RHS	Bamania
3	0.4	LHS	Bamania Vilage
4	0.5	RHS	Bamania Vilage
5	4.75	LHS	Kalsadlya
6	4.85	RHS	Kalsadlya
7	6.9	LHS	Kesarpura
8	7.25	RHS	Kesarpura
9	9.97	LHS	Badvana
10	10.15	RHS	Badvana
11	10.7	LHS	Petlavad
12	10.7	RHS	Petlavad

Bamniya-Petlabad-Raipururiya			
S. No.	Chainage (Km.)	Side	Location
13	15.1	LHS	Suwrpada
14	15.17	RHS	Suwrpada
15	16.8	LHS	Raipuria Village
16	16.94	RHS	Raipuria Village
17	17.75	LHS	Jhabua
18	17.85	RHS	Jhabua

Neemuch - Jawad			
S. No.	Chainage (Km.)	Side	Location
1	3+650	LHS	Jaora
2	3+760	RHS	Jaora
Jawad Nayagaon			
S. No.	Chainage (Km.)	SIDE	Location
1	11+300	LHS	Jawad
2	11+300	RHS	Jawad
3	15+580	LHS	Khor
4	15+580	RHS	Khor
5	17+010	LHS	Cement Factory
6	17+060	LHS	Cement Factory
7	20+700	LHS	Nayagaon
8	20+800	RHS	Nayagaon
Soyat Pidawa			
S. No.	Chainage (Km.)	Side	Location
1	0+200	LHS	Near Soyat Village



Figure 2.5: Representative Bus shelter at Km. 2+750 of Jaora-Piplodha-Jalandharkheda

2.12 Other Project Facilities Provided as per Schedule C

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

CHAPTER 3. ROAD INVENTORY & PAVEMENT CONDITION

3.1 General

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

3.2 Road Inventory

Inventory of the project road was carried out physically and is summarized in Table 3.1 and few representative photographs are given below.

Table 3.1: Road Inventory

S. No.	Features	Remarks
1	Terrain	Plain, Rolling and Hilly
2	Land Use	predominantly Agriculture
3	Four lane length	2.440 Kms.
4	Two Lane length	85.525 Kms.
5	Earthen shoulder	1.0 (m) to 1.5 (m) Width on site
6	Bypasses	Nil
7	Junctions	41 Nos.
8	Toll Plaza	Nil
9	Sign boards	Sign boards are provided as per highway requirements
10	Road Markings	Lane markings are provided as per highway requirements
11	Bus Bays /shelters	65 Nos.
12	Street Lighting	Highway lightings are provided as per highway requirements
13	Avenue plantation	Provided along the Project road



Km. 0+000 of Neemuch-Jawad Khon-Nayagaon



Km. 12+100 of Neemuch-Jawad Khon-Nayagaon



Km. 8+600 of Neemuch-Jawad Khon-Nayagaon



Km. 3+600 of Soyat-Pidawa

Figure 3.1: Existing Road Features

3.3 Pavement Condition

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

Table 3.2: Pavement Classification

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

Assessment of the condition of Pavement surface is a key component of infrastructure asset management. The information used across a wide range of business processes which includes: Monitoring the performance of the road; Predicting future pavement conditions and assessing long term needs; Identifying rehabilitation and maintenance treatment options; investigate causes of pavement deterioration and evaluating specific treatment options; The purpose of the pavement condition survey is to provide a more accurate and detailed investigation of the pavement deterioration in order to assist in determining appropriate rehabilitation treatments.

3.4 Pavement Condition Survey methodology

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

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

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

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

Table 3.3: Pavement condition summary

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana			
From (Km.)	To (Km.)	Length (Km.)	Condition
0+000	42+235	42.235	Good
Raipururiya-Petlabad-Bamniya			
From (Km.)	To (Km.)	Length (Km.)	Condition
0+000	18+400	18.400	Good
Neemuch –Jawad - Khoh - Nayagaon			
From (Km.)	To (Km.)	Length (Km.)	Condition
0+000	21+030	21.030	Good
Soyat-Pidawa			
From (Km.)	To (Km.)	Length (Km.)	Condition
0+000	6+300	6.300	Good



Km. 4+400 of Jaora Piplodha-Jalandharkheda



Km. 3+400 of Neemuch-Jawad-Khon-Nayagaon



Km. 13+000 of Neemuch-Jawad-Khon-Nayagaon



Km. 18+800 of Bamniya-Petlabad- Raipururiya

Figure 3.2: Representative photos for Pavement Condition

CHAPTER 4. INVENTORY AND REVIEW OF STRUCTURES

4.1 General Assessment and Condition of the Existing structures

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

4.2 Inventory of Structures

The List of structures along the project road is given below.

Table 4.1: List of Structures

S. No.	Type of Structure	Numbers
Jaora-Piploda		
1	Minor Bridge	2
2	Slab / Box Culverts	8
3	Pipe culverts	26
Piploda-Sailana		
1	Minor Bridge	2
2	Slab / Box Culverts	9
3	Pipe culverts	9
Neemuch-Nayagaon		
1	Minor Bridge	3
2	Slab / Box Culverts	7
3	Pipe culverts	12
Soyat-Pirawa road		
1	Pipe culverts	9
Bamaniya –Raipurlya road		
1	Minor Bridge	3
2	Slab / Box Culverts	9
3	Pipe culverts	33

There are 10 minor bridges in all stretches. In which some are RCC solid slab structures supported on conventional wall type abutment or piers resting on open foundations. Some are RCC box type minor bridges. Detailed inventory and condition survey of bridges are given in **ANNEXURE 2**. The culverts observed along the project road are mainly of two types' viz. pipe culverts and RCC slab/box culverts. Structural condition of most of the culverts is fair. Detailed inventory and condition survey of culverts are given in **ANNEXURE 3**.

4.3 Details of Minor Bridges

There are 10 minor bridges in all stretches.

In Jaora-Piploda road, the type of superstructure for minor bridges at Ch.: 16+250 is RCC box cell structure and 19+115 is RCC solid slab. For minor bridge at Ch.; 19+115 the substructures are of PCC conventional wall type resting on open foundations.

In Piploda-Sailana road, the type of superstructure for minor bridges at Ch.: 13+914 and 14+720 is RCC solid slab and the substructure is of PCC conventional wall type resting on open foundations.

In Neemuch-Nayagaon road, the type of superstructure for minor bridges at Ch.: 11+466 and 20+535 is RCC box cell structure and for minor bridge at Ch: 19+656 is RCC solid slab. For minor bridge at Ch.; 19+656 the substructures are of CR masonry conventional wall type resting on open foundations.

In Bamaniya–Raipurlya road, the type of superstructure for minor bridges at Ch.: 0+884 and 3+809 is RCC box cell structure and for minor bridge at Ch: 6+840 is RCC solid slab. For minor bridge at Ch.; 19+656 the substructures are of RCC conventional wall type resting on open foundations.

Table 4.2: Inventory of Minor Bridges

S. No.	Chainage (Km.)	Span	Total Length of Bridge (m)	Description
Jaora – Piploda Road				
1	16+250	3 x 5.2	15.6	It is RCC box type minor bridge with RCC Crash barrier.
2	19+115	3 x 9.0	27.0	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC crash barrier.
Piploda – Sailana Road				
1	13+914	3 x 6.0	18.0	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with masonry parapet wall.
2	14+720	4 x 5.4	21.6	MNB has RCC solid slab superstructure supported on conventional CRM wall extended with PCC wall type piers and abutments resting on open foundations. Buried type expansion joints with masonry parapet wall.
Neemuch – Nayagaon Road				
1	11+466	3 x 6.0	18.0	It is RCC box type minor bridge with RCC crash barrier.
2	19+656	4 x 5.4	21.6	MNB has RCC solid slab superstructure supported on CR masonry wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC posts.
3	20+535	3 x 5.0	15.0	It is RCC box type minor bridge with With RCC crash barrir.
Bamaniya – Raipurlya Road				
1	0+884	3 x 6.0	18.0	It is RCC box type minor bridge with with RCC crash barrier.
2	3+809	2 x 6.1	12.2	It is RCC box type minor bridge with with RCC crash barrier.
3	6+840	3 x 11.4	34.2	MNB has RCC solid slab superstructure supported on conventional RCC wall type piers and abutments resting on open foundations. Buried type expansion joints with RCC crash barrier.



Km. 0+884 of Bamniya-Raipuriya

Km. 3+809 of Bamniya-Raipuriya

Figure 4.1: Representative photos for minor bridges

4.4 Details of Culverts

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

4.4.1. General Description of the Slab/Box Culverts

There are 8 slab/box culverts in Jaora-Piploda road and 9 slab/box culverts in Piploda-Sailana road. There are 7 slab/box culverts in Neemuch-Nayagaon road and 9 slab/box culverts in Bamniya Raipurlya road. The details of the slab/box culverts are given below.

Table 4.3: List of Slab/Box Culverts

S. No.	Chainage	Span (m)	Vent Size (m)
Jaora-Piploda road			
1	0+772	1 x 3.8	2.50
2	19+263	1 x 3.1	2.60
3	19+580	1 x 5.9	4.00
4	20+205	1 x 2.4	2.00
5	21+795	1 x 4.4	2.00
6	22+780	1 x 5.0	2.00
7	23+230	1 x 4.4	3.00
8	23+960	1 x 2.4	2.00
Piploda-Sailana road			
1	1+900	1 x 4.4	2.50
2	8+350	1 x 2.4	2.00
3	8+800	1 x 2.4	2.00
4	10+100	1 x 1.5	0.80
5	10+990	1 x 1.5	3.00
6	13+100	1 x 2.4	2.50
7	15+840	1 x 4.4	2.50
8	16+503	1 x 4.4	2.50
9	17+206	1 x 4.0	2.50

S. No.	Chainage	Span (m)	Vent Size (m)
Neemuch-Nayagaon road			
1	5+840	1 x 3.4	2.50
2	10+200	1 x 6.4	2.10
3	11+760	1 x 3.4	2.00
4	12+365	1 x 5.4	3.50
5	13+960	1 x 3.4	2.10
6	16+760	1 x 5.4	3.50
7	20+720	2 x 2.7	2.00
Bamaniya Raipurliya road			
1	5+060	1 x 3	1.90
2	5+780	1 x 6	3.80
3	9+280	1 x 4.6	2.50
4	11+580	1 x 5	4.00
5	13+300	1 x 3.7	3.00
6	14+204	1 x 5.4	3.00
7	15+380	1 x 3.4	6.50
8	16+215	1 x 5.4	4.50
9	16+483	1 x 5.4	4.50

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



Km. 12+365 of Neemuch-Nayagaon



Km. 5+840 of Neemuch-Nayagaon



Km. 14+204 of Bamaniya-Raipuriya



Km. 13+960 of Neemuch-Nayagaon

Figure 4.2: Representative photos of Box/Slab culverts

4.4.2. General description of the Pipe Culverts

There are 26 Pipe culverts along Jaora-Piploda road and 9 Pipe culverts along Piploda-Sailana road.

There are 12 Pipe culverts along Neemuch-Nayagaon road.

There are 9 Pipe culverts (7 Single row pipe culverts, 1 double row pipe culverts and 1 five row pipe culvert) along Soyat-Pirawa road.

There are 33 Pipe culverts along Bamaniya -Raipurlya road. The details of the culverts are below.

Table 4.4: List of Pipe Culverts

S. No.	Chainage	Span	S. No.	Chainage	Span	S. No.	Chainage	Span
Bamaniya -Raipurlya road			Jaora-Piploda road			Piploda-Sailana road		
1	0+250	1 x 1.2	1	1+300	1 x 1.2	1	7+400	1 x 1.2
2	1+150	1 x 1.2	2	3+380	1 x 1.2	2	0+400	2 x 1.2
3	1+180	1 x 1.2	3	4+802	1 x 1.2	3	0+580	2 x 1.2
4	1+349	1 x 1.2	4	5+400	1 x 1.0	4	4+057	2 x 1.2
5	1+893	1 x 1.2	5	6+322	1 x 1.0	5	5+355	2 x 1.2
6	2+350	1 x 1.2	6	6+500	1 x 1.0	6	6+605	2 x 1.2
7	2+520	1 x 1.2	7	6+800	1 x 1.2	7	11+400	2 x 1.0
8	3+985	1 x 1.2	8	9+565	1 x 1.2	8	15+410	2 x 1.2
9	6+285	1 x 1.2	9	10+300	1 x 1.2	9	17+800	2 x 1.2
10	6+542	1 x 1.2	10	14+500	1 x 1.2	Neemuch-Nayagaon road		
11	7+920	1 x 1.2	11	18+200	1 x 1.2	1	1+042	1 x 1.2
12	8+720	1 x 1.2	12	19+100	1 x 1.2	2	1+750	1 x 1.2
13	8+980	1 x 1.2	13	0+800	2 x 1.2	3	2+300	1 x 1.2
14	9+470	1 x 1.2	14	7+080	2 x 1.2	4	3+340	1 x 1.2
15	12+500	1 x 1.2	15	9+990	2 x 1.2	5	8+890	1 x 1.0
16	13+350	1 x 1.2	16	12+500	2 x 1.2	6	10+980	1 x 1.2
17	14+720	1 x 1.2	17	15+050	2 x 1.2	7	14+350	1x1.2
18	4+180	2 x 1.2	18	17+800	2 x 1.2	8	16+900	1x1.2
19	5+190	2 x 1.2	19	18+300	2 x 1.2	9	2+430	2 x 1.2
20	7+120	2 x 1.2	20	19+800	2 x 1.2	10	4+080	2 x 1.2
21	7+598	2 x 1.2	21	23+940	2 x 1.0	11	5+200	2 x 1.2
22	7+800	2 x 1.2	22	11+200	3 x 1.2	12	7+680	4 x 0.9
23	8+010	2 x 1.2	23	11+400	3 x 1.2	Soyat-Pirawa road		
24	11+050	2 x 1.2	24	14+670	3 x 1.2	1	1+720	1 x 1.20
25	11+520	2 x 1.2	25	14+800	3 x 1.2	2	2+555	1 x 1.20
26	12+100	2 x 1.2	26	18+450	3 x 1.2	3	3+016	1 x 1.20
27	12+240	2 x 1.2				4	4+326	1 x 1.20
28	13+700	2 x 1.2				5	4+746	1 x 1.20
29	13+930	2 x 1.2				6	5+326	1 x 1.20
30	15+600	2 x 1.2				7	5+556	1 x 1.20

S. No.	Chainage	Span	S. No.	Chainage	Span	S. No.	Chainage	Span
31	15+820	2 x 1.2				8	0+679	2 x 1.2
32	1+970	3 x 1.2				9	4+026	5 x 1.2
33	3+385	3 x 1.2						

4.4.3. Condition of the Pipe Culverts:

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



Km. 5+190 of Bamaniya-Raipurlya



Km. 4+326 of Soyat-Pidawa

Figure 4.3: Representative photos of Pipe Culvert

CHAPTER 5. PAVEMENT DESIGN VALIDATION AND OVERLAY SCHEDULES

5.1 General

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

5.2 Pavement design

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

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

Review of Pavement Design

As per the pavement design approved in the project, the following conclusions are given. Also Jaora-Piploda-Jalndharkheda section was considered as Homogeneous section (HS-1) and Neemuch-Jawad-Khor-Nayagaon as HS-II.

Table 5.1: Flexible Pavement Design summary

S. No.	Description/ Pavement layer	HS-I Parameters	HS-II Parameters
1	Sub Grade CBR (%)	10%	10%
2	Design Life (Years)	15 years	15 years
3	Design Traffic* (MSA)	1.67 MSA actual 10MSA Adopted	8.38 MSA actual 10MSA Adopted
4	Surface course (BC)	40 (mm)	40 (mm)
5	Binder course (DBM)	50 (mm)	50 (mm)
6	Base course (WMM)	250 (mm)	250 (mm)
7	Sub Base course (GSB)	200 (mm)	200 (mm)

5.3 Validation of Pavement Design

The new pavement shall be designed in accordance with the IRC:37. "Guidelines for the Design of Flexible Pavements".

Based on the above actual traffic during design phase, MSA estimated at 15 years are 1.67, 8.38 of HS-1 and HS-2 respectively.

Traffic considered in pavement design is more than estimated traffic based on actual traffic. Hence the pavement design adopted is found in order.

5.4 Overlay during operation and maintenance

The pavement has been designed to cater traffic 10 MSA for a design life of 15 years for Bituminous layers and granular layers (up to end of year 2028) for HS-I and HS-II, whereas the actual traffic is 1.67 MSA and 8.38 MSA for 15 years for HS-I and HS-2 respectively. This implies that pavement will be structurally adequate to cater the future traffic with periodic renewal carried out under the maintenance program.

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

5.5 Maintenance/ Overlay schedule

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

Routine maintenance - Every year

Periodic Renewal for Flexible Pavement – Proposed on or before 2020 (Completed recently) and next MM is scheduled in 2028.

CHAPTER 6. SAFETY AUDIT OF ROAD

6.1 General

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

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

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

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

Table 6.1: Referred IRC Publications

IRC Code No.	IRC Code Name
IRC: 35	Code of Practice for Road Markings
IRC: 38	Guidelines for Design of Horizontal curves for highways and Design tables
IRC: 67	Code of Practice for Road signs
IRC: 73	Geometric Design standards for rural highways (non-urban)
IRC:103	Guidelines for Pedestrian Facilities
IRC: SP-15	Ribbon Development along highways and its prevention
IRC: SP-23	Vertical curves for highways
IRC: SP-41	Guidelines on design of at-grade intersections in Rural and Urban areas
IRC: SP-55	Guidelines for safety in construction zones
IRC: SP- 88	Manual of Road Safety

6.2 Road Safety Audit

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

Table 6.2: Details of Road Furniture

S. No.	Item Description	Status	Condition
Road Furniture			
1	Sign Boards	Chevron Signs Village sign boards Information Boards Other Sign Boards Gantry Sign Boards	Available as per site requirement Good

S. No.	Item Description		Status	Condition
2	Road Marking	Studs & Lane marking	Available as per site requirement	Fair
3	Metal Beam Crash Barriers	At High embankments	Available as per site requirement	Good

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

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

- At few places reflectors were missing on the sign boards and few sign boards were also damaged
- Retro Reflective stickers need to be provided for metal beam crash barriers for night time road users at all locations and damaged metal beam crash barriers requires maintenance regularly
- The object hazard markers are placed only on one side of Head walls/parapet walls of all structures, whereas it is to be installed on both sides at structures.

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



Km. 6+800 of Neemuch-Jawad-Khon



Km. 8+600 of Neemuch-Jawad-Khon



Km. 21+070 of Neemuch-Jawad-Khon



Km. 0+800 of Bamniya-Petlabad-Raipuriya



Km. 0+800 of Soyat-Pidawa



Km. 1+700 of Soyat-Pidawa

Figure 6.1: Representative photos during road safety audit

6.3 Conclusion

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

CHAPTER 7. OPERATION AND MAINTENANCE

7.1 General

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

7.2 Inspection

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

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

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

Maintenance program will be submitted to authority not later than 45 days prior to each accounting year.

7.3 Operations

7.3.1. Traffic Flow Operation & Traffic Management Plan

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

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

- Functioning of rescue and medical aid services
- Ambulance as and when required
- Functioning of the Project Facilities
- Administrative, Operational and Maintenance Base Camp
- Truck Lay byes
- Pickup Bus stops / Bus Bays
- Protection of the environment and provision of equipment and materials therefor;
- Operation and maintenance of all communication, control and administrative systems necessary for the efficient operation of the Project road
- Complying with Safety Requirements in accordance with Article 18.

7.4 Maintenance of Project road

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

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

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

7.4.1. Preventive Maintenance

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

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

The flexible pavement is in good condition and hence does not require any immediate or preventive interventions.

7.4.2. Routine Maintenance

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

7.4.3. Periodic Maintenance

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

Table 7.1: Schedule and status of for Periodic Maintenance

Description	Schedule of Periodic Maintenance	Status of Periodic Maintenance
1 st Periodic Maintenance	BC Overlay 2020	Completed
2 nd Periodic Maintenance	BC Overlay 2028	Planned to execute

7.4.4. Special Repairs

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

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

7.5 Review of Test Reports

7.5.1. Bump Integrator Test:

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

The test was conducted in the month of Oct - 2020. As per Schedule K of CA, if the stretch exceeds 3000mm in a Km. shall be rectified. No stretch exceeds the permissible limit.

7.5.2. Benkelman Beam Deflection (BBD):

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

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

7.6 O&M Forecast

The O&M costs were estimated based on various parameters of CA, design reports and BBD/BI test results. The cost summary is given below, and detailed cost estimations are given in **ANNEXURE 4**.

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

Year	Routine maintenance (In crores)	Incidental maintenance (In crores)	Periodic / Major maintenance	Operational Expenses	Total cost per year
2020	0.621	0.242		0.00	0.86
2021	0.639	0.249		0.00	0.89
2022	0.659	0.257		0.00	0.92
2023	0.678	0.264		0.00	0.94
2024	0.699	0.272		0.00	0.97
2025	0.720	0.280		0.00	1.00
2026	0.741	0.289		0.00	1.03
2027	0.764	0.297	15.11	0.00	16.17
2028	0.786	0.306	15.11	0.00	16.20
2029	0.198	0.077		0.00	0.27
Total	6.50	2.53	30.22	0.01	39.27

CHAPTER 8. REVIEW OF CONCESSION AGREEMENT

8.1 General: Scope of Work (Article 2)

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

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

8.2 Letter of Award

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

8.3 Conditions precedent (Article 4)

Conditions precedent to be fulfilled by the Authority

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

Conditions precedent to be fulfilled by the Concessionaire

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

8.4 Major Obligations of the Concessionaire (Clause 5.1)

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

8.5 Performance Security (Article 9)

- The Concessionaire shall submit the Performance security to the Authority within 180 days from the date of the Agreement.

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

8.5.1. Tests (Clause 13.3)

For determining that the Project, conforms to the Maintenance Requirements, the Independent Engineer shall require the Concessionaire (Concessionaire shall in turn require the Contractor) to carry out, or cause to be carried out, tests specified by it in accordance with Good Industry Practice. One half of the costs incurred on such tests, and to the extent certified by the Independent Engineer as reasonable, shall be reimbursed by the Authority to the Concessionaire

8.6 Provisional Completion Certificate (Clause 14.3)

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

A copy of PCOD enclosed at **ANNEXURE-6**.

8.7 Completion Certificate (Clause 14.4)

- Upon completion of Punch list items appended to the Provisional Completion Certificate within 90 days of issuance of Provisional Complete Certificate, Completion Certificate shall be issued to the Concessionaire.

A copy of CC enclosed at **ANNEXURE-7**.

8.8 Change of scope (Article 16)

Change of scope proposals were initiated during construction period and consented by the MPRDCL. Details are given in **ANNEXURE 9**.

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

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

8.10 Maintenance Requirements (Clause 17.2)

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

8.11 Maintenance Manual (Clause 17.3)

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

8.12 Maintenance Programme (Clause 17.4)

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

8.13 Damages for breach of Maintenance Obligations (Clause 17.8)

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

8.14 Monthly status reports (Clause 19.1)

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

8.15 Annuity (Clause 27)

The Authority agrees and undertakes to pay the Concessionaire for each annuity Payment period on each annuity payment date as set forth in schedule Y the sum of Rs 12.06 Crores.

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

Table 8.1: Status of Annuity Payments

S. No.	Particulars	Paid on
1	1 st Annuity	18-Dec-14
2	2 nd Annuity	14-May-15
3	3 rd Annuity	18-Nov-15
4	4 th Annuity	13-May-16
5	5 th Annuity	18-Nov-16
6	6 th Annuity	17-May-17
7	7 th Annuity	30-Nov-17
8	8 th Annuity	29-May-18
9	9 th Annuity	15-Nov-18
10	10 th Annuity	21-May-19
11	11 th Annuity	13-Nov-19
12	12 th Annuity	22-May-20

The Authority is paying all the annuities regularly.

8.16 Concession Fee (Article 26)

- In consideration of the grant of Concession, the Concessionaire shall pay Concession Fee of Rs.1.00 per year during the Concession Period
- Concession Fee shall be paid in advance within 90 days of the commencement of the Accounting Year.
- Yearly the Concessionaire is paying the Concession Fee to the MPRDC.

8.17 Change in Law (Article 41)

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

CHAPTER 9. INSURANCE

9.1 General

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

Accordingly, the Concessionaire has procured the following insurances for mitigating the risks Copy of insurance is given **ANNEXURE 8**.

Table 9.1: Insurance Details

Name of the Policy	Insurance Company	Policy No	Effective Period		Description of the Policy
			From	To	
Civil Engineering Completed Risk	National Insurance Company Limited	3213004419 10001989	27.3.2020	26.3.2021	Road and Structure

CHAPTER 10. CONCLUSION

10.1 General

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

10.2 Pavement Condition

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

10.3 Condition of Structures

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

10.4 Road safety

Pavement marking is in fair condition and number of sign boards are provided as per IRC SP 73-2007. The condition of sign boards & other road appurtenances like metal beam crash barriers is fair.

10.5 Maintenance

- Routine maintenance is being carried out by O&M contractor effectively, based on documents reviewed, time-to-time observations made by client/Authority are being complied and no outstanding NCR's are to be attended as on date.
- Major maintenance (MM) /Periodic maintenance was carried recently and next MM is scheduled in the year 2028.

10.6 Epilogue

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

ANNEXURES

Annexure 1: Pavement Condition

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

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
(i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana - SH-31																
0+000	1+000								G		P+E	F	Fair	LD	F	
1+000	2+000								G		E	F	Fair	ULD	PF	
2+000	3+000								G		E	F	Fair	ULD	PF	
3+000	4+000								G		E	F	Fair	ULD	PF	
4+000	5+000								G		E	F	Fair	ULD	PF	
5+000	6+000								G		E	F	Fair	ULD	PF	
6+000	7+000								G		E	F	Fair	ULD	PF	
7+000	8+000								G		E	F	Fair	ULD	PF	
8+000	9+000								G		E	F	Fair	ULD	PF	
9+000	10+000								G		E	F	Fair	ULD	PF	
10+000	11+000								G		E	F	Fair	ULD	PF	
11+000	12+000								G		E	F	Fair	ULD	PF	
12+000	13+000								G		E	F	Fair	ULD	PF	
13+000	14+000								G		E	F	Fair	ULD	PF	
14+000	15+000								G		E	F	Fair	ULD	PF	
15+000	16+000								G		E	F	Fair	ULD	PF	
16+000	17+000								G		P+E	F	Fair	LD	F	
17+000	18+000								G		P+E	F	Fair	LD	F	

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

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
18+000	19+000								G		E	F	Fair	ULD	PF	
19+000	20+000								G		E	F	Fair	ULD	PF	
20+000	21+000								G		E	F	Fair	ULD	PF	
21+000	22+000								G		E	F	Fair	ULD	PF	
22+000	23+000								G		E	F	Fair	ULD	PF	
23+000	24+000								G		E	F	Fair	ULD	PF	
24+000	25+000								G		E	F	Fair	ULD	PF	
25+000	26+000								G		E	F	Fair	ULD	PF	
26+000	27+000								G		E	F	Fair	ULD	PF	
27+000	28+000								G		E	F	Fair	ULD	PF	
28+000	29+000								G		E	F	Fair	ULD	PF	
29+000	30+000								G		E	F	Fair	ULD	PF	
30+000	31+000								G		E	F	Fair	ULD	PF	
31+000	32+000								G		E	F	Fair	ULD	PF	
32+000	33+000								G		E	F	Fair	ULD	PF	
33+000	34+000								G		E	F	Fair	ULD	PF	
34+000	35+000								G		E	F	Fair	ULD	PF	
35+000	36+000								G		E	F	Fair	ULD	PF	
36+000	37+000								G		E	F	Fair	ULD	PF	
37+000	38+000								G		E	F	Fair	ULD	PF	
38+000	39+000								G		E	F	Fair	ULD	PF	

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

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
39+000	40+000								G		E	F	Fair	ULD	PF	
40+000	41+000								G		E	F	Fair	ULD	PF	
41+000	42+000								G		P+E	F	Fair	LD	F	
42+000	42+270								G		P+E	F	Fair	LD	F	
(ii) Bamniya-Petlabad-Raipururiya																
0+000	1+000								G		P+E	F	Fair	LD	F	
1+000	2+000								G		E	F	Fair	ULD	PF	
2+000	3+000								G		E	F	Fair	ULD	PF	
3+000	4+000								G		E	F	Fair	ULD	PF	
4+000	5+000								G		E	F	Fair	ULD	PF	
5+000	6+000								G		E	F	Fair	ULD	PF	
6+000	7+000								G		E	F	Fair	ULD	PF	
7+000	8+000								G		E	F	Fair	ULD	PF	
8+000	9+000								G		E	F	Fair	ULD	PF	
9+000	10+000								G		P+E	F	Fair	LD	F	
10+000	11+000								G		E	F	Fair	ULD	PF	
11+000	12+000								G		E	F	Fair	ULD	PF	
12+000	13+000								G		E	F	Fair	ULD	PF	
13+000	14+000								G		E	F	Fair	ULD	PF	
14+000	15+000								G		E	F	Fair	ULD	PF	
15+000	16+000								G		E	F	Fair	ULD	PF	

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

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair/Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P/VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD/NO)	Condition (PF/F)***	
16+000	17+000								G		P+E	F	Fair	LD	PF	
17+000	18+000								G		P+E	F	Fair	LD	PF	
18+000	18+180								G		P+E	F	Fair	LD	PF	
(iii) Neemuch –Jawad - Khoh - Nayagaon																
0+000	1+000								G		E	F	Good	ULD	PF	
1+000	2+000								G		E	F	Good	ULD	PF	
2+000	3+000								G		E	F	Good	ULD	PF	
3+000	4+000								G		E	F	Good	ULD	PF	
4+000	5+000								G		E	F	Good	ULD	PF	
5+000	6+000								G		E	F	Good	ULD	PF	
6+000	7+000								G		E	F	Good	ULD	PF	
7+000	8+000								G		E	F	Good	ULD	PF	
8+000	9+000								G		E	F	Good	ULD	PF	
9+000	10+000								G		P+E	F	Good	LD	PF	
10+000	11+000								G		P+E	F	Good	LD	PF	
11+000	12+000								G		E	F	Good	ULD	PF	
12+000	13+000								G		E	F	Good	ULD	PF	
13+000	14+000								G		E	F	Good	ULD	PF	
14+000	15+000								G		E	F	Good	ULD	PF	
15+000	16+000								G		E	F	Good	ULD	PF	
16+000	17+000								G		P+E	F	Good	LD	PF	

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

Chainage (Km.)		Pavement Condition						Riding Quality		Pavement Edge Drop (cm)	Shoulder		Embankment Condition (Good/Fair / Poor)	Road Side Drain		Remarks
From	To	Cracking (%)	Ravelling (%)	Potholing (%)	Bleeding (%)	Rutting	Patching (%)	Speed (Km./hr.)	Quality (G/F/P /VP)		Composition	Condition (Fair / Poor/ Damaged)		Type (LD/ULD/CD /NO)	Condition (PF/F)***	
17+000	18+000								G		P+E	F	Good	LD	F	
18+000	19+000								G		E	F	Good	ULD	PF	
19+000	20+000								G		E	F	Good	ULD	PF	
20+000	21+070								G		P+E	F	Good	LD	PF	
(iv) Soyat-Pidawa																
0+000	1+000								G		E	F	Good	LD	F	
1+000	2+000								G		E	F	Good	ULD	PF	
2+000	3+000								G		E	F	Good	ULD	PF	
3+000	4+000								G		E	F	Good	ULD	PF	
4+000	5+000								G		E	F	Good	ULD	PF	
5+000	6+000								G		E	F	Good	ULD	PF	
6+000	7+000								G		E	F	Good	ULD	PF	

Annexure 2: Condition of Structures

Jaora-Piploda Road											
S. No.	Chainage	Type of Structure	Sub structure	Super structure	Crash barrier	Expansion Joint	Approach slabs	Drainage spouts	Approaches	Wearing coat	Toe wall
1	16+250	Minor Bridge	Good	Good	Good	Fair	-		Good	Good	Good
2	19+115	Minor Bridge	Good	Good	Good	Fair	-		Good	Good	Good
Piploda -Sailana Road											
1	13+914	Minor Bridge	Good	Good		Fair	-		Good	Good	-
2	14+720	Minor Bridge	Good	Fair	-	Fair	-		Good	Good	-
Neemuch -Nayagaon Road											
1	11+466	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
2	19+656	Minor Bridge	Good	Good	-		-		Good	Good	-
3	20+535	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
Bamaniya - Raipurliya Road											
1	0+884	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	-
2	3+809	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good
3	6+840	Minor Bridge	Good	Good	Good	Fair	Good		Good	Good	Good

Annexure 3: Condition of Box/Slab/Pipe Culverts

Box/Slab Culverts

S. No.	Chainage	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall	Remarks
Jaora - Piploda							
1	0+772	Good	Good		-	Good	
2	19+263	Good	Good		-	Good	
3	19+580	Good	Good		-	Good	
4	20+205	Good	Good		Good	Good	
5	21+795	Good	Good		-	Good	
6	22+780	Good	Good	Good	-	Good	
7	23+230	Good	Good	Good	Good	Good	
8	23+960	Good	Good	Fair	-	Good	
Piploda – Sailana							
1	1+900	Good	Good	Fair	-	Good	-
2	8+350	Good	Good	Fair	-	Good	-
3	8+800	Good	Good	Fair	-	Good	-
4	10+100	Good	Good		-	Good	-
5	10+990	Good			-	Good	
6	13+100	Good	Good		-	Good	-
7	15+840	Good	Good		-	Good	
8	16+503	Good	Good		-	Good	-
9	17+206	Good	Good		-	Good	
Neemuch - Jawad - Nayagaon							
1	5+840	Good	Good	Good	-	Good	-
2	10+200	Good	Good		-	Good	
3	11+760	Good	Good		-	Good	-
4	12+365	Good	Good		-	Good	-
5	13+960	Good	Good		-	Good	-
6	16+760	Good	Good	Good	-	Good	-
7	20+720	Good	Good	Good	-	Good	-
Bamaniya - Petlawad							
1	5+060	Good	Good		Good	Good	-
2	5+780	Good	Good		Good	Good	-
3	9+280	Good	Good		Good	Good	-
4	11+580	Good	Good		Good	Good	-
5	13+300	Good	Good		Good	Good	-
6	14+204	Good	Good		Good	Good	

S. No.	Chainage	Box / Slab	Return wall	Quadrant pitching	Toe wall	Parapet wall	Remarks
7	15+380	Good	Good	Good	Good	Good	-
8	16+215	Good	Good	Good	Good	Good	-
9	16+483	Good	Good		Good	Good	-

Hume Pipe Culverts

S. No.	Chainage	Hume Pipe	Head wall
Jaora – Piploda			
1	0+800	Fair	Good
2	1+300	Fair	Good
3	3+380	Fair	Good
4	4+802	Fair	Good
5	5+400	Fair	Good
6	6+322	Fair	Good
7	6+500	Fair	Good
8	6+800	Fair	Good
9	7+080	Fair	Good
10	9+565	Fair	Good
11	9+990	Fair	Good
12	10+300	Fair	Good
13	11+200	Fair	Good
14	11+400	Fair	Good
15	12+500		
16	14+500	Good	Good
17	14+670	Good	Good
18	14+800	Good	Good
19	15+050	Good	Good
20	17+800	Good	Good
21	18+200	Good	Good
22	18+300	Good	Good
23	18+450	Good	Good
24	19+100	Good	Good
25	19+800	Good	Good
26	23+940	Good	Good
Piploda – Sailana			
1	0+400	Good	Good
2	0+580	Good	Good
3	4+057	Good	Good

S. No.	Chainage	Hume Pipe	Head wall
4	5+355		Good
5	6+605	Good	Good
6	7+400	Good	Good
7	11+400	Good	Good
8	15+410	Good	Good
9	17+800	Good	Good
Neemuch - Jawad - Nayagaon			
1	1+042	Good	Good
2	1+750	Good	Good
3	2+300	Good	Good
4	2+430	Good	Good
5	3+340	Good	Good
6	4+080	Good	Good
7	5+200	Good	Good
8	7+680	Good	Good
9	8+890	Good	Good
10	10+980	Good	Good
11	14+350	Good	Good
12	16+900	Good	poor
Soyat – Pirawa			
1	0+679	Good	Good
2	1+720	Good	Good
3	2+555	Good	Good
4	3+016	Good	Good
5	4+026	Good	Good
6	4+326	Good	Good
7	4+746	Good	Good
8	5+326	Good	Good
9	5+556	Good	Good
Bamaniya - Petlawad			
1	0+250	Good	Good
2	1+150	Good	Good
3	1+180	Good	Good
4	1+349	Good	Good
5	1+893	Good	Good
6	1+970	Good	Good
7	2+350	Good	Good
8	2+520	Good	Good

S. No.	Chainage	Hume Pipe	Head wall
9	3+385	Good	Good
10	3+985	Good	Good
11	4+180	Good	Good
12	5+190	Good	Good
13	6+285	Good	Good
14	6+542	Good	Good
15	7+120	Good	Good
16	7+598	Good	Good
17	7+800	Good	Good
18	7+920	Good	Good
19	8+010	Good	Good
20	8+720	Good	Good
21	8+980	Good	Good
22	9+470	Good	Good
23	11+050	Good	Good
24	11+520	Good	Good
25	12+100	Good	Good
26	12+240	Good	Good
27	12+500	Good	Good
28	13+350	Good	Good
29	13+700	Good	Good
30	13+930	Good	Good
31	14+720	Good	Good
32	15+600	Good	Good
33	15+820	Good	Good

Annexure 4: O&M Costs

Routine Maintenance cost for 1 year

S. No.	Item	Frequency	Unit	No.	Frequency per year	Quantity	Rate	Amount	Remarks
1	General Cleaning in Carriageway & Shoulders Rural area	Monthly	Kms.	87.965	12	4	350	1,477,812	04 Nos of Labour
2	General Cleaning in Carriageway & Shoulders Urban area	Twice in a month	Kms.	27.12	24	4	350	911,232	04 Nos of Labour
3	Watering in Median Plants	Once in Week	Kms.	27.12	52	1	1939	2,734,455	01 Nos of Labour
4	Watering in Avenue plants	Once in Week	Kms.	0	52	0	1939	-	
5	Median Maintenance (Grass cutting and plant trimming)	Once in Month	Kms.	27.12	12	0	21000	-	02 Nos of Labour - 2 x 350 = 700 x 30 = 2,52,000
6	ROW Cleaning	Half yearly	Kms.	43.9825	2	5	350	153,939	5 Nos of labour per Km. (50% of the Project length)
7	Cleaning of Culverts	Half yearly	Nos.	127	2	2	650	330,200	3 Nos of Labour along with JCB or Excavator
8	Road Furniture Cleaning	Quarterly	Kms.	87.965	4	2	350	246,302	02 Nos of Labour
9	Maintenance of Bus shelters	Monthly	Nos.	65	6	2	350	273,000	2 Nos/ Bus shelter/month
10	General Cleaning in Building & Facilities	Daily	Nos.	0.00	6	60	350	-	02 Nos of Labour for 30 days
11	Bridges	Half yearly	Nos.	11	2	2	350	15,400	02 Nos of Labour for removal of vegetation/Structure
								6,142,340	

EQUIPMENT SUPPLY

1	TRUCK TIPPER 6-8 CUM CAPACITY	Monthly	Nos.	1	12		200000	-	(2000000 is the cost of vehicle, considering 10% Rental per year) including maintenance
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Project: Development of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad-Khoh (iv) Soyat-Pidawa. BOT (Annuity) basis.

S. No.	Item	Frequency	Unit	No.	Frequency per year	Quantity	Rate	Amount	Remarks
2	Water Tanker Cap 12 KL for Median	Monthly	Nos.	2.4	12	0	440000	-	(2200000 is the cost of vehicle, considering 20% Rental per year) including maintenance
3	Grass cutter	Monthly	Nos.	2.4	12	0	12000	1,464	(12000/year)
4	Bikes	Monthly	Nos.	2.4	12	0	2500	4,880	Per Supervisor/Per Month
5	Building Maintenance	Yearly			12			-	
6		Yearly	Nos.		12		5000	60,000	10000/month
								66,344	
								6,208,684.00	

Incidental cost for 1 year

S. No.	Item		Unit	No.	Frequency	Quantity	Rate	Amount	Remarks
1	Road marking	Half yearly	Sqm.	1	1	2,048.27	516	1,056,907	10 % of Total Project length on B/S for 1 year
2	Carriageway Maintenance (Pot Holes etc)	Yearly	Sqm.	1	1	777	168	130,536	5% of Flexible Pavement
3	Maintenance of Earthen Shoulder	Half yearly	Cum.	1	3	1319.475	225	890,646	5% of total Shoulder length throughout the project
4	Sign Board	Quarterly	Km.	1	1	13	4000	52,000	2.5 % of Total sign boards per half year (considered 500 Nos)
5	MBCB	Monthly	RMT			37.50	2400	90,000	2.5% of Total qty per year - (considered 2400 per number)
6	Mile Stone (Km. Stone/ HM Stone / ROW stone etc.)	Quarterly	Nos.	87.965	4	22.00	2250	198,000	5 % of total stones per year (unable to understand the backup)
7	ROW Fencing (If available)	Quarterly	Km.		4			-	10 % of total ROW fencing per year
8	Kerb	Yearly	Km.	0	1	0.0	250	-	2 % of total Kerbings per year
9	Electrical Poles	Yearly	Nos.	0	1	0	55000	-	3 % of total poles per year
10	Replacement of Rigid pavement Panels	Yearly	Ls.	1	1	0.00	4000	-	Considered 1% of the total volume
11	Providing Reinforced cement concrete crash barrier at the edges of the bridge structures	Yearly	Rmt.	0		0	3985	-	3% of Length replacement in every 5 years (Quantity to be estimated)

S. No.	Item	Unit	No.	Frequency	Quantity	Rate	Amount	Remarks
	constructed with M-40 grade concrete with HYSD-Fe 500 TMT reinforcement concrete per Rmt conforming to IRC:21 and fixing with dowel bars 16 mm dia to old concrete using epoxy grout as per drawing and Technical Specifications and as directed by the Engineer.							
Total amount for 1 Year							2,418,089	

Operational Expenses

S. No.	PARTICULARS	Amount
1	Man Power	₹ 0
2	Fuel for Generator & Vehicles	₹ 0
3	Electricity	₹ 0
4	Stationary	₹ 10,000
5	Replacement of Electrical Fixtures	₹ 0
6	Refurbishment of Toll Plaza Equipment	₹ 0
	Total Amount	₹ 10,000

Summary of Major/Periodic Maintenance

Description	Due date	Base cost	Esc Period	Escalation Rate per Year	Cost of MMR on due date @ 5% Escalation	In crores
Date of Estimataion	20-01-2021					
Major Maintenance - Highway	01-04-2021	16,47,43,158	0.20	3.0%	16,57,31,617	16.57
Major Maintenance - Highway	01-04-2028	16,47,43,158	6.20	3.0%	19,53,85,385	19.54
				Total	₹ 36,11,17,002	36.11

Major Maintenance BOQ

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
Pavement (Asphalt & Concrete)								
1	Providing and applying tack coat with Rapid Setting Bitumen Emulsion using emulsion pressure distributor on the prepared bituminous/granular surface cleaned with mechanical broom, Ref. to Technical specification 503.			-			-	
(a)	On Bituminous surface @ 2.0 Kg. to 3.0 Kg./10 Sqm.	Sqm.	6,90,415.00	14.00	96,65,810	6,90,415.00	14.00	96,65,810
2	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size (table 500-17), premixed with VG Grade Bitumen and filler, transporting the hot mix to work site, laying	Cum.	15,534.34	7,480.00	11,61,96,845	15,534.34	7,480.00	11,61,96,845

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers, Pneumatic Tyre Rollers to achieve the desired compaction as per Technical specification clause No. 507 and mix design conforming the IRC -111 and IRC 37.							
	Providing and laying bituminous concrete using a batch type Hot Mix Plant using crushed aggregates of size	Cum.	-	6,800.00		-	6,800.00	
	Micro surfacing	Sqm.	1,72,603.75	160.00	2,76,16,600	1,72,603.75	160.00	2,76,16,600
3	Repair of joint Grooves with Epoxy Mortar Repair of spalled joint grooves of contraction joints, longitudinal joints and expansion joints in concrete pavements using epoxy mortar or epoxy concrete)	MTRS	2,097.60	250.00	5,24,400	2,097.60	250.00	5,24,400
4	Texturing of Rigid pavement (considering 50% for 7 years)	Sqm	1,311.00	130.00	1,70,430	1,311.00	130.00	1,70,430
	Total				15,41,74,085			15,41,74,085
	Junctions, Traffic Signs Marking and Other Appurtenances							
1	Providing and laying of cement concrete kerb without channel (M-20 Grade) over WMM foundation using kerb laying machine & proper curing complete, as per drawing & technical specification clause no.409, 1700 and as per the instructions of Employer's representative. - Consider 5% for construction period.	Rmt.	-	380.00		-	380.00	
2	Providing and laying lane markings of hot	Sqm.	20,482.70	516.00	1,05,69,073	20,482.70	516.00	1,05,69,073

S. No.	DESCRIPTION	Unit	First cycle			Second cycle		
			QUANTITY	RATE	AMOUNT	QUANTITY	RATE	AMOUNT
	applied thermoplastic compound 2.5 mm thick including reflectorizing glass beads @ 250 gms per sqm area, thickness of 2.5 mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes, Ref. to Technical specification 803.							
3	Road Studs	Nos.	-	750.00		-	750.00	
4	Kerb painting		-	250.00		-	250.00	
	Total			-	1,05,69,073		-	1,05,69,073
	Grand Total				16,47,43,158			16,47,43,158

Annexure 5: Letter of Award



MADHYA PRADESH ROAD DEVELOPMENT CORPORATION LIMITED

(Govt. of M.P. Undertaking)
16-A, Arera Hills, Bhopal - 462 011
Tel.: (O) 0755-2765196, 205, 213, 216 (EPBX) Fax : 91-755-2572643
Website : www.mprdc.nic.in.

No. MPRDC/BOT/MDR/P-IV/2012/
Bhopal, dated 09 November, 2012

9.539

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

Sub: Regarding development of (i) Jaora-Piploda-Jalandharkheda & Piploda-Sailana (ii) Raipuria-Petlabad-Bamania (iii) Jawad-Khoh & (iv) Soyat-Pidawa Major District Road under Package-IV on BOT (Annuity) basis.

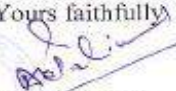
In response to your Pre-Qualification you have submitted Technical and Financial Bid for development of (i) Jaora-PiplodaJalandharkheda & Piploda-Sailana (ii) Raipuria-Petlabad-Bamania (iii) Jawad-Khoh & (iv) Soyat-Pidawa Major District Road under Package-IV on BOT (Annuity) basis. In this connection, kindly refer to the clarification, addendum etc. issued from time to time before submission of the tender document.

Also refer to your bid documents containing an unconditional price bid of Rs. **12.06 crores (Rupees twelve crores six lacs only)** as Annuity Amount payable in terms of Clause 27 of the Concession Agreement.

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

Encl: **Duplicate copy of LoA**



Yours faithfully

Arun Paliwal
Dy. General Manager

Connecting People Through quality infrastructure

Annexure 6: Provisional Completion Certificate

TES

T Theme Engineering Services Pvt. Ltd.
E M1, 191, Vyas Nagar, Near Hanuman & Shankar Temple
S Ujjain-456010 (M.P.). Tel. 0734-2519209
Email: themeujain@gmail.com

Ref. No: - Package-02/TL/2014/ 807 Date: - 09/05/2014

To
The Chief Engineer (MDR)
MPRDC, 45-A, Arera Hills,
Bhopal (M.P)


Sub: - Development of (I) Jaora-Piplodha Jalandharkheda & Piploda-Sailana (II) Bamniya -
Petlabad-Raipururiya (III) Neemuch-Jawad-Khoh-Nayagaon (IV) Soyat-Pirawa Major District
Roads on DBFOT under Package - IV on BOT (Annuity) basis: **Regarding issue of
Provisional Certificate as per Article-14, clause 14.3 of Concession Agreement.**

Ref: - Concessionaire's letter no. DBL-JSTL/TL/PKG-IV/2014-03/173 dated 30.03.14.

Dear Sir,

With reference to above the Provisional Certificate for completion of construction works
of above subjected roads along with the punch list is submitted herewith for your kind perusal and
necessary action please.

Thanking you.

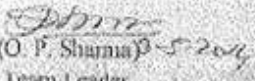

(O. P. Sharma)
Team Leader

Enc: - Provisional Certificate with punch list.

Copy to:

- 1) General Manager MPRDC, Indore.
- 2) Divisional Manager, MPRDC, Ujjain.
- 3) Sh. Mahinder Singh, Chief General Manager, TES, Jaipur.
- 4) Authorized Signatory, M/S DBL Jaora Sailana Tollways Ltd, E-5/99, Arera Colony,
Bhopal.

Encl: - Provisional Certificate with punch list.


(O. P. Sharma)
Team Leader

Theme Engineering Services Pvt. Ltd.
B-24, Gokul Vatika, Jawahar Circle, Jaipur-3012018(Raj.). Ph: +91-141-2724495-96-97,
Telefax: +91-141-2724491. Email: theme@dataone.in, theme@themeengineering.com

Annexure 7: Completion Certificate



T **Theme Engineering Services Pvt. Ltd.**
E B-24, Gokul Vatika, Jawahar Circle, Jaipur-302018 (Raj.)
S ☎ +91-141-2724495-96-97, fax: +91-141-2724491
E-mail: theme@dataone.in, theme@themeengineering.com

Theme/MPRDC/Ujjain/880/14/1185

Date: 14.10.2014

To,
The Chief Engineer,
MPRDC
45- A Arera hills
Bhopal- 462011

Sub: - Independent Engineer for development of major roads on BOT, BOT(Toll + Annuity) basis under Ujjain division .

Reg: - Completion Certificate (i) (Jaora – Pipaloda – Jalandharkheda & Pipaloda – Sailana, (ii) Raipururiya –Petlawad-Bamaniya, (iii) Neemuch – Jawad – Khor, (iv) Soyat – Pidawa, Road of Major District Roads

Dear Sir,

This is with reference to our letter no. Theme/MPRDC/Ujjain/880/14/993 dated 06.09.2014, addressed to Divisional Manager, MPRDC Ujjain and a copy submitted to your office, seeking prior approval to issue **Completion Certificate** of the above subject project in compliance of the clause 12 under "Terms of Reference" of Section 6 of Contract Agreement. On subsequent discussions with your good self and General Manager MPRDC, Indore on 14th October 2014 and with DM, MPRDC Ujjain, it is pointed out that the signature of the then Divisional Manager MPRDC Ujjain on the **Punch List** submitted vide our Ujjain's office letter No Package II/TL/2014/916 dated 01.08.2014 be treated as approval from MPRDC.

As such, the Completion Certificate in standard format with this forwarding letter considering your prior approval is recommended.

Thanks & Regards,

Sincerely Yours

Mahinder Singh

(Chief General Manager)

Theme Engineering Services Pvt. Ltd

B- 24, Gokul Vatika, Jawahar Circle

Jaipur, (Raj)- 302018

☎ +91-141-2724495-96-97,

fax: +91-141-2724491

Annexure 8: Insurance

पॉलिसी अनुसूची/Policy Schedule - Civil Engineering Completed Risk

Policy Number: 321300441910001989
व्यवसाय स्रोत/ Business Source: 910355
जारीकर्ता कार्यालय/Issuing Office: बकिराह वीरत अडिवा/Sales Channel Code: 9103550000001
कार्यालय कोड/Office Code: 321300
नाम/Name: Aspire Insurance Brokers Pvt Ltd - HO Contact Number: 8291914810
कार्यालय पता/Office Address: BHOPAL
Ltd - HO Contact Number: 8291914810
सह दस्तावेज कोड/Co Broker Code:
Customer Care Toll Free Number: 1800 345 0330
Contact Number: 755 2662822
email: customer.support@nic.co.in
Mobile Number:

ग्राहक का नाम /Customer Name: DBL JAORA SAILANA
ग्राहक आईडी /Customer ID: 9701881840
PAN /PAN: AAECD4621R
पता /Address: PLOT NO 5, INSIDE GOVIND NARAYAN SINGH GATE, CHUNA BHATTI, KOLAR ROAD, BHOPAL-462016, City: BHOPAL, District: BHOPAL, State: MADHYA PRADESH, PIN: 462016.
फोन /Phone:
ई-मेल /E-Mail:
Cell: 9826292328

पॉलिसी: 27/03/2020 के 00:00 से 26/03/2021 की मध्य रात्रि तक प्रभावी /Policy Effective from 00:00 hours, on 27/03/2020 to midnight of 26/03/2021

विवरण/Particulars	रकम/Amount	कवर नोट संख्या और तारीख/ Cover Note Number and Date	प्रस्ताव संख्या और तारीख/ Proposal Number and Date	रसीद संख्या और तारीख/ Receipt Number and Date	पहिली पॉलिसी संख्या और समाप्ति तिथि/ Previous Policy Number and Expiry Date
प्रीमियम/ Premium	₹ 11,61,034.00	NA			
CGST	₹ 1,04,493.00				
SGST/UTGST	₹ 1,04,493.00				
IGST	₹ 0.00				
कंपना चार्ज/उपकर/Kerala Flood Cess	₹ 0.00		8800200327086890 Dt. 27/03/2020		
कम जोएसटी/टैडीएस/ Less:GST_TDS	₹ 0.00				
पुनर्प्राप्ती योग्य स्टाम्प ड्यूटी/Recoverable Stamp Duty	₹ 0.00			321300811910007666 Dt. 27/03/2020	
कुल/Total Amount	₹ 13,70,020.00				

(Rupees Thirteen Lakh Seventy Thousand Twenty Only.)

Location: Jaora Piploda & Jalandharkheda & Piploda & Sailana (i) Raipuria- Petlabad & Bamania (ii) Jawad - Khoh & (iv) Soyat - Pidawa Major District Road, Madhya Pradesh Ratlam, Jaora, 457226.

Sr.No	Type of Risk	Description of Risk	Earthquake Zone	Sum Insured of the risk(₹)	Excess(₹)
1	Roads	ROAD AND STRUCTURE Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	1,10,32,35,000.00	1,00,000.00
2	Roads	ROAD AND STRUCTURE Road Furniture, Fixtures, Electrical Poles Lighting & Fittings, Signboard & Safety Barrier	Zone IV	5,80,65,000.00	1,00,000.00

संबंधित शर्तों, प्रमाणों एवं वारंटी / Clauses, Endorsements and Warranties Applicable: Policy is subject to following conditions: POLICY IS SUBJECT TO THE FOLLOWING CONDITIONS:

- 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.
- Policy is Applicable for Roads & Road side structures & Toll plazas & Bridges & Flyovers on Land.
- No Coverage for (Road) Transportation Tunnels
- No Coverage for Marine Vessel Impact Damage.
- Each 72 hour period will be treated as One occurrence/event for STFI & EQ for application of Excess.

PROJECT DETAILS COVERED UNDER THE POLICY AS FOLLOWS:

Jaora Piploda Jalandharkheda & Piploda Sailana (ii) Raipuria Petlabad Bamania (iii) Jawad Khoh & (iv) Soyat Pidawa Major District Road under Package IV on BOT (Annuity) Basis.

Name of the co Insured under the policy is Diip Buildcon Ltd. & MPRDCL.

Printed on 27/03/2020 by ID: 75159

Page no: 1



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पॉलिसी अनुसूची/ Policy Schedule - Civil Engineering Completed Risk

Policy Number:
321300441910001989

जारीकर्ता कार्यालय/Issuing Office
 कार्यालय कोड /Office Code: 321300

कार्यालय पता /Office Address: BHOPAL
 DIVISION II B-8, Indrapuri, B H E L, Bhopal,
 Madhya Pradesh - 462022.

State Code: 23, Madhya Pradesh
 GSTIN: 23AAACN9967E17B
 Contact Number: 755 2682822
 eMail: 321300@nic.co.in
 Mobile Number:

सुरक्षास्रोत /Business Source: 910355

वितरक चैनल/वितरण/Sales Channel/Code:
 9103550000001

नाम/Name: Aspire Insurance Brokers Pvt
 Ltd - MO Contact Number: 8291914810
 राई दलाल कोड / Co Broker Code:

Customer Care Toll Free Number:
1800 345 0330
email:customer.support@nic.co.in

Name of the contractor under the policy is Dilp Buildcon Ltd and subcontractor is VARIOUS., Agreed Bank Clause, Terrorism Damage Exclusion Warranty, Riot, Strike, and Malicious Damage Clause.

जसिकी गावाही मे दनि/ गह/ वरुष को उपरोक्त उल्लेखित कार्यालय पते पर अश्वेहस्ताक्षरी के विधिवत अधिष्ठित किया जा रहा है उसके हाथ मरिधारति करि जाए। यह अनुसूची, संलग्न पॉलिसी, खण्ड, सूचकन और पॉलिसी शब्दों, जो कंपनी वेबसाइट <https://nationalinsurance.nic.co.in> पर उपलब्ध है, को एक अनुबंध के रूप में एक साथ पढ़ा जाए तथा बड़े भी शब्द या अभिव्यक्ति जिसके लिए यह विशेषित अर्थ पॉलिसी या अनुसूची के किसी भी हिस्से में संलग्न किया गया हो, एक ही अर्थ में व्याख्या करेगा चाहे जहाँ भी उल्लेखित हो। यह अश्वेहस्ताक्षर दसि जाता है कि प्रीमियम चेक के अस्वीकृति के मामले में, यह दस्तावेज स्वतः प्रामाणिकता नरिस्त हो जायगी। **IN WITNESS WHEREOF, the undersigned being duly authorized herunto set his/ her hand at the office address mentioned above, this 27/March/2020. This schedule, the attached policy, the clauses, the endorsements and policy wordings as available in the website <https://nationalinsurance.nic.co.in> shall be read together as one contract and any word or expression to which the specific meaning has been attached in any part of this policy or of the schedule shall bear the same meaning wherever it may appear. It is warranted that IN CASE OF DISHONOUR OF THE PREMIUM CHEQUE, THIS DOCUMENT STANDS AUTOMATICALLY CANCELLED 'AB-INITIO'**

इश्वरीनसुरंस लिमिटेड



राजी मेथनल इन्शुरेन्स कंपनी लिमिटेड
 For and on behalf of National Insurance Company Limited

अधिकृत हस्ताक्षरकर्ता/Authorized Signatory



Annexure 9: Change of Scope

No. ⁸²⁰⁶.....MPRDC/MDR/2014 Bhopal, date...../10/14

To,

Team Leader,
M/s Theme Engineering Services,
MI-191, Vyas nagar Niyat Hanuman &
Shankar Temple,
Ujjain-456010 (M.P)


Sub:- Development of (i) Jaora- Piploda -Jalandharkheda &-Piploda Sailana Road (ii) Raipuria-Petlabad-Bamania Road (iii) Javad Road to Khoh Road (iv) Soyat-Pidawa Road - Change of Scope Proposal

Ref: 1. Minutes of Advisory Committee meeting dated 22.9.2014
2 Your letter no. IV/TL/2014/976 dated 20.9.2014

Please find enclosed the Minutes of meeting of Advisory Committee of its meeting dated 22.09.2014 the change of scope for the work (i) Jaora- Piploda -Jalandharkheda &-Piploda Sailana Road (ii) Raipuria-Petlabad-Bamania Road (iii) Javad Road to Khoh Road (iv) Soyat-Pidawa Road.

In principle approval of change of scope as per minutes of advisory committee (enclosed) are hereby granted with the instructions to submit financial implication as per provision of concession agreement within 15 days time.

Encl: Minutes of meeting

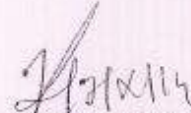

Chief Engineer (MDR)
MPRDC Bhopal

Encl.No. ⁸²⁰⁷.....MPRDC/MDR/2014 Bhopal, dated : 7/10/14

Copy to :-

1. General Manager, MPRDC, Indore
2. General Manager (Fin.), MPRDC, Bhopal.
3. Divisional Manager, MPRDC, Ujjain
4. M/s DBL, Bhopal

Encl: Minutes of meeting


Chief Engineer (MDR)
MPRDC Bhopal

MINUTES OF MEETING

Meeting of advisory committee of MPRDC for change of scope for Development of (i) Jaora-Pipaloda- Jalandharkheda & Pipaloda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad- Khoh (iv) Soyat – Pidwa Major District Road under Package-IV on BOT (Annuity) Basis has been held in the office of MPRDC on dated 22-09-2014. Following officials were present in the meeting:-

1. Shri. A.S. Chendke , Technical Advisor, MPRDC
2. Shri. Narendra Kumar, Chief Engineer (MDR)
3. Shri. Aksh Chaturvedi, General Manager (MDR)
4. Dr. Arun Paliwal, General Manager (Finance)
5. Shri. A. L. Suryavanshi, General Manager, MPRDC, Indore
6. Shri. Rakesh Jain, Divisional Manager ,(Ujjain)
7. Shri Anil Shrivastava, AGM (MDR)
8. Shri O. P. Sharma, Team Leader, M/s Theme Engineering Services Pvt Ltd, Ujjain
9. Shri. Manish Dixit, Project Manager, DBL, Concessionaire

The work change of scope recommended by Independent Engineer vide its letter no. Package-IV/TL/2014/976 dated 20.09.2014. These have been discussed in meeting as below.

Recommendation of IE Change of Scope for Road Works in Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road Project

Place/Location	As per Schedule-B	As Constructed by Concessionaire on Site	Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	Design Length as per Schedule-B	Actual Length of Roads		
Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road	42.272	42.235	Actual Length of Project is increased . It is recommended to consider increased length as positive Change of Scope	Committee agreed to consider as positive change of scope as recommended by IE
Neemoch - Jawad - Khoh Road	21.070	21.000		
Raipururiya - Petlabad - Bamniya road	18.177	18.400		
Soyat - Pirawa Road	6.255	6.300		
Total Length :-	87.774	87.995		

Manish Dixit
 PM, DBL

Shri. Manish Dixit
 TL

Change of Scope for Road Works in Jaora - Pipaloda - Jalandharkheda & Pipaloda - Sailana Road Project

Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Kms)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Jaora Town	0.000	0.600	0.600	18.00	0	0.05	0.050	18.00	The length given in Schedule-B in Jaora Town was 0.60 Km. The habitation in this town start from 0 to 0.765 km. Hence the length increased to cover complete habitation stretch in this town, which is recommended to considered as Positive change of Scope.	Committee agreed to consider as positive change of scope for increased length, as recommended by IE
					0.050	0.765	0.715	18.00		
Pipaloda Town	17.100	17.900	0.800	15.00	16.980	17.780	0.800	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Sherpur Village	6.000	6.750	0.750	18.00	5.860	6.610	0.750	14.30	Construction of road work in Sherpur & Amba Village within available ROW. Land could not be made available due to public resistance in required width for construction as per schedule-B. It is recommended to considered difference of provision of as per schedule-B and actual work done as negative change of Scope	Committee agreed to consider as Negative change of scope as recommended by IE.
Amba Village	10.200	10.550	0.350	20.00	10.150	10.500	0.350	14.50		
Kariya Village	14.100	14.500	0.400	18.00	14.170	14.570	0.400	18.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Sailana Town	18.200	18.322	0.122	18.00	18.158	18.285	0.127	9.00	Construction of road work in Sailana town within available ROW. Land could not be available as required for construction as per schedule-B. It is recommended to consider difference of provision of schedule-B and actual work done as negative change of Scope	Committee agreed to consider as Negative change of scope as recommended by IE.
			3.022				3.192			

*in detail
P.M. DBL*

[Signature]
TL

Change of Scope for Road Works in Neemuch - Jawad - Khor Road Project										
Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Suwakheda	3.520	3.880	0.360	15.00	3.52	3.91	0.390	15.00	The length given in Schedule-B in Suwakheda village was 0.360 Km. The length of habitation in this village was found 0.390km at site. Hence the length increased to cover complete habitation stretch in this village, which is recommended to considered as Positive change of Scope.	Committee agreed to consider Positive change of scope as recommended by IE.
Jawad Town (4 Lane)	8.800	10.300	1.500	20.00	8.800	10.300	1.500	20.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Jawad Town	10.300	11.210	0.910	15.00	10.300	10.350	0.050	15.00	In principally approval has already granted by MPRDC letter No. 2174/MPRDC/MDR/21 dated 30/05/2014	No Change of scope.
					10.350	10.520	0.170	25.50		
					10.520	11.210	0.690	15.00		
Khor Village	15.300	17.930	2.630	15.00	15.300	17.930	2.630	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Nayagaon	20.710	21.070	0.360	15.00	20.330	21.060	0.730	15.00	In principally approval has already granted by MPRDC letter No. 2174/MPRDC/MDR/21 dated 30/05/2014	
			5.760				6.100			

Change of Scope for Road Works in Bamaniya - Petlwad - Raipururiya Road Project										
Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Bamaniya	0.000	0.700	0.700	15.00	0.000	0.210	0.210	10.50	Construction of road work in Bamaniya town was completed within available ROW. Land could not be made available as required for construction as per schedule-B. It is recommended to considered difference of provision of schedule-B and actual work done as negative change of Scope	Committee agreed to consid Negative change of scope recommended by IE.
					0.210	0.700	0.490	15.00		
Petlwad (4 Lane)	10.080	11.020	0.940	4 lane	10.080	10.520	0.460	4 lane	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
					10.520	11.000	0.480	4 lane		
Sagadiya	16.800	17.100	0.300	15.00	16.800	17.200	0.300	15.00	Constructed as per Schedule-B. No Change of scope.	No Change of scope.
Raipururiya	17.500	18.177	0.677	15.00	17.100	17.300	0.200	10.00	Construction of road work in Raipururiya town was completed within available ROW converging complete habitation. It is recommended to considered difference of provision of schedule-B and actual work done positive change of Scope	Committee agreed to consid Positive change of scope recommended by IE.
					17.300	18.400	1.100	15.00		
			2.617				2.140	0.477		

Indlekh P.M.D&L

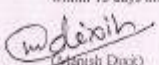
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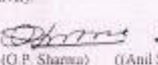
Change of Scope for Road Works in Soyat - Pidawa Road Project

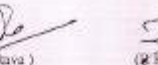
Place/Location	As per Schedule-B				As Constructed by Concessionaire on Site				Reasons & Recommendations tendered by Independent Engineer	Decision of Committee
	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)	From (Km)	To (Km)	Length (Km)	Existing width to be paved including drains (in Mtr.)		
Soyat	0.000	1.000	1.000	20.00	0	1.5	1.500	14.00	Construction of road work in Soyat town was completed within available ROW converging complete habitation. Due to which length has been increased and work could not be completed in width specified in Schedule-B. It is recommended to considered difference of provision of schedule-B and actual work done as positive change of Scope	Committee agreed to consider a Positive change of scope as recommended by IE.


Structures		Nos of Structure	Nos of Structure	As per note given in Schedule-B which states The Proposed span arrangement shown above are tentative, concessionaire should conduct survey and investigation to assess the accurate hydrology of proposed site of structure and design the span arrangement of Bridge/Culverts suiting to the site in consultation with IE. Any change in span arrangement shall not be treated as change of scope of work. Similarly as per clause 3.0 of Schedule-B which state Any additional structures requiring reconstruction and new construction, strengthening or widening during entire concession period will be the responsibility of the concessionaire for which no compensation will be paid. It clearly reveals that concessionaire has completed more nos of structures as specified in schedule-B. No change of scope shall be considered as per above provision in schedule-B for structures. Hence no change of scope is required	Committee agreed with the recommendation of IE. Hence a change of scope.
Widening + Repair & Strengthening					
a. Pipe Culvert		5	8		
b. Slab / Arch Culvert		13	9		
c. Minor Bridge		3	3		
d. Minor Bridge		0	0		
Reconstruction					
a. Pipe Culvert		47	58		
b. Slab / Arch Culvert		29	25		
c. Minor Bridge		7	6		
d. Minor Bridge		0	0		
New Construction					
a. Pipe Culvert		9	15		
b. Slab / Arch Culvert		0	0		
c. Minor Bridge		0	0		
d. Minor Bridge		0	0		

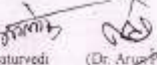
In-principle approval under change of scope is recommended for above works as per remarks of last column. Further it has been instructed to Independent Engineer and concessionaire to prepare drawings, financial implication and submit within 15 days time positively.



 (Anil Shrivastava)
 AGM (MDR)
 MPRDC


 (O.P. Sharma)
 Team Leader
 Independent Engineer


 (Rajendra Kumar)
 GM (Finance)
 MPRDC


 (Alok Chaturvedi)
 GM (MDR)
 MPRDC


 (Dr. Arun Palival)
 GM (Finance)
 MPRDC


 (A.S. Chendke)
 Technical Advisor
 MPRDC

Annexure 10: Project Photos

Jaora-Piplodha-Jalandharkheda & Piploda-Sailana



Project: Development of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad-Khoh (iv) Soyat-Pidawa. BOT (Annuity) basis.



Neemuch-Jawad-Khoh-Nayagaon



Project: Development of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad-Khoh (iv) Soyat-Pidawa. BOT (Annuity) basis.



Bamniya – Petlabad - Raipururiya



Project: Development of (i) Jaora-Piplodha-Jalandharkheda & Piploda-Sailana (ii) Raipururiya-Petlabad-Bamniya (iii) Jawad-Khoh (iv) Soyat-Pidawa. BOT (Annuity) basis.





Soyat – Pidawa

