



## SCHEDULES

For

“Four laning of Silchar-Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.”

November, 2022 |

**National Highways & Infrastructure Development Corporation Ltd**  
3rd floor, PTI Building, 4-Parliament Street,

New Delhi – 110001

# ***Schedule-A***



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule- A

(See Clauses 2.1 and 8.1)

### Site of the Project

#### 1. The Site

- (i) Site of the Two-Lane (proposed 4-lane divided carriageway) Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this **Schedule-A**
- (ii) The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.
- (iii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2.1 of this Agreement.
- (iv) The alignment plans of the Project Highway are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Highways shall be followed by the contractor with minimum FRL as indicated in the alignment plan. The Contractor, however, improve/upgrade the Road Profile as indicated in Annex-III based on site/design requirement.
- (v) The status of the environment clearances obtained or awaited is given in Annex IV.

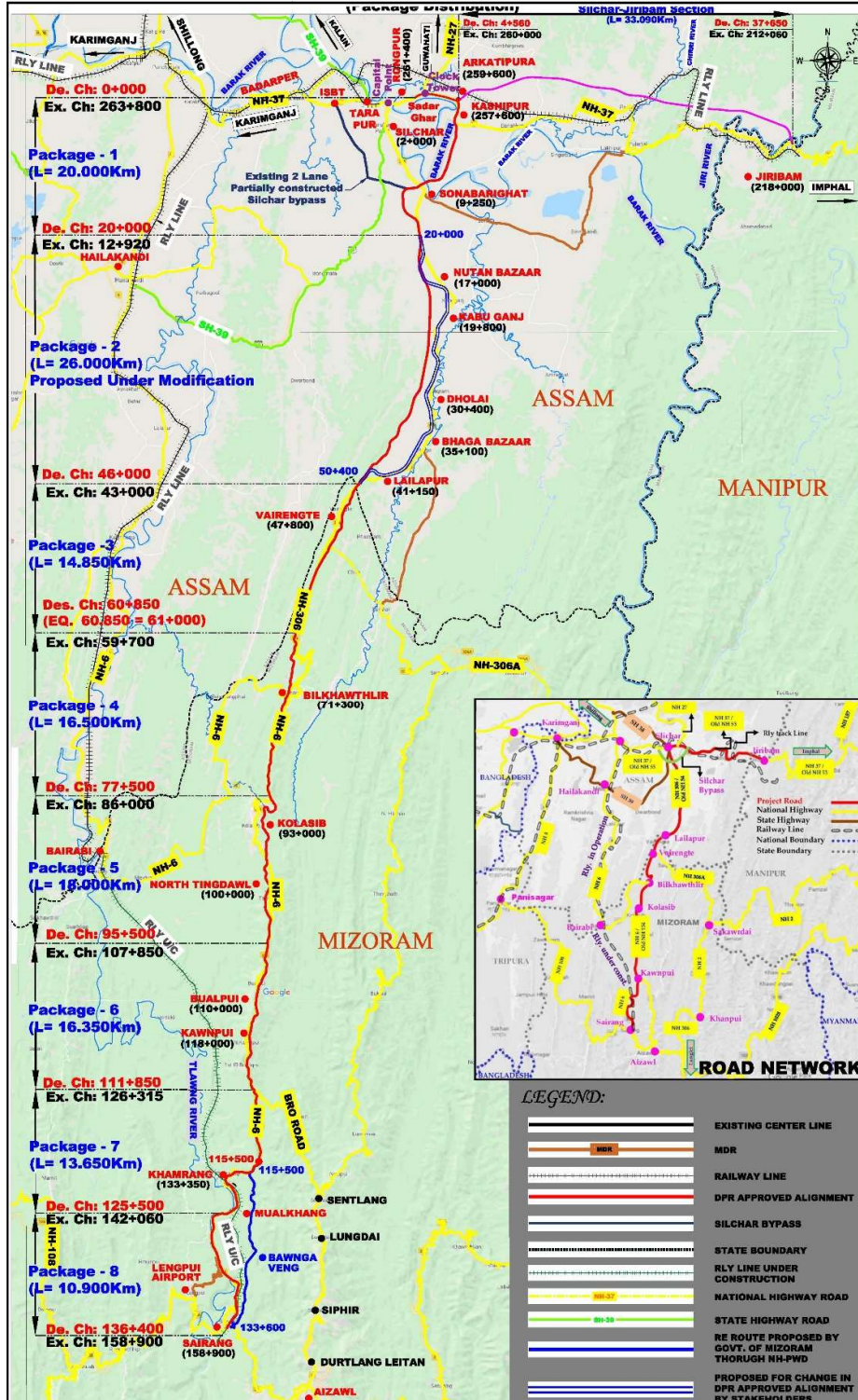


Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

**KEY PLAN**





Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Annex-I (Schedule-A)

### Site

#### 1. Site

The Site of the two-lane (proposed 4-lane divided carriageway)Project Highway starts from Silchar(Rongpur) and ends at Dhanehari(Package-1) from Existing Chainage km263+800of NH-37 to km12+920 of NH 306 (Design Chainage km0+000 to km20+000) on Silchar - Vairengte -Sairang road in the state of Assam & Mizoram.The land, carriageway and structures comprising the Site are described below.

#### 2. Land

The Site of the Project Highway comprises the land described below:

SL No.	Existing Chainage (km)		Length (m)	Right of Way (m)	Remarks
	From	To			
1	263+800	262+190	1610	30	Rongpur Village
2	262+190	260+020	2170	22	Rongpur Village
3	260+020	259+950	70	30	Rongpur Village
4	259+950	257+450	2500	22	Kashipur Village
5	20+000	12+500	7500	50	Silchar Bypass
6	7+950	12+500	4550	NA	Sonabarighat Bypass
7	12+500	12+920	420	20	Dhanehari Village/Kajidhar Pt III

#### 3. Carriageway

The present carriageway of the Project Highway is 7.0m wide. The type of the existing pavement is flexible. The detail is given below.

SL No.	Existing Chainage (km)		Length (m)	Carriageway Width (m)	Remarks
	From	To			
1	263+800	263+000	800	14.00	Rongpur-Kashipur (NH 37)
2	263+000	257+450	5550	10.00	Rongpur-Kashipur (NH 37)
3	20+000	12+500	7500	-	Kashipur-Sonabarighat (Silchar Bypass)
4	7+950	12+100	4150	NA	Uttar Krishnapur-Saidpur, Sonabarighat Bypass (NH306)
5	12+100	12+500	400	10.00	Saidpur-Sildubi Point, Sonabarighat-ISBT (Silchar Bypass)
6	12+500	12+920	420	7.00	Saidpur-Sildubi Point



Four laning of Silchar - Dhaneharisecton (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

SL No.	Existing Chainage (km)		Length (m)	Carriageway Width (m)	Remarks
	From	To			
					(NH306)

#### 4. Major Bridges

The Site includes the following Major Bridges:

S. No.	Chainage (km)	Type of super structures			No. of Spans with span length (m)	Width (m)
		Foundation	Sub- structure	Superstructure		
1	13+000 (Silchar Bypass)	Partially Constructed till A1, P1 & P2 and it is Abandoned				

#### 5. Road over-bridges (ROB)/ Road under-bridges (RUB)

The Site includes the following ROB (road over railway line)/RUB (road under railway line):

S. No.	Chainage (km)	Type of Structure		No. of Spans with span length (m)	Width (m)	ROB/RUB
		Foundation	Superstructure			
NIL						

#### 6. Grade separators

The Site includes the following grade separators:

S.No.	Chainage (km)	Type of Structure		No. of Spans with span length (m)	Width (m)
		Foundation	Superstructure		
1	12+500 (Silchar Bypass)	Constructed till cap level of A1 and its Abandoned			

#### 7. Minor bridges

The Site includes the following minor bridges:

S. No.	Chainage (km)	Type of super structures			No. of Spans with span length (m)	Width (m)
		Foundation	Sub- structure	Superstructure		
1	12+270 (Multi Cell box Culvert)				3 x 10.5	42
2	10+250				1 x 26.50	8.5
3	11+350				1 x 35.00	10.0
4	12+350				1 x 26.30	9.0

#### 8. Railway level crossings

The Site includes the following railway level crossings:



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. No.	Location (km)	Remarks
NIL		

**9. Underpasses (vehicular, non-vehicular)**

The Site includes the following underpasses:

S.No.	Chainage (km)	Type of Structure	No. of Spans with span length (m)	Width (m)
NIL				

**10. Culverts**

The Site has the following culverts:

S. No.	Chainage (km)	Type of Culvert	Span / Opening with span length (m)	Remarks
1	263+550	Box	1 x 2	NH-37
2	262+750	Box	1 x 2	
3	262+410	Box	1 x 2	
4	261+350	Box	1 x 2	
5	260+770	Box	1 x 2	
6	259+200	Box	1 x 2	
7	258+690	Box	1 x 2	
8	258+340	Box	1 x 2	
9	257+755	Box	1 x 2	
10	257+580	Box	1 x 2	
11	19+380	Pipe	3 x 1.2	
12	18+685	Pipe	2 x 0.9	
13	17+765	Pipe	2 x 0.9	
14	17+531	Pipe	2 x 1.2	
15	17+200	Under Construction		
16	16+715	Pipe	1 x 1.2	
17	16+198	Pipe	2 x 1.0	
18	15+910	Pipe	2 x 1.0	
19	15+440	Pipe	2 x 1.2	
20	15+135	Pipe	2 x 1.2	
21	14+871	Pipe	2 x 1.2	
22	14+513	Pipe	2 x 1.2	
23	13+988	Pipe	1 x 1.2	
24	12+230	Pipe	1 x 1.2	
25	12+119	Pipe	1 x 0.9	
26	9+450	Slab	1x2	NH-306
27	12+400	Pipe	2x0.9	

**11. Bus bays**



Four laning of Silchar - Dhaneharisecton (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

The details of bus bays on the Site are as follows:

Sl. No.	Chainage (km)	Length (m)	Left Hand Side	Right Hand side
NIL				

#### 12. Truck Lay byes

The details of truck lay byes are as follows:

Sl. No.	Chainage (km)	Length (m)	Left Hand Side	Right Hand side
NIL				

#### 13. Roadside drains

The details of the roadside drains are as follows:

S. No.	Location		Type	
	From km	to km	Masonry/cc (Pucca)	Earthen (Kutchra)
NIL				

#### 14. Major Junctions

The details of major junctions are as follow.

S. No.	Location		At grade	Separated	Category of Cross Road			
	From km	To km			NH	SH	MDR	Others
1	262+950 (NH-37)	-	T		NH-27			
2	257+450 (NH-37)	-	T					Kashipur Village
3	9+300 (NH-306)	-	Y					Village Road

(NH: National Highway, SH: State Highway, MDR: Major District Road)

#### 15. Minor Junctions

The details of the minor junctions are as follows:

Sl. No.	Existing Chainage	Design Chainage	Type of Road (BT, CC, Gr.)	Type of Junctions (T,Y,+)	Side	Type of Road (SH/ MDR/ PMGSY/ VR)
1	259+510 (NH-37)	-	ER	Y	LHS	Kashipur
2	259+010 (NH-37)	-	BT	Y	LHS	Kashipur
3	257+625 (NH-37)	-	BT	Y	RHS	Kashipur



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Existing Chainage	Design Chainage	Type of Road (BT, CC, Gr.)	Type of Junctions (T,Y,+)	Side	Type of Road (SH/ MDR/ PMGSY/ VR)
4	14+180	-	BT	Y	BHS	Silchar Bypass
5	9+285 (NH-306)	-	BT	Y	LHS	Village Road
6	9+571 (NH-306)	-	BT	Y	LHS	MBS Road
7	9+932 (NH-306)	-	BT	Y	LHS	Village Road
8	10+200 (NH-306)	-	BT	T	RHS	Village Road
9	10+531(NH-306)	-	BT	Y	RHS	Village Road
10	10+667 (NH-306)	-	BT	T	RHS	Village Road
11	11+016 (NH-306)	-	BT	Y	RHS	Village Road
12	11+500 (NH-306)	-	BT	Y	RHS	Village Road
13	11+610 (NH-306)	-	BT	T	RHS	Saidpur PTV
14	11+898 (NH-306)	-	BT	Y	LHS	Dhanehari
15	11+980 (NH-306)	-	BT	T	RHS	Village Road
16	12+054 (NH-306)	-	BT	T	LHS	Village Road
17	12+622 (NH-306)	-	BT	Y	RHS	Village Road
18	12+886 (NH-306)	-	BT	T	RHS	Village Road
19	12+904 (NH-306)	-	BT	T	LHS	Village Road

**16. Bypasses**

The details of the bypasses are as follows:

S.No.	Name of bypass (town)	Chainage (km) From km to km	Length
NIL			

**17. Details of Existing Utilities Schedule**

The existing utilities schedules as below,

**17.1 Electrical Utilities**

The Site includes the following Electrical Utilities: -

**(a) Extra High-Tension Lines (EHT Lines)**

S. No	Chainage	Length of line(km)	Nos. of Crossings	Remarks
		Maintained by PGCIL Department	Maintained by PGCIL Department	



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

	From	To	400KV	132KV	400KV	132KV
1	0+000	5+000				
2	5+000	10+000				
3	10+000	15+000				
4	15+000	16+500				
5	16+500	17+100		0.080 (1) & 0.100		2
6	17+100	17+500		0.110		1
7	17+500	19+000		0.150(1)		1

**(b) High Tension/Low Tension Lines (HT/LT Lines)**

S. No	Chainage		Length of Line				Nos. of Crossings				Transformer	
	From	To	HT 33KV	LT 11KV	LT 230V	LT 440V	HT 33KV	LT 11KV	LT 230V	LT 440V	No	Capacity
1		0+500		0.700 (15)		0.600(18)					2	25 KVA & 63KVA
2	0+500	1+000	0.150(3)	0.650(14)		0.350(9)		0.050(1)		0.070(3)	2	100KVA & 25KVA
3	1+000	1+500	0.500(9)	0.300(3)		0.700(31)				0.045(2)	1	63KVA
4	1+500	2+000	0.500(8)	0.200(5)		0.280(12)		0.050(2)		0.090(4)		
5	2+000	2+500	0.500(9)	0.500(12)		0.500(21)		0.030(1)		0.030(3)	1	100KVA
6	2+500	3+000	0.500(9)	0.550(9)		.500(9) & .500(14)		0.070(2)		0.035(1)	1	63KVA
7	3+000	3+500	0.500(9)	0.500(11)		0.600(18)		0.030(1)		0.050(3)	1	25KVA
8	3+500	4+000	0.450(8)	0.520(13)		0.400(14)		0.040(2)		0.060(6)	2	25KVA & 250KVA
9	4+000	4+300		1.100(7)				0.300(1) & 0.050(2)				
10	4+300	5+200	0.800(15)	0.420(10)		1.000(26)				0.150(6)	1	100KVA
11	5+200	6+200	0.900(16)	0.500(14)		0.850(34)		.050(2)		0.030(13)	2	25KVA & 100KV A
12	6+200	6+300	0.150(3)	0.150(5)		0.100(3)	0.150(1)	0.150(1)		0.100(1)		
13	6+300	7+200		(0.200)4	(0.800)16							
14	7+200	8+200	0.080(1)	(0.500)7			0.080(1)	0.050(1)			1	63KVA
15	8+200	9+200										
16	9+200	10+200										
17	10+200	11+200			(0.060)1					(0.060)1		
18	11+200	12+200		(0.790)18	0.250(7)	0.050		0.085(2)	0.015(1)		2	100KVA
19	12+200	13+200		0.300(5)	0.180	0.350(7)			0.180(3)			
20	13+200	13+700		0.250(7)				0.090(1)			1	25KVA
21	13+700	14+200	0.660(15)	0.300(5)			0.080(1)	0.080(1)			1	25KVA
22	14+200	14+700	0.590(14)	0.050(2)		0.400(11)		0.080(1)				
23	14+700	15+200	0.200(8)									
23	15+200	16+200		0.100(4)		0.070(3)		0.100(1)		0.070(1)		
24	16+200	17+200		0.060(1)				0.060(1)				
25	17+200	18+200				0.080(1)				0.080(1)		



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

										1)		
26	18+200	18+700	(0.300)10	(0.080)4			(0.210)11	0.200 80.08 0(1)	0.080(1)		0.210(1)	
27	18+700	19+200	0.500(13)	0.030(2)			1.000(27)		0.030(1)			1 25KVA
28	19+200	19+700	(0.500)13	0.030(2)			0.900(22)		0.030(1)		0.030(1)	1 25KVA
29	19+700	20+000	0.300(11)	0.030(2)			0.300(12)		0.030(1)		0.080(1)	2 25KVA

19 nos. of Distribution Transformer

**17.2 Public Health Utilities (Water/Sewage Pipelines)**

**(a) The Site includes the following Public Health Utilities: -**

S. No	Chainage		Length (in km)				Crossings				Remarks	
	From	To	Water Supply Line		Sewage Line		Water Supply Line		Sewage Line			
			With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow		
1	0+000	1+500	250m 850m 950m					160m				
2	1+500	2+500	3223m									
3	2+500	4+000	4480m					100m				
4	4+000	4+600	200m									
5	4+600	5+600	300m									
6	5+600	6+000	800m									
7	6+000	7+000	550m 1790m									
8	7+000	12+000										NIL
9	12+000	13+600	1100m									
10	13+600	13+650	200m					200m				
11	18+800	20+000	1800m									

**(b) Bore well/Hand Pump within RoW**

Sl. No.	Bore Well**		Hand Pump	
	Chainage	Nos	Chainage	Nos
NIL				

**(c) Water Tank within RoW**

Sl. No.	Water Tank
NIL	



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

	<b>Chainage</b>	<b>Nos</b>	<b>Capacity</b>
	NIL		

**17.3 Any Other Lines:**

**18. Other Structures:**

**Madhurgram Water supply PHE Pump Station at Design 0.330 Km** (The Pump Station will be shifted by Authority)



Four laning of Silchar - Dhaneharisecton (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

**Annex-II**  
(As per Clause 8.3 (i))

**(Schedule-A)**

**Dates for providing Right of Way of Construction Zone**

The dates on which the Authority shall provide Right of Way of Construction Zone to the Contractor on different stretches of the Site are stated below:

**(i) Full Right of Way (full width)**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
	From	To			
(i) Full Right of Way (full width)	3+820	4+540	720	50	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	6+110	6+280	170	65	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	14+940	15+050	110	75	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	15+050	15+300	250	65	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	15+300	15+700	400	60	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	15+700	16+180	480	70	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	16+180	16+550	370	50	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	16+550	17+350	800	50	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	17+350	18+000	650	45	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	18+000	18+580	580	60	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	19+470 @ Minor Junction Area in Sqm			778.4329 sqm	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	8+060 @ Rest area Area in Sqm			17220.9284 sqm	Within 30 Days of Appointed Date
(i) Full Right of Way (full width)	16+360 Toll Plaza Area in Sqm			36993.238 sqm	Within 30 Days of Appointed Date



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**(ii) Part Right of Way (part width)**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
	From	To			
Part Right of Way (part width)	0+000	0+150	150	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+150	0+200	50	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+200	0+500	300	25	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+500	0+900	400	30	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+900	0+990	90	50	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+990	1+050	60	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+050	1+100	50	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+100	1+150	50	35	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+150	1+400	250	30	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+400	1+550	150	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+550	1+570	20	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+570	1+590	20	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+590	2+700	1110	10	Within 30 Days of Appointed Date
Part Right of Way (part width)	2+700	3+210	510	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	3+210	3+820	610	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	4+540	4+790	250	35	Within 30 Days of Appointed Date
Part Right of Way (part width)	4+790	4+960	170	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	4+960	5+370	410	35	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+370	5+400	30	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+400	5+700	300	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+700	5+900	200	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+900	5+980	80	35	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+980	6+110	130	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+280	6+310	30	55	Within 30 Days of Appointed Date



Four laning of Silchar - Dhaneharisecton (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
	Start	End			
Part Right of Way (part width)	6+310	6+400	90	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+400	6+510	110	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+510	6+730	220	16	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+730	6+870	140	10	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+870	6+960	90	0	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+960	7+170	210	4	Within 30 Days of Appointed Date
Part Right of Way (part width)	7+170	7+520	350	4	Within 30 Days of Appointed Date
Part Right of Way (part width)	7+520	7+650	130	0	Within 30 Days of Appointed Date
Part Right of Way (part width)	7+650	7+960	310	8	Within 30 Days of Appointed Date
Part Right of Way (part width)	7+960	8+610	650	5	Within 30 Days of Appointed Date
Part Right of Way (part width)	8+610	10+450	1840	5	Within 30 Days of Appointed Date
Part Right of Way (part width)	10+450	11+170	720	0	Within 30 Days of Appointed Date
Part Right of Way (part width)	11+170	11+450	280	0	Within 30 Days of Appointed Date
Part Right of Way (part width)	11+450	11+650	200	10	Within 30 Days of Appointed Date
Part Right of Way (part width)	11+650	11+900	250	19	Within 30 Days of Appointed Date
Part Right of Way (part width)	11+900	12+000	100	24	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+000	12+050	50	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+050	12+180	130	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+180	12+400	220	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+400	12+620	220	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+620	12+850	230	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+850	13+120	270	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	13+120	13+180	60	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	13+180	13+330	150	0	Within 30 Days of Appointed Date
Part Right of Way (part width)	13+330	13+650	320	10	Within 30 Days of Appointed Date
Part Right of Way (part width)	13+650	14+100	450	20	Within 30 Days of Appointed Date
Part Right of Way (part width)	14+100	14+670	570	10	Within 30 Days of Appointed Date



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
	From	To			
Part Right of Way (part width)	14+670	14+900	230	15	Within 30 Days of Appointed Date
Part Right of Way (part width)	14+900	14+940	40	25	Within 30 Days of Appointed Date
Part Right of Way (part width)	18+580	18+750	170	50	Within 30 Days of Appointed Date
Part Right of Way (part width)	18+750	19+270	520	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+270	19+320	50	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+320	19+450	130	50	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+450	19+550	100	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+550	19+600	50	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+600	19+710	110	45	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+710	19+770	60	40	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+770	20+000	230	35	Within 30 Days of Appointed Date
Part Right of Way (part width)	0+818 @ Major Junction Area in Sqm			3193.7538 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	6+302 @ Major Junction Area in Sqm			4168.375 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	12+120 @ Major Junction Area in Sqm			176.9049 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	13+665 @ Major Junction Area in Sqm			3702.307 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	14+992 @ Major Junction Area in Sqm			458.8891 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	18+662 @ Major Junction Area in Sqm			1734.705 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	1+535 @ Minor Junction Area in Sqm			4087.089 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	2+805 @ Minor Junction Area in Sqm			430.879 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	3+750 @ Minor Junction Area in Sqm			478.7935 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	4+835 @ Minor Junction Area in Sqm			669.5099 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	5+840 @ Minor Junction Area in Sqm			448.4113 sqm	Within 30 Days of Appointed Date
Part Right of Way (part width)	19+530 @ Minor Junction Area in Sqm			541.2575 sqm	Within 30 Days of Appointed Date

**(iii) Balance Right of Way (available width)**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
	From	To			



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
Part Right of Way (part width)	0+000	0+150	150	30	On appointed date
Part Right of Way (part width)	0+150	0+200	50	30	On appointed date
Part Right of Way (part width)	0+200	0+500	300	30	On appointed date
Part Right of Way (part width)	0+500	0+900	400	25	On appointed date
Part Right of Way (part width)	0+900	0+990	90	25	On appointed date
Part Right of Way (part width)	0+990	1+050	60	30	On appointed date
Part Right of Way (part width)	1+050	1+100	50	30	On appointed date
Part Right of Way (part width)	1+100	1+150	50	30	On appointed date
Part Right of Way (part width)	1+150	1+400	250	30	On appointed date
Part Right of Way (part width)	1+400	1+550	150	25	On appointed date
Part Right of Way (part width)	1+550	1+570	20	25	On appointed date
Part Right of Way (part width)	1+570	1+590	20	30	On appointed date
Part Right of Way (part width)	1+590	2+700	1110	30	On appointed date
Part Right of Way (part width)	2+700	3+210	510	20	On appointed date
Part Right of Way (part width)	3+210	3+820	610	20	On appointed date
Part Right of Way (part width)	4+540	4+790	250	20	On appointed date
Part Right of Way (part width)	4+790	4+960	170	20	On appointed date
Part Right of Way (part width)	4+960	5+370	410	20	On appointed date
Part Right of Way (part width)	5+370	5+400	30	15	On appointed date
Part Right of Way (part width)	5+400	5+700	300	15	On appointed date
Part Right of Way (part width)	5+700	5+900	200	15	On appointed date
Part Right of Way (part width)	5+900	5+980	80	20	On appointed date
Part Right of Way (part width)	5+980	6+110	130	20	On appointed date
Part Right of Way (part width)	6+280	6+310	30	20	On appointed date
Part Right of Way (part width)	6+310	6+400	90	50	On appointed date
Part Right of Way (part width)	6+400	6+510	110	50	On appointed date
Part Right of Way (part width)	6+510	6+730	220	44	On appointed date
Part Right of Way (part width)	6+730	6+870	140	50	On appointed date
Part Right of Way (part width)	6+870	6+960	90	40	On appointed date
Part Right of Way (part width)	6+960	7+170	210	46	On appointed date
Part Right of Way (part width)	7+170	7+520	350	46	On appointed date
Part Right of Way (part width)	7+520	7+650	130	50	On appointed date
Part Right of Way (part width)	7+650	7+960	310	47	On appointed date
Part Right of Way (part width)	7+960	8+610	650	50	On appointed date
Part Right of Way (part width)	8+610	10+450	1840	50	On appointed date
Part Right of Way (part width)	10+450	11+170	720	50	On appointed date
Part Right of Way (part width)	11+170	11+450	280	50	On appointed date
Part Right of Way (part width)	11+450	11+650	200	50	On appointed date
Part Right of Way (part width)	11+650	11+900	250	41	On appointed date



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Description	Design Chainage (km)		Length (m)	Width (m)	Date of Providing ROW
Part Right of Way (part width)	11+900	12+000	100	41	On appointed date
Part Right of Way (part width)	12+000	12+050	50	50	On appointed date
Part Right of Way (part width)	12+050	12+180	130	50	On appointed date
Part Right of Way (part width)	12+180	12+400	220	50	On appointed date
Part Right of Way (part width)	12+400	12+620	220	50	On appointed date
Part Right of Way (part width)	12+620	12+850	230	20	On appointed date
Part Right of Way (part width)	12+850	13+120	270	20	On appointed date
Part Right of Way (part width)	13+120	13+180	60	20	On appointed date
Part Right of Way (part width)	13+180	13+330	150	35	On appointed date
Part Right of Way (part width)	13+330	13+650	320	50	On appointed date
Part Right of Way (part width)	13+650	14+100	450	50	On appointed date
Part Right of Way (part width)	14+100	14+670	570	50	On appointed date
Part Right of Way (part width)	14+670	14+900	230	50	On appointed date
Part Right of Way (part width)	14+900	14+940	40	50	On appointed date
Part Right of Way (part width)	18+580	18+750	170	20	On appointed date
Part Right of Way (part width)	18+750	19+270	520	20	On appointed date
Part Right of Way (part width)	19+270	19+320	50	20	On appointed date
Part Right of Way (part width)	19+320	19+450	130	20	On appointed date
Part Right of Way (part width)	19+450	19+550	100	20	On appointed date
Part Right of Way (part width)	19+550	19+600	50	20	On appointed date
Part Right of Way (part width)	19+600	19+710	110	20	On appointed date
Part Right of Way (part width)	19+710	19+770	60	20	On appointed date
Part Right of Way (part width)	19+770	20+000	230	20	On appointed date
Part Right of Way (part width)	0+818 @ Major Junction Area in Sqm			1209.1067 sqm	On appointed date
Part Right of Way (part width)	6+302 @ Major Junction Area in Sqm			620.5572 sqm	On appointed date
Part Right of Way (part width)	12+120 @ Major Junction Area in Sqm			274.0255 sqm	On appointed date
Part Right of Way (part width)	13+665 @ Major Junction Area in Sqm			1552.0421 sqm	On appointed date
Part Right of Way (part width)	14+992 @ Major Junction Area in Sqm			5391.3725 sqm	On appointed date
Part Right of Way (part width)	18+662 @ Major Junction Area in Sqm			3915.1992 sqm	On appointed date
Part Right of Way (part width)	1+535 @ Minor Junction Area in Sqm			161.9956 sqm	On appointed date
Part Right of Way (part width)	2+805 @ Minor Junction Area in Sqm			122.1883 sqm	On appointed date
Part Right of Way (part width)	3+750 @ Minor Junction Area in Sqm			253.1999 sqm	On appointed date



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Description	Design Chainage (km)	Length (m)	Width (m)	Date of Providing ROW
Part Right of Way (part width)	4+835 @ Minor Junction Area in Sqm		127.0907 sqm	On appointed date
Part Right of Way (part width)	5+840 @ Minor Junction Area in Sqm		145.3752 sqm	On appointed date
Part Right of Way (part width)	19+530 @ Minor Junction Area in Sqm		329.3272 sqm	On appointed date



Four laning of Silchar - Dhaneharisession (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

### Annex - III

*(Schedule-A)*

### **Alignment Plans**

The alignment plan of the Project Highway is available on E - Tendering portal of NHIDCL

The existing alignment of the Project Highway shall be modified in the following sections as per the alignment plan indicated below:

- i. The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.
- ii. Traffic Signages of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per the relevant specifications/IRC Codes/Manual.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Annex - IV

*(Schedule-A)*

**Environment Clearances**

As per MOEF notification F. No. 21-270/2008-1A.III (dated 22 August 2013), Environmental Clearance is not required for Assam state.

## Annexure -V

### (Schedule -A)

#### Centre Line Coordinates of the Project Road

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
0	482439.9	2746854	51	20	52.8
10	482447.7	2746860	51	20	52.8
20	482455.5	2746866	51	20	52.8
30	482463.4	2746872	51	20	52.8
30.886	482464	2746873	51	20	52.8
40	482471.2	2746879	51	23	31.5
50	482479	2746885	51	32	30.6
60	482486.8	2746891	51	47	51.7
70	482494.7	2746897	52	9	34.8
80	482502.6	2746903	52	37	39.8
90	482510.6	2746909	53	12	6.8
90.886	482511.3	2746910	53	15	28.3
100	482518.6	2746915	53	50	17.1
110	482526.8	2746921	54	28	29
120	482534.9	2746927	55	6	40.8
130	482543.2	2746933	55	44	52.6
140	482551.5	2746938	56	23	4.5
150	482559.8	2746944	57	1	16.3
160	482568.2	2746949	57	39	28.1
170	482576.7	2746954	58	17	40
180	482585.2	2746960	58	55	51.8
190	482593.8	2746965	59	34	3.6
200	482602.5	2746970	60	12	15.4
210	482611.2	2746975	60	50	27.3
220	482620	2746979	61	28	39.1
230	482628.8	2746984	62	6	50.9
240	482637.6	2746989	62	45	2.8
250	482646.6	2746993	63	23	14.6
260	482655.5	2746998	64	1	26.4
270	482664.5	2747002	64	39	38.3
280	482673.6	2747006	65	17	50.1
290	482682.7	2747010	65	56	1.9
300	482691.9	2747014	66	34	13.8
310	482701.1	2747018	67	12	25.6
320	482710.3	2747022	67	50	37.4
330	482719.6	2747026	68	28	49.3
340	482728.9	2747030	69	7	1.1
350	482738.3	2747033	69	45	12.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
360	482747.7	2747036	70	23	24.7
370	482757.1	2747040	71	1	36.6
380	482766.6	2747043	71	39	48.4
390	482776.1	2747046	72	18	0.2
391.564	482777.6	2747047	72	23	58.6
400	482785.6	2747049	72	53	56.1
410	482795.2	2747052	73	23	34.8
420	482804.8	2747055	73	46	51.4
430	482814.4	2747058	74	3	46
440	482824	2747060	74	14	18.7
450	482833.6	2747063	74	18	29.5
451.564	482835.2	2747063	74	18	34.1
460	482843.3	2747066	74	18	34.1
470	482852.9	2747068	74	18	34.1
480	482862.5	2747071	74	18	34.1
490	482872.2	2747074	74	18	34.1
500	482881.8	2747077	74	18	34.1
510	482891.4	2747079	74	18	34.1
520	482901	2747082	74	18	34.1
530	482910.7	2747085	74	18	34.1
540	482920.3	2747087	74	18	34.1
550	482929.9	2747090	74	18	34.1
560	482939.5	2747093	74	18	34.1
570	482949.2	2747095	74	18	34.1
580	482958.8	2747098	74	18	34.1
590	482968.4	2747101	74	18	34.1
600	482978.1	2747104	74	18	34.1
610	482987.7	2747106	74	18	34.1
620	482997.3	2747109	74	18	34.1
630	483006.9	2747112	74	18	34.1
640	483016.6	2747114	74	18	34.1
650	483026.2	2747117	74	18	34.1
660	483035.8	2747120	74	18	34.1
670	483045.4	2747123	74	18	34.1
680	483055.1	2747125	74	18	34.1
690	483064.7	2747128	74	18	34.1
700	483074.3	2747131	74	18	34.1
710	483084	2747133	74	18	34.1
720	483093.6	2747136	74	18	34.1
730	483103.2	2747139	74	18	34.1
740	483112.8	2747141	74	18	34.1
750	483122.5	2747144	74	18	34.1
760	483132.1	2747147	74	18	34.1
770	483141.7	2747150	74	18	34.1

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
780	483151.3	2747152	74	18	34.1
790	483161	2747155	74	18	34.1
800	483170.6	2747158	74	18	34.1
810	483180.2	2747160	74	18	34.1
820	483189.9	2747163	74	18	34.1
830	483199.5	2747166	74	18	34.1
840	483209.1	2747168	74	18	34.1
850	483218.7	2747171	74	18	34.1
860	483228.4	2747174	74	18	34.1
870	483238	2747177	74	18	34.1
880	483247.6	2747179	74	18	34.1
890	483257.2	2747182	74	18	34.1
900	483266.9	2747185	74	18	34.1
910	483276.5	2747187	74	18	34.1
920	483286.1	2747190	74	18	34.1
930	483295.8	2747193	74	18	34.1
940	483305.4	2747196	74	18	34.1
950	483315	2747198	74	18	34.1
960	483324.6	2747201	74	18	34.1
970	483334.3	2747204	74	18	34.1
980	483343.9	2747206	74	18	34.1
989.496	483353	2747209	74	18	34.1
990	483353.5	2747209	74	18	35.2
1000	483363.2	2747212	74	26	28.2
1010	483372.8	2747214	74	48	40.7
1020	483382.5	2747217	75	25	12.5
1030	483392.2	2747219	76	16	3.9
1040	483401.9	2747222	77	21	14.6
1050	483411.7	2747224	78	40	44.8
1060	483421.5	2747226	80	14	34.4
1069.496	483430.9	2747227	81	56	56.1
1070	483431.4	2747227	82	2	42.4
1080	483441.3	2747228	83	57	17.9
1090	483451.3	2747229	85	51	53.4
1100	483461.2	2747230	87	46	28.9
1110	483471.2	2747230	89	41	4.4
1120	483481.2	2747230	91	35	39.9
1130	483491.2	2747229	93	30	15.4
1140	483501.2	2747229	95	24	50.8
1150	483511.1	2747228	97	19	26.3
1160	483521	2747226	99	14	1.8
1170	483530.9	2747224	101	8	37.3
1176.779	483537.5	2747223	102	26	18.1
1180	483540.7	2747222	103	2	28.2

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
1190	483550.4	2747220	104	45	17.2
1200	483560	2747217	106	13	46.7
1210	483569.6	2747214	107	27	56.7
1220	483579.1	2747211	108	27	47.3
1230	483588.5	2747208	109	13	18.5
1240	483598	2747205	109	44	30.3
1250	483607.4	2747201	110	1	22.6
1256.779	483613.7	2747199	110	4	40.1
1260	483616.8	2747198	110	4	40.1
1270	483626.2	2747194	110	4	40.1
1280	483635.5	2747191	110	4	40.1
1290	483644.9	2747188	110	4	40.1
1300	483654.3	2747184	110	4	40.1
1310	483663.7	2747181	110	4	40.1
1320	483673.1	2747177	110	4	40.1
1330	483682.5	2747174	110	4	40.1
1340	483691.9	2747170	110	4	40.1
1350	483701.3	2747167	110	4	40.1
1360	483710.7	2747163	110	4	40.1
1370	483720.1	2747160	110	4	40.1
1380	483729.5	2747157	110	4	40.1
1390	483738.9	2747153	110	4	40.1
1400	483748.3	2747150	110	4	40.1
1410	483757.6	2747146	110	4	40.1
1420	483767	2747143	110	4	40.1
1430	483776.4	2747139	110	4	40.1
1430.496	483776.9	2747139	110	4	40.1
1430.496	483776.9	2747139	110	4	40.1
1440	483785.8	2747136	109	49	49
1450	483795.2	2747133	109	34	11.5
1460	483804.7	2747129	109	18	33.9
1470	483814.1	2747126	109	2	56.3
1480	483823.6	2747123	108	47	18.8
1490	483833.1	2747120	108	31	41.2
1500	483842.5	2747116	108	16	3.6
1510	483852	2747113	108	0	26
1520	483861.6	2747110	107	44	48.5
1530	483871.1	2747107	107	29	10.9
1540	483880.6	2747104	107	13	33.3
1550	483890.2	2747101	106	57	55.8
1560	483899.8	2747098	106	42	18.2
1570	483909.4	2747096	106	26	40.6
1580	483919	2747093	106	11	3.1
1590	483928.6	2747090	105	55	25.5

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
1600	483938.2	2747087	105	39	47.9
1610	483947.8	2747085	105	24	10.4
1620	483957.5	2747082	105	8	32.8
1630	483967.1	2747079	104	52	55.2
1640	483976.8	2747077	104	37	17.7
1650	483986.5	2747074	104	21	40.1
1660	483996.2	2747072	104	6	2.5
1670	484005.9	2747069	103	50	25
1680	484015.6	2747067	103	34	47.4
1690	484025.3	2747065	103	19	9.8
1700	484035	2747062	103	3	32.3
1710	484044.8	2747060	102	47	54.7
1720	484054.6	2747058	102	32	17.1
1730	484064.3	2747056	102	16	39.6
1740	484074.1	2747054	102	1	2
1747.572	484081.5	2747052	101	49	12
1747.572	484081.5	2747052	101	49	12
1750	484083.9	2747052	101	49	12
1760	484093.7	2747050	101	49	12
1770	484103.5	2747048	101	49	12
1780	484113.2	2747046	101	49	12
1790	484123	2747044	101	49	12
1800	484132.8	2747041	101	49	12
1810	484142.6	2747039	101	49	12
1820	484152.4	2747037	101	49	12
1830	484162.2	2747035	101	49	12
1840	484172	2747033	101	49	12
1850	484181.8	2747031	101	49	12
1860	484191.5	2747029	101	49	12
1870	484201.3	2747027	101	49	12
1880	484211.1	2747025	101	49	12
1890	484220.9	2747023	101	49	12
1900	484230.7	2747021	101	49	12
1910	484240.5	2747019	101	49	12
1920	484250.3	2747017	101	49	12
1930	484260.1	2747015	101	49	12
1940	484269.9	2747013	101	49	12
1950	484279.6	2747011	101	49	12
1960	484289.4	2747009	101	49	12
1970	484299.2	2747007	101	49	12
1980	484309	2747005	101	49	12
1990	484318.8	2747003	101	49	12
2000	484328.6	2747001	101	49	12
2010	484338.4	2746998	101	49	12

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
2020	484348.2	2746996	101	49	12
2030	484357.9	2746994	101	49	12
2040	484367.7	2746992	101	49	12
2050	484377.5	2746990	101	49	12
2060	484387.3	2746988	101	49	12
2070	484397.1	2746986	101	49	12
2080	484406.9	2746984	101	49	12
2090	484416.7	2746982	101	49	12
2100	484426.5	2746980	101	49	12
2110	484436.2	2746978	101	49	12
2120	484446	2746976	101	49	12
2130	484455.8	2746974	101	49	12
2140	484465.6	2746972	101	49	12
2150	484475.4	2746970	101	49	12
2160	484485.2	2746968	101	49	12
2170	484495	2746966	101	49	12
2180	484504.8	2746964	101	49	12
2190	484514.6	2746962	101	49	12
2200	484524.3	2746960	101	49	12
2210	484534.1	2746958	101	49	12
2220	484543.9	2746955	101	49	12
2230	484553.7	2746953	101	49	12
2240	484563.5	2746951	101	49	12
2250	484573.3	2746949	101	49	12
2260	484583.1	2746947	101	49	12
2270	484592.9	2746945	101	49	12
2280	484602.6	2746943	101	49	12
2290	484612.4	2746941	101	49	12
2300	484622.2	2746939	101	49	12
2310	484632	2746937	101	49	12
2320	484641.8	2746935	101	49	12
2330	484651.6	2746933	101	49	12
2340	484661.4	2746931	101	49	12
2350	484671.2	2746929	101	49	12
2360	484680.9	2746927	101	49	12
2370	484690.7	2746925	101	49	12
2380	484700.5	2746923	101	49	12
2390	484710.3	2746921	101	49	12
2400	484720.1	2746919	101	49	12
2410	484729.9	2746917	101	49	12
2420	484739.7	2746914	101	49	12
2430	484749.5	2746912	101	49	12
2440	484759.2	2746910	101	49	12
2450	484769	2746908	101	49	12

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
2460	484778.8	2746906	101	49	12
2470	484788.6	2746904	101	49	12
2480	484798.4	2746902	101	49	12
2490	484808.2	2746900	101	49	12
2500	484818	2746898	101	49	12
2510	484827.8	2746896	101	49	12
2520	484837.6	2746894	101	49	12
2530	484847.3	2746892	101	49	12
2540	484857.1	2746890	101	49	12
2550	484866.9	2746888	101	49	12
2560	484876.7	2746886	101	49	12
2570	484886.5	2746884	101	49	12
2580	484896.3	2746882	101	49	12
2590	484906.1	2746880	101	49	12
2600	484915.9	2746878	101	49	12
2610	484925.6	2746876	101	49	12
2620	484935.4	2746874	101	49	12
2630	484945.2	2746871	101	49	12
2640	484955	2746869	101	49	12
2650	484964.8	2746867	101	49	12
2660	484974.6	2746865	101	49	12
2670	484984.4	2746863	101	49	12
2680	484994.2	2746861	101	49	12
2690	485003.9	2746859	101	49	12
2700	485013.7	2746857	101	49	12
2710	485023.5	2746855	101	49	12
2720	485033.3	2746853	101	49	12
2730	485043.1	2746851	101	49	12
2740	485052.9	2746849	101	49	12
2745.958	485058.7	2746848	101	49	12
2745.958	485058.7	2746848	101	49	12
2750	485062.7	2746847	101	55	31.1
2760	485072.5	2746845	102	11	8.6
2770	485082.2	2746843	102	26	46.2
2780	485092	2746840	102	42	23.8
2790	485101.7	2746838	102	58	1.3
2800	485111.5	2746836	103	13	38.9
2810	485121.2	2746834	103	29	16.5
2820	485130.9	2746831	103	44	54
2830	485140.6	2746829	104	0	31.6
2840	485150.3	2746827	104	16	9.2
2850	485160	2746824	104	31	46.7
2860	485169.7	2746821	104	47	24.3
2870	485179.4	2746819	105	3	1.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
2880	485189	2746816	105	18	39.4
2890	485198.6	2746814	105	34	17
2900	485208.3	2746811	105	49	54.6
2910	485217.9	2746808	106	5	32.1
2920	485227.5	2746805	106	21	9.7
2930	485237.1	2746803	106	36	47.3
2940	485246.6	2746800	106	52	24.8
2950	485256.2	2746797	107	8	2.4
2960	485265.8	2746794	107	23	40
2970	485275.3	2746791	107	39	17.5
2980	485284.8	2746788	107	54	55.1
2990	485294.3	2746785	108	10	32.7
3000	485303.8	2746781	108	26	10.2
3010	485313.3	2746778	108	41	47.8
3014.208	485317.3	2746777	108	48	22.3
3014.208	485317.3	2746777	108	48	22.3
3020	485322.8	2746775	108	48	22.3
3030	485332.2	2746772	108	48	22.3
3040	485341.7	2746769	108	48	22.3
3050	485351.2	2746765	108	48	22.3
3060	485360.6	2746762	108	48	22.3
3070	485370.1	2746759	108	48	22.3
3080	485379.6	2746756	108	48	22.3
3090	485389	2746752	108	48	22.3
3100	485398.5	2746749	108	48	22.3
3110	485408	2746746	108	48	22.3
3120	485417.4	2746743	108	48	22.3
3130	485426.9	2746740	108	48	22.3
3140	485436.4	2746736	108	48	22.3
3150	485445.8	2746733	108	48	22.3
3160	485455.3	2746730	108	48	22.3
3170	485464.8	2746727	108	48	22.3
3180	485474.2	2746723	108	48	22.3
3190	485483.7	2746720	108	48	22.3
3200	485493.2	2746717	108	48	22.3
3210	485502.6	2746714	108	48	22.3
3220	485512.1	2746711	108	48	22.3
3230	485521.6	2746707	108	48	22.3
3240	485531	2746704	108	48	22.3
3250	485540.5	2746701	108	48	22.3
3260	485550	2746698	108	48	22.3
3270	485559.4	2746694	108	48	22.3
3280	485568.9	2746691	108	48	22.3
3290	485578.4	2746688	108	48	22.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
3300	485587.8	2746685	108	48	22.3
3310	485597.3	2746682	108	48	22.3
3320	485606.8	2746678	108	48	22.3
3330	485616.2	2746675	108	48	22.3
3340	485625.7	2746672	108	48	22.3
3350	485635.2	2746669	108	48	22.3
3360	485644.6	2746665	108	48	22.3
3370	485654.1	2746662	108	48	22.3
3380	485663.6	2746659	108	48	22.3
3390	485673	2746656	108	48	22.3
3400	485682.5	2746653	108	48	22.3
3410	485691.9	2746649	108	48	22.3
3420	485701.4	2746646	108	48	22.3
3430	485710.9	2746643	108	48	22.3
3440	485720.3	2746640	108	48	22.3
3450	485729.8	2746636	108	48	22.3
3460	485739.3	2746633	108	48	22.3
3470	485748.7	2746630	108	48	22.3
3480	485758.2	2746627	108	48	22.3
3490	485767.7	2746624	108	48	22.3
3500	485777.1	2746620	108	48	22.3
3510	485786.6	2746617	108	48	22.3
3520	485796.1	2746614	108	48	22.3
3530	485805.5	2746611	108	48	22.3
3540	485815	2746607	108	48	22.3
3550	485824.5	2746604	108	48	22.3
3560	485833.9	2746601	108	48	22.3
3570	485843.4	2746598	108	48	22.3
3580	485852.9	2746595	108	48	22.3
3590	485862.3	2746591	108	48	22.3
3600	485871.8	2746588	108	48	22.3
3610	485881.3	2746585	108	48	22.3
3620	485890.7	2746582	108	48	22.3
3630	485900.2	2746578	108	48	22.3
3640	485909.7	2746575	108	48	22.3
3650	485919.1	2746572	108	48	22.3
3660	485928.6	2746569	108	48	22.3
3670	485938.1	2746566	108	48	22.3
3680	485947.5	2746562	108	48	22.3
3690	485957	2746559	108	48	22.3
3700	485966.5	2746556	108	48	22.3
3710	485975.9	2746553	108	48	22.3
3720	485985.4	2746549	108	48	22.3
3723.738	485988.9	2746548	108	48	22.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
3730	485994.9	2746546	108	49	43.2
3740	486004.3	2746543	108	57	27.8
3750	486013.8	2746540	109	12	4.9
3760	486023.2	2746536	109	33	34.6
3770	486032.6	2746533	110	1	56.8
3780	486042	2746530	110	37	11.5
3790	486051.3	2746526	111	19	18.8
3800	486060.6	2746522	112	8	18.6
3810	486069.9	2746518	113	4	10.9
3820	486079	2746514	114	6	55.7
3823.738	486082.4	2746513	114	32	8.8
3830	486088.1	2746510	115	15	12.2
3840	486097.1	2746506	116	23	57.5
3850	486106	2746501	117	32	42.8
3860	486114.8	2746497	118	41	28.1
3870	486123.6	2746492	119	50	13.4
3880	486132.2	2746487	120	58	58.7
3890	486140.7	2746481	122	7	44
3900	486149.1	2746476	123	16	29.3
3910	486157.4	2746470	124	25	14.6
3920	486165.6	2746465	125	33	59.9
3930	486173.7	2746459	126	42	45.2
3940	486181.7	2746453	127	51	30.5
3950	486189.5	2746447	129	0	15.8
3960	486197.2	2746440	130	9	1.1
3970	486204.8	2746434	131	17	46.3
3980	486212.2	2746427	132	26	31.6
3990	486219.5	2746420	133	35	16.9
4000	486226.7	2746413	134	44	2.2
4010	486233.7	2746406	135	52	47.5
4020	486240.6	2746399	137	1	32.8
4030	486247.4	2746391	138	10	18.1
4040	486254	2746384	139	19	3.4
4050	486260.4	2746376	140	27	48.7
4060	486266.7	2746369	141	36	34
4070	486272.8	2746361	142	45	19.3
4080	486278.8	2746353	143	54	4.6
4090	486284.6	2746344	145	2	49.9
4100	486290.3	2746336	146	11	35.2
4110	486295.7	2746328	147	20	20.5
4120	486301.1	2746319	148	29	5.8
4130	486306.2	2746311	149	37	51.1
4140	486311.2	2746302	150	46	36.4
4150	486316	2746293	151	55	21.7

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
4160	486320.6	2746284	153	4	7
4170	486325	2746275	154	12	52.3
4180	486329.3	2746266	155	21	37.6
4190	486333.4	2746257	156	30	22.9
4200	486337.2	2746248	157	39	8.2
4210	486341	2746239	158	47	53.5
4220	486344.5	2746229	159	56	38.8
4230	486347.8	2746220	161	5	24
4240	486351	2746211	162	14	9.3
4250	486353.9	2746201	163	22	54.6
4260	486356.7	2746191	164	31	39.9
4270	486359.3	2746182	165	40	25.2
4280	486361.6	2746172	166	49	10.5
4290	486363.8	2746162	167	57	55.8
4300	486365.8	2746152	169	6	41.1
4310	486367.6	2746143	170	15	26.4
4320	486369.2	2746133	171	24	11.7
4330	486370.6	2746123	172	32	57
4340	486371.8	2746113	173	41	42.3
4350	486372.8	2746103	174	50	27.6
4360	486373.6	2746093	175	59	12.9
4370	486374.2	2746083	177	7	58.2
4380	486374.6	2746073	178	16	43.5
4390	486374.8	2746063	179	25	28.8
4400	486374.8	2746053	180	34	14.1
4410	486374.6	2746043	181	42	59.4
4420	486374.2	2746033	182	51	44.7
4430	486373.6	2746023	184	0	30
4440	486372.8	2746013	185	9	15.3
4441.39	486372.7	2746012	185	18	48.5
4450	486371.8	2746003	186	15	27.6
4460	486370.6	2745993	187	14	51.5
4470	486369.3	2745983	188	7	22.8
4480	486367.8	2745973	188	53	1.5
4490	486366.2	2745964	189	31	47.8
4500	486364.5	2745954	190	3	41.5
4510	486362.7	2745944	190	28	42.7
4520	486360.8	2745934	190	46	51.3
4530	486359	2745924	190	58	7.4
4540	486357.1	2745914	191	2	31
4541.39	486356.8	2745913	191	2	35
4550	486355.1	2745905	191	2	35
4560	486353.2	2745895	191	2	35
4570	486351.3	2745885	191	2	35

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
4580	486349.4	2745875	191	2	35
4590	486347.5	2745865	191	2	35
4600	486345.6	2745855	191	2	35
4610	486343.6	2745846	191	2	35
4620	486341.7	2745836	191	2	35
4630	486339.8	2745826	191	2	35
4640	486337.9	2745816	191	2	35
4650	486336	2745806	191	2	35
4660	486334.1	2745797	191	2	35
4670	486332.1	2745787	191	2	35
4680	486330.2	2745777	191	2	35
4690	486328.3	2745767	191	2	35
4700	486326.4	2745757	191	2	35
4710	486324.5	2745748	191	2	35
4720	486322.6	2745738	191	2	35
4730	486320.7	2745728	191	2	35
4740	486318.7	2745718	191	2	35
4750	486316.8	2745708	191	2	35
4760	486314.9	2745698	191	2	35
4770	486313	2745689	191	2	35
4780	486311.1	2745679	191	2	35
4790	486309.2	2745669	191	2	35
4800	486307.2	2745659	191	2	35
4810	486305.3	2745649	191	2	35
4820	486303.4	2745640	191	2	35
4830	486301.5	2745630	191	2	35
4840	486299.6	2745620	191	2	35
4850	486297.7	2745610	191	2	35
4860	486295.8	2745600	191	2	35
4862.283	486295.3	2745598	191	2	35
4870	486293.8	2745590	191	4	2.7
4880	486291.9	2745581	191	10	17.4
4890	486290	2745571	191	21	26.8
4900	486288	2745561	191	37	30.9
4910	486285.9	2745551	191	58	29.6
4920	486283.8	2745541	192	24	22.9
4930	486281.6	2745532	192	55	11
4940	486279.3	2745522	193	30	53.6
4950	486276.9	2745512	194	11	31
4960	486274.4	2745503	194	57	3
4962.283	486273.8	2745500	195	8	8.2
4970	486271.8	2745493	195	46	2
4980	486269	2745483	196	35	8.6
4990	486266.1	2745474	197	24	15.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
5000	486263	2745464	198	13	21.9
5010	486259.8	2745455	199	2	28.6
5020	486256.5	2745445	199	51	35.2
5030	486253	2745436	200	40	41.8
5040	486249.4	2745427	201	29	48.5
5050	486245.7	2745417	202	18	55.1
5060	486241.8	2745408	203	8	1.8
5070	486237.8	2745399	203	57	8.4
5070.47	486237.6	2745399	203	59	26.8
5080	486233.7	2745390	204	44	1.2
5090	486229.5	2745381	205	25	59.7
5100	486225.1	2745372	206	3	3.5
5110	486220.7	2745363	206	35	12.7
5120	486216.2	2745354	207	2	27.2
5130	486211.6	2745345	207	24	47
5140	486207	2745336	207	42	12.1
5150	486202.3	2745327	207	54	42.6
5160	486197.6	2745319	208	2	18.5
5170	486192.9	2745310	208	4	59.6
5170.47	486192.7	2745309	208	5	0
5180	486188.2	2745301	208	5	0
5190	486183.5	2745292	208	5	0
5200	486178.8	2745283	208	5	0
5210	486174.1	2745274	208	5	0
5220	486169.4	2745266	208	5	0
5230	486164.7	2745257	208	5	0
5240	486160	2745248	208	5	0
5250	486155.3	2745239	208	5	0
5260	486150.5	2745230	208	5	0
5270	486145.8	2745221	208	5	0
5272.137	486144.8	2745220	208	5	0
5280	486141.1	2745213	208	3	56.2
5290	486136.4	2745204	207	59	30.9
5300	486131.8	2745195	207	51	39.3
5310	486127.1	2745186	207	40	21.5
5320	486122.5	2745177	207	25	37.3
5330	486117.9	2745168	207	7	27
5340	486113.4	2745159	206	45	50.3
5350	486108.9	2745151	206	20	47.4
5360	486104.5	2745142	205	52	18.3
5370	486100.2	2745133	205	20	22.8
5372.137	486099.2	2745131	205	13	6.7
5380	486095.9	2745123	204	46	4.9
5390	486091.8	2745114	204	11	42.2

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
5400	486087.7	2745105	203	37	19.6
5410	486083.8	2745096	203	2	56.9
5420	486079.9	2745087	202	28	34.3
5430	486076.1	2745078	201	54	11.6
5440	486072.4	2745068	201	19	49
5450	486068.8	2745059	200	45	26.3
5460	486065.3	2745050	200	11	3.7
5470	486061.9	2745040	199	36	41.1
5480	486058.6	2745031	199	2	18.4
5490	486055.4	2745021	198	27	55.8
5500	486052.3	2745012	197	53	33.1
5510	486049.3	2745002	197	19	10.5
5520	486046.3	2744993	196	44	47.8
5530	486043.5	2744983	196	10	25.2
5540	486040.8	2744973	195	36	2.5
5550	486038.1	2744964	195	1	39.9
5560	486035.6	2744954	194	27	17.2
5570	486033.1	2744944	193	52	54.6
5580	486030.8	2744935	193	18	31.9
5590	486028.5	2744925	192	44	9.3
5600	486026.4	2744915	192	9	46.6
5610	486024.3	2744905	191	35	24
5620	486022.4	2744896	191	1	1.3
5626.488	486021.1	2744889	190	38	43.2
5630	486020.5	2744886	190	26	51.4
5640	486018.7	2744876	189	55	24.3
5650	486017	2744866	189	27	23.5
5660	486015.4	2744856	189	2	49
5670	486013.9	2744846	188	41	40.7
5680	486012.4	2744836	188	23	58.7
5690	486011	2744827	188	9	43
5700	486009.6	2744817	187	58	53.5
5710	486008.2	2744807	187	51	30.3
5720	486006.8	2744797	187	47	33.3
5726.488	486006	2744790	187	46	49.9
5730	486005.5	2744787	187	46	49.9
5740	486004.1	2744777	187	46	49.9
5750	486002.8	2744767	187	46	49.9
5760	486001.4	2744757	187	46	49.9
5770	486000.1	2744747	187	46	49.9
5780	485998.7	2744737	187	46	49.9
5790	485997.4	2744727	187	46	49.9
5800	485996	2744718	187	46	49.9
5810	485994.7	2744708	187	46	49.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
5820	485993.3	2744698	187	46	49.9
5830	485991.9	2744688	187	46	49.9
5840	485990.6	2744678	187	46	49.9
5850	485989.2	2744668	187	46	49.9
5850.763	485989.1	2744667	187	46	49.9
5860	485987.9	2744658	187	43	53.9
5870	485986.6	2744648	187	34	6.6
5880	485985.3	2744638	187	17	26.7
5890	485984	2744628	186	53	54.4
5900	485982.9	2744618	186	23	29.4
5910	485981.8	2744608	185	46	12
5920	485980.9	2744599	185	2	2
5930	485980.1	2744589	184	10	59.5
5940	485979.4	2744579	183	13	4.5
5950	485978.9	2744569	182	8	16.9
5950.763	485978.9	2744568	182	3	3.4
5960	485978.7	2744559	180	59	32.8
5970	485978.6	2744549	179	50	47.5
5980	485978.7	2744539	178	42	2.2
5990	485979	2744529	177	33	16.9
6000	485979.6	2744519	176	24	31.6
6010	485980.3	2744509	175	15	46.3
6020	485981.2	2744499	174	7	1
6030	485982.3	2744489	172	58	15.7
6040	485983.7	2744479	171	49	30.4
6050	485985.2	2744469	170	40	45.2
6060	485986.9	2744459	169	31	59.9
6070	485988.8	2744449	168	23	14.6
6080	485990.9	2744440	167	14	29.3
6090	485993.2	2744430	166	5	44
6100	485995.7	2744420	164	56	58.7
6110	485998.4	2744410	163	48	13.4
6120	486001.3	2744401	162	39	28.1
6130	486004.4	2744391	161	30	42.8
6140	486007.7	2744382	160	21	57.5
6150	486011.1	2744373	159	13	12.2
6160	486014.8	2744363	158	4	26.9
6170	486018.6	2744354	156	55	41.6
6179.036	486022.2	2744346	155	53	34
6180	486022.6	2744345	155	46	58.2
6190	486026.8	2744336	154	42	19
6200	486031.1	2744327	153	44	32.2
6210	486035.6	2744318	152	53	38
6220	486040.2	2744309	152	9	36.4

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
6230	486045	2744300	151	32	27.2
6240	486049.8	2744291	151	2	10.6
6250	486054.6	2744283	150	38	46.5
6260	486059.6	2744274	150	22	15
6270	486064.5	2744265	150	12	35.9
6279.036	486069	2744257	150	9	47.5
6280	486069.5	2744257	150	9	47.5
6290	486074.5	2744248	150	9	47.5
6300	486079.4	2744239	150	9	47.5
6302.934	486080.9	2744237	150	9	47.5
6310	486084.4	2744231	150	11	30.5
6320	486089.4	2744222	150	19	48.3
6330	486094.3	2744213	150	34	58.6
6340	486099.2	2744204	150	57	1.4
6350	486104	2744196	151	25	56.8
6360	486108.8	2744187	152	1	44.7
6370	486113.4	2744178	152	44	25.1
6380	486117.9	2744169	153	33	58
6390	486122.3	2744160	154	30	23.5
6400	486126.5	2744151	155	33	41.5
6402.934	486127.7	2744148	155	53	34
6410	486130.6	2744142	156	42	9
6420	486134.4	2744133	157	50	54.3
6430	486138.1	2744123	158	59	39.6
6440	486141.6	2744114	160	8	24.9
6450	486144.9	2744105	161	17	10.2
6460	486148	2744095	162	25	55.5
6470	486150.9	2744085	163	34	40.8
6480	486153.7	2744076	164	43	26.1
6490	486156.2	2744066	165	52	11.4
6500	486158.5	2744056	167	0	56.7
6510	486160.7	2744047	168	9	42
6520	486162.6	2744037	169	18	27.3
6530	486164.4	2744027	170	27	12.6
6540	486166	2744017	171	35	57.9
6550	486167.3	2744007	172	44	43.2
6560	486168.5	2743997	173	53	28.5
6570	486169.4	2743987	175	2	13.8
6580	486170.2	2743977	176	10	59.1
6590	486170.8	2743967	177	19	44.4
6600	486171.1	2743957	178	28	29.7
6610	486171.3	2743947	179	37	14.9
6620	486171.3	2743937	180	46	0.2
6630	486171	2743927	181	54	45.5

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
6632.942	486170.9	2743925	182	14	59.2
6640	486170.6	2743917	183	1	48.1
6650	486170	2743907	184	2	16
6660	486169.2	2743898	184	55	51.3
6670	486168.3	2743888	185	42	34.1
6680	486167.2	2743878	186	22	24.4
6690	486166.1	2743868	186	55	22.2
6700	486164.8	2743858	187	21	27.4
6710	486163.5	2743848	187	40	40.1
6720	486162.2	2743838	187	53	0.2
6730	486160.8	2743828	187	58	27.9
6732.942	486160.4	2743825	187	58	45.7
6740	486159.4	2743818	187	58	45.7
6750	486158	2743808	187	58	45.7
6760	486156.6	2743798	187	58	45.7
6770	486155.2	2743788	187	58	45.7
6780	486153.8	2743779	187	58	45.7
6790	486152.4	2743769	187	58	45.7
6800	486151.1	2743759	187	58	45.7
6810	486149.7	2743749	187	58	45.7
6820	486148.3	2743739	187	58	45.7
6830	486146.9	2743729	187	58	45.7
6840	486145.5	2743719	187	58	45.7
6850	486144.1	2743709	187	58	45.7
6860	486142.7	2743699	187	58	45.7
6870	486141.3	2743689	187	58	45.7
6880	486140	2743679	187	58	45.7
6890	486138.6	2743670	187	58	45.7
6900	486137.2	2743660	187	58	45.7
6910	486135.8	2743650	187	58	45.7
6920	486134.4	2743640	187	58	45.7
6930	486133	2743630	187	58	45.7
6934.626	486132.4	2743625	187	58	45.7
6940	486131.6	2743620	187	58	10.7
6950	486130.2	2743610	187	53	59
6960	486128.9	2743600	187	45	44.6
6970	486127.5	2743590	187	33	27.5
6980	486126.3	2743580	187	17	7.8
6990	486125	2743571	186	56	45.4
7000	486123.8	2743561	186	32	20.3
7010	486122.7	2743551	186	3	52.6
7019.626	486121.8	2743541	185	32	39.5
7020	486121.7	2743541	185	31	22.4
7030	486120.8	2743531	184	56	59.7

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
7040	486120	2743521	184	22	37.1
7050	486119.3	2743511	183	48	14.4
7060	486118.7	2743501	183	13	51.8
7070	486118.2	2743491	182	39	29.1
7080	486117.8	2743481	182	5	6.5
7090	486117.4	2743471	181	30	43.8
7100	486117.2	2743461	180	56	21.2
7110	486117.1	2743451	180	21	58.6
7120	486117.1	2743441	179	47	35.9
7130	486117.2	2743431	179	13	13.3
7140	486117.4	2743421	178	38	50.6
7143.598	486117.5	2743417	178	26	28.5
7150	486117.7	2743411	178	5	17.7
7160	486118	2743401	177	35	31.7
7170	486118.5	2743391	177	9	48.4
7180	486119	2743381	176	48	7.8
7190	486119.6	2743371	176	30	29.8
7200	486120.2	2743361	176	16	54.5
7210	486120.9	2743351	176	7	21.9
7220	486121.6	2743341	176	1	51.9
7228.598	486122.2	2743332	176	0	22.2
7230	486122.3	2743331	176	0	22.2
7239.416	486122.9	2743322	176	0	22.2
7240	486123	2743321	176	0	22.8
7250	486123.7	2743311	176	3	34.8
7260	486124.3	2743301	176	12	30.5
7270	486125	2743291	176	27	10.1
7280	486125.6	2743281	176	47	33.4
7290	486126.1	2743271	177	13	40.4
7300	486126.5	2743261	177	45	31.3
7310	486126.9	2743251	178	23	5.9
7320	486127.1	2743241	179	6	24.3
7330	486127.2	2743231	179	55	26.5
7339.416	486127.1	2743222	180	46	51
7340	486127.1	2743221	180	50	11.8
7350	486126.9	2743211	181	47	29.6
7360	486126.5	2743201	182	44	47.3
7370	486125.9	2743191	183	42	5.1
7380	486125.2	2743181	184	39	22.8
7390	486124.3	2743171	185	36	40.6
7400	486123.2	2743161	186	33	58.3
7410	486122	2743151	187	31	16.1
7420	486120.6	2743141	188	28	33.8
7430	486119.1	2743132	189	25	51.6

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
7440	486117.3	2743122	190	23	9.3
7450	486115.5	2743112	191	20	27.1
7460	486113.4	2743102	192	17	44.8
7470	486111.2	2743092	193	15	2.6
7480	486108.8	2743083	194	12	20.3
7490	486106.3	2743073	195	9	38
7490.414	486106.2	2743073	195	12	0.4
7500	486103.6	2743063	196	4	17.8
7510	486100.8	2743054	196	53	14.2
7520	486097.8	2743044	197	36	26.7
7530	486094.7	2743035	198	13	55.5
7540	486091.5	2743025	198	45	40.5
7550	486088.3	2743016	199	11	41.7
7560	486085	2743006	199	31	59.1
7570	486081.6	2742997	199	46	32.8
7580	486078.2	2742987	199	55	22.7
7590	486074.8	2742978	199	58	28.8
7590.414	486074.7	2742978	199	58	29.1
7600	486071.4	2742969	199	58	29.1
7610	486068	2742959	199	58	29.1
7620	486064.6	2742950	199	58	29.1
7630	486061.1	2742940	199	58	29.1
7640	486057.7	2742931	199	58	29.1
7650	486054.3	2742922	199	58	29.1
7660	486050.9	2742912	199	58	29.1
7670	486047.5	2742903	199	58	29.1
7680	486044.1	2742894	199	58	29.1
7690	486040.6	2742884	199	58	29.1
7700	486037.2	2742875	199	58	29.1
7710	486033.8	2742865	199	58	29.1
7720	486030.4	2742856	199	58	29.1
7730	486027	2742847	199	58	29.1
7740	486023.6	2742837	199	58	29.1
7750	486020.1	2742828	199	58	29.1
7760	486016.7	2742818	199	58	29.1
7770	486013.3	2742809	199	58	29.1
7780	486009.9	2742800	199	58	29.1
7790	486006.5	2742790	199	58	29.1
7800	486003.1	2742781	199	58	29.1
7810	485999.6	2742771	199	58	29.1
7820	485996.2	2742762	199	58	29.1
7830	485992.8	2742753	199	58	29.1
7840	485989.4	2742743	199	58	29.1
7850	485986	2742734	199	58	29.1

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
7860	485982.6	2742724	199	58	29.1
7870	485979.1	2742715	199	58	29.1
7880	485975.7	2742706	199	58	29.1
7890	485972.3	2742696	199	58	29.1
7900	485968.9	2742687	199	58	29.1
7910	485965.5	2742677	199	58	29.1
7920	485962.1	2742668	199	58	29.1
7930	485958.7	2742659	199	58	29.1
7940	485955.2	2742649	199	58	29.1
7950	485951.8	2742640	199	58	29.1
7960	485948.4	2742630	199	58	29.1
7970	485945	2742621	199	58	29.1
7980	485941.6	2742612	199	58	29.1
7990	485938.2	2742602	199	58	29.1
8000	485934.7	2742593	199	58	29.1
8010	485931.3	2742583	199	58	29.1
8020	485927.9	2742574	199	58	29.1
8030	485924.5	2742565	199	58	29.1
8040	485921.1	2742555	199	58	29.1
8050	485917.7	2742546	199	58	29.1
8060	485914.2	2742536	199	58	29.1
8067.391	485911.7	2742529	199	58	29.1
8067.391	485911.7	2742529	199	58	29.1
8070	485910.8	2742527	199	56	41.5
8080	485907.4	2742518	199	49	48.9
8090	485904	2742508	199	42	56.4
8100	485900.7	2742499	199	36	3.9
8110	485897.3	2742489	199	29	11.3
8120	485894	2742480	199	22	18.8
8130	485890.7	2742470	199	15	26.3
8140	485887.4	2742461	199	8	33.7
8150	485884.1	2742452	199	1	41.2
8160	485880.9	2742442	198	54	48.7
8170	485877.7	2742433	198	47	56.2
8180	485874.4	2742423	198	41	3.6
8190	485871.3	2742414	198	34	11.1
8200	485868.1	2742404	198	27	18.6
8210	485864.9	2742395	198	20	26
8220	485861.8	2742385	198	13	33.5
8230	485858.7	2742376	198	6	41
8240	485855.6	2742366	197	59	48.4
8250	485852.5	2742357	197	52	55.9
8260	485849.4	2742347	197	46	3.4
8270	485846.4	2742338	197	39	10.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
8273.17	485845.4	2742335	197	37	0.1
8273.17	485845.4	2742335	197	37	0.1
8280	485843.4	2742328	197	37	0.1
8290	485840.3	2742319	197	37	0.1
8300	485837.3	2742309	197	37	0.1
8310	485834.3	2742300	197	37	0.1
8320	485831.3	2742290	197	37	0.1
8330	485828.2	2742280	197	37	0.1
8340	485825.2	2742271	197	37	0.1
8350	485822.2	2742261	197	37	0.1
8360	485819.1	2742252	197	37	0.1
8370	485816.1	2742242	197	37	0.1
8380	485813.1	2742233	197	37	0.1
8390	485810.1	2742223	197	37	0.1
8400	485807	2742214	197	37	0.1
8410	485804	2742204	197	37	0.1
8420	485801	2742195	197	37	0.1
8430	485798	2742185	197	37	0.1
8440	485794.9	2742176	197	37	0.1
8450	485791.9	2742166	197	37	0.1
8460	485788.9	2742157	197	37	0.1
8470	485785.9	2742147	197	37	0.1
8480	485782.8	2742137	197	37	0.1
8490	485779.8	2742128	197	37	0.1
8500	485776.8	2742118	197	37	0.1
8510	485773.7	2742109	197	37	0.1
8520	485770.7	2742099	197	37	0.1
8530	485767.7	2742090	197	37	0.1
8540	485764.7	2742080	197	37	0.1
8550	485761.6	2742071	197	37	0.1
8560	485758.6	2742061	197	37	0.1
8570	485755.6	2742052	197	37	0.1
8580	485752.6	2742042	197	37	0.1
8590	485749.5	2742033	197	37	0.1
8600	485746.5	2742023	197	37	0.1
8610	485743.5	2742014	197	37	0.1
8620	485740.5	2742004	197	37	0.1
8630	485737.4	2741995	197	37	0.1
8640	485734.4	2741985	197	37	0.1
8650	485731.4	2741975	197	37	0.1
8660	485728.4	2741966	197	37	0.1
8670	485725.3	2741956	197	37	0.1
8680	485722.3	2741947	197	37	0.1
8690	485719.3	2741937	197	37	0.1

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
8700	485716.2	2741928	197	37	0.1
8710	485713.2	2741918	197	37	0.1
8720	485710.2	2741909	197	37	0.1
8730	485707.2	2741899	197	37	0.1
8740	485704.1	2741890	197	37	0.1
8750	485701.1	2741880	197	37	0.1
8760	485698.1	2741871	197	37	0.1
8770	485695.1	2741861	197	37	0.1
8780	485692	2741852	197	37	0.1
8790	485689	2741842	197	37	0.1
8800	485686	2741833	197	37	0.1
8810	485683	2741823	197	37	0.1
8820	485679.9	2741813	197	37	0.1
8830	485676.9	2741804	197	37	0.1
8840	485673.9	2741794	197	37	0.1
8850	485670.8	2741785	197	37	0.1
8859.063	485668.1	2741776	197	37	0.1
8859.063	485668.1	2741776	197	37	0.1
8860	485667.8	2741775	197	35	42.8
8870	485664.8	2741766	197	21	57.8
8880	485661.9	2741756	197	8	12.7
8890	485658.9	2741747	196	54	27.7
8900	485656	2741737	196	40	42.6
8910	485653.2	2741728	196	26	57.5
8920	485650.4	2741718	196	13	12.5
8930	485647.6	2741708	195	59	27.4
8940	485644.9	2741699	195	45	42.4
8950	485642.2	2741689	195	31	57.3
8960	485639.5	2741679	195	18	12.2
8970	485636.9	2741670	195	4	27.2
8980	485634.3	2741660	194	50	42.1
8990	485631.8	2741650	194	36	57.1
9000	485629.3	2741641	194	23	12
9010	485626.8	2741631	194	9	26.9
9020	485624.4	2741621	193	55	41.9
9030	485622	2741612	193	41	56.8
9040	485619.6	2741602	193	28	11.8
9050	485617.3	2741592	193	14	26.7
9060	485615	2741582	193	0	41.6
9070	485612.8	2741573	192	46	56.6
9076.869	485611.3	2741566	192	37	29.9
9076.869	485611.3	2741566	192	37	29.9
9080	485610.6	2741563	192	37	29.9
9090	485608.4	2741553	192	37	29.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
9100	485606.3	2741543	192	37	29.9
9110	485604.1	2741534	192	37	29.9
9120	485601.9	2741524	192	37	29.9
9130	485599.7	2741514	192	37	29.9
9140	485597.5	2741504	192	37	29.9
9150	485595.3	2741495	192	37	29.9
9160	485593.1	2741485	192	37	29.9
9170	485591	2741475	192	37	29.9
9180	485588.8	2741465	192	37	29.9
9190	485586.6	2741456	192	37	29.9
9200	485584.4	2741446	192	37	29.9
9210	485582.2	2741436	192	37	29.9
9220	485580	2741426	192	37	29.9
9230	485577.8	2741417	192	37	29.9
9240	485575.7	2741407	192	37	29.9
9250	485573.5	2741397	192	37	29.9
9260	485571.3	2741387	192	37	29.9
9270	485569.1	2741378	192	37	29.9
9280	485566.9	2741368	192	37	29.9
9290	485564.7	2741358	192	37	29.9
9300	485562.5	2741348	192	37	29.9
9310	485560.4	2741339	192	37	29.9
9320	485558.2	2741329	192	37	29.9
9330	485556	2741319	192	37	29.9
9340	485553.8	2741309	192	37	29.9
9350	485551.6	2741299	192	37	29.9
9360	485549.4	2741290	192	37	29.9
9370	485547.2	2741280	192	37	29.9
9380	485545.1	2741270	192	37	29.9
9390	485542.9	2741260	192	37	29.9
9400	485540.7	2741251	192	37	29.9
9410	485538.5	2741241	192	37	29.9
9420	485536.3	2741231	192	37	29.9
9430	485534.1	2741221	192	37	29.9
9440	485531.9	2741212	192	37	29.9
9450	485529.8	2741202	192	37	29.9
9460	485527.6	2741192	192	37	29.9
9470	485525.4	2741182	192	37	29.9
9480	485523.2	2741173	192	37	29.9
9490	485521	2741163	192	37	29.9
9493.957	485520.1	2741159	192	37	29.9
9493.957	485520.1	2741159	192	37	29.9
9500	485518.8	2741153	192	44	25.4
9510	485516.6	2741143	192	55	52.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
9520	485514.3	2741134	193	7	20.5
9530	485512.1	2741124	193	18	48
9540	485509.7	2741114	193	30	15.6
9550	485507.4	2741104	193	41	43.1
9560	485505	2741095	193	53	10.7
9570	485502.6	2741085	194	4	38.2
9580	485500.1	2741075	194	16	5.8
9590	485497.7	2741066	194	27	33.3
9600	485495.1	2741056	194	39	0.9
9610	485492.6	2741046	194	50	28.4
9620	485490	2741037	195	1	56
9630	485487.4	2741027	195	13	23.5
9640	485484.8	2741017	195	24	51.1
9650	485482.1	2741008	195	36	18.6
9660	485479.4	2740998	195	47	46.2
9670	485476.7	2740988	195	59	13.7
9680	485473.9	2740979	196	10	41.3
9690	485471.1	2740969	196	22	8.8
9700	485468.2	2740960	196	33	36.4
9710	485465.4	2740950	196	45	3.9
9720	485462.5	2740941	196	56	31.5
9730	485459.5	2740931	197	7	59
9740	485456.6	2740921	197	19	26.6
9743.409	485455.6	2740918	197	23	20.9
9743.409	485455.6	2740918	197	23	20.9
9750	485453.6	2740912	197	23	20.9
9760	485450.6	2740902	197	23	20.9
9770	485447.6	2740893	197	23	20.9
9780	485444.6	2740883	197	23	20.9
9790	485441.6	2740874	197	23	20.9
9800	485438.7	2740864	197	23	20.9
9810	485435.7	2740855	197	23	20.9
9820	485432.7	2740845	197	23	20.9
9830	485429.7	2740836	197	23	20.9
9840	485426.7	2740826	197	23	20.9
9850	485423.7	2740816	197	23	20.9
9860	485420.7	2740807	197	23	20.9
9870	485417.7	2740797	197	23	20.9
9880	485414.7	2740788	197	23	20.9
9890	485411.8	2740778	197	23	20.9
9900	485408.8	2740769	197	23	20.9
9910	485405.8	2740759	197	23	20.9
9920	485402.8	2740750	197	23	20.9
9930	485399.8	2740740	197	23	20.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
9940	485396.8	2740731	197	23	20.9
9950	485393.8	2740721	197	23	20.9
9960	485390.8	2740711	197	23	20.9
9970	485387.9	2740702	197	23	20.9
9980	485384.9	2740692	197	23	20.9
9990	485381.9	2740683	197	23	20.9
10000	485378.9	2740673	197	23	20.9
10010	485375.9	2740664	197	23	20.9
10020	485372.9	2740654	197	23	20.9
10030	485369.9	2740645	197	23	20.9
10040	485366.9	2740635	197	23	20.9
10050	485363.9	2740626	197	23	20.9
10060	485361	2740616	197	23	20.9
10070	485358	2740606	197	23	20.9
10080	485355	2740597	197	23	20.9
10090	485352	2740587	197	23	20.9
10100	485349	2740578	197	23	20.9
10110	485346	2740568	197	23	20.9
10120	485343	2740559	197	23	20.9
10130	485340	2740549	197	23	20.9
10140	485337	2740540	197	23	20.9
10150	485334.1	2740530	197	23	20.9
10160	485331.1	2740521	197	23	20.9
10170	485328.1	2740511	197	23	20.9
10180	485325.1	2740501	197	23	20.9
10190	485322.1	2740492	197	23	20.9
10200	485319.1	2740482	197	23	20.9
10210	485316.1	2740473	197	23	20.9
10220	485313.1	2740463	197	23	20.9
10230	485310.1	2740454	197	23	20.9
10240	485307.2	2740444	197	23	20.9
10250	485304.2	2740435	197	23	20.9
10260	485301.2	2740425	197	23	20.9
10270	485298.2	2740416	197	23	20.9
10280	485295.2	2740406	197	23	20.9
10290	485292.2	2740397	197	23	20.9
10300	485289.2	2740387	197	23	20.9
10310	485286.2	2740377	197	23	20.9
10320	485283.3	2740368	197	23	20.9
10330	485280.3	2740358	197	23	20.9
10331.34	485279.9	2740357	197	23	20.9
10331.34	485279.9	2740357	197	23	20.9
10340	485277.3	2740349	197	35	15.7
10350	485274.2	2740339	197	49	0.8

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
10360	485271.1	2740330	198	2	45.8
10370	485268	2740320	198	16	30.9
10380	485264.9	2740311	198	30	16
10390	485261.7	2740301	198	44	1
10400	485258.4	2740292	198	57	46.1
10410	485255.2	2740282	199	11	31.1
10420	485251.9	2740273	199	25	16.2
10430	485248.5	2740264	199	39	1.3
10440	485245.1	2740254	199	52	46.3
10450	485241.7	2740245	200	6	31.4
10460	485238.3	2740235	200	20	16.4
10470	485234.8	2740226	200	34	1.5
10480	485231.2	2740217	200	47	46.5
10490	485227.7	2740207	201	1	31.6
10500	485224.1	2740198	201	15	16.7
10510	485220.4	2740189	201	29	1.7
10520	485216.7	2740179	201	42	46.8
10530	485213	2740170	201	56	31.8
10540	485209.3	2740161	202	10	16.9
10550	485205.5	2740152	202	24	2
10560	485201.6	2740142	202	37	47
10570	485197.8	2740133	202	51	32.1
10580	485193.9	2740124	203	5	17.1
10590	485189.9	2740115	203	19	2.2
10600	485186	2740105	203	32	47.3
10610	485181.9	2740096	203	46	32.3
10620	485177.9	2740087	204	0	17.4
10630	485173.8	2740078	204	14	2.4
10640	485169.7	2740069	204	27	47.5
10650	485165.5	2740060	204	41	32.6
10660	485161.3	2740051	204	55	17.6
10670	485157.1	2740042	205	9	2.7
10670.82	485156.8	2740041	205	10	10.1
10670.82	485156.8	2740041	205	10	10.1
10680	485152.8	2740033	205	10	10.1
10690	485148.6	2740024	205	10	10.1
10700	485144.3	2740015	205	10	10.1
10710	485140.1	2740006	205	10	10.1
10720	485135.8	2739996	205	10	10.1
10730	485131.6	2739987	205	10	10.1
10740	485127.3	2739978	205	10	10.1
10750	485123.1	2739969	205	10	10.1
10760	485118.8	2739960	205	10	10.1
10770	485114.6	2739951	205	10	10.1

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
10780	485110.3	2739942	205	10	10.1
10790	485106.1	2739933	205	10	10.1
10800	485101.8	2739924	205	10	10.1
10810	485097.6	2739915	205	10	10.1
10820	485093.3	2739906	205	10	10.1
10830	485089.1	2739897	205	10	10.1
10840	485084.8	2739888	205	10	10.1
10850	485080.5	2739879	205	10	10.1
10860	485076.3	2739870	205	10	10.1
10870	485072	2739861	205	10	10.1
10880	485067.8	2739852	205	10	10.1
10890	485063.5	2739843	205	10	10.1
10900	485059.3	2739834	205	10	10.1
10910	485055	2739825	205	10	10.1
10920	485050.8	2739815	205	10	10.1
10930	485046.5	2739806	205	10	10.1
10940	485042.3	2739797	205	10	10.1
10950	485038	2739788	205	10	10.1
10960	485033.8	2739779	205	10	10.1
10970	485029.5	2739770	205	10	10.1
10980	485025.3	2739761	205	10	10.1
10990	485021	2739752	205	10	10.1
11000	485016.8	2739743	205	10	10.1
11010	485012.5	2739734	205	10	10.1
11020	485008.2	2739725	205	10	10.1
11030	485004	2739716	205	10	10.1
11040	484999.7	2739707	205	10	10.1
11050	484995.5	2739698	205	10	10.1
11060	484991.2	2739689	205	10	10.1
11070	484987	2739680	205	10	10.1
11080	484982.7	2739671	205	10	10.1
11090	484978.5	2739662	205	10	10.1
11100	484974.2	2739653	205	10	10.1
11110	484970	2739643	205	10	10.1
11120	484965.7	2739634	205	10	10.1
11130	484961.5	2739625	205	10	10.1
11140	484957.2	2739616	205	10	10.1
11150	484953	2739607	205	10	10.1
11160	484948.7	2739598	205	10	10.1
11170	484944.5	2739589	205	10	10.1
11180	484940.2	2739580	205	10	10.1
11190	484935.9	2739571	205	10	10.1
11200	484931.7	2739562	205	10	10.1
11210	484927.4	2739553	205	10	10.1

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
11220	484923.2	2739544	205	10	10.1
11224	484921.5	2739540	205	10	10.1
11230	484918.9	2739535	205	11	3.1
11240	484914.7	2739526	205	16	27.1
11250	484910.4	2739517	205	26	45.9
11260	484906.1	2739508	205	41	59.2
11270	484901.7	2739499	206	2	7.3
11280	484897.3	2739490	206	27	10
11290	484892.8	2739481	206	57	7.3
11300	484888.2	2739472	207	31	59.4
11310	484883.6	2739463	208	11	46.1
11320	484878.8	2739454	208	56	27.4
11324	484876.8	2739451	209	15	43.3
11330	484873.9	2739446	209	45	10.5
11340	484868.8	2739437	210	34	17.1
11350	484863.7	2739428	211	23	23.7
11360	484858.4	2739420	212	12	30.4
11370	484853	2739412	213	1	37
11380	484847.5	2739403	213	50	43.7
11390	484841.9	2739395	214	39	50.3
11400	484836.2	2739387	215	28	56.9
11410	484830.3	2739379	216	18	3.6
11420	484824.3	2739371	217	7	10.2
11430	484818.2	2739363	217	56	16.9
11440	484812	2739355	218	45	23.5
11450	484805.7	2739347	219	34	30.1
11460	484799.3	2739339	220	23	36.8
11470	484792.7	2739332	221	12	43.4
11480	484786.1	2739324	222	1	50.1
11490	484779.4	2739317	222	50	56.7
11500	484772.5	2739310	223	40	3.3
11510	484765.5	2739303	224	29	10
11520	484758.5	2739295	225	18	16.6
11530	484751.3	2739288	226	7	23.3
11540	484744.1	2739282	226	56	29.9
11550	484736.7	2739275	227	45	36.5
11560	484729.3	2739268	228	34	43.2
11570	484721.7	2739262	229	23	49.8
11580	484714.1	2739255	230	12	56.5
11590	484706.3	2739249	231	2	3.1
11600	484698.5	2739243	231	51	9.7
11610	484690.6	2739236	232	40	16.4
11620	484682.6	2739230	233	29	23
11630	484674.5	2739225	234	18	29.7

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
11640	484666.4	2739219	235	7	36.3
11650	484658.1	2739213	235	56	42.9
11660	484649.8	2739208	236	45	49.6
11670	484641.4	2739202	237	34	56.2
11680	484632.9	2739197	238	24	2.9
11690	484624.4	2739192	239	13	9.5
11700	484615.7	2739187	240	2	16.1
11710	484607	2739182	240	51	22.8
11720	484598.3	2739177	241	40	29.4
11730	484589.4	2739172	242	29	36.1
11740	484580.5	2739168	243	18	42.7
11750	484571.6	2739163	244	7	49.3
11760	484562.5	2739159	244	56	56
11770	484553.5	2739155	245	46	2.6
11780	484544.3	2739151	246	35	9.3
11790	484535.1	2739147	247	24	15.9
11800	484525.8	2739143	248	13	22.5
11810	484516.5	2739139	249	2	29.2
11820	484507.2	2739136	249	51	35.8
11830	484497.8	2739132	250	40	42.5
11840	484488.3	2739129	251	29	49.1
11850	484478.8	2739126	252	18	55.7
11860	484469.2	2739123	253	8	2.4
11870	484459.7	2739120	253	57	9
11880	484450	2739118	254	46	15.7
11890	484440.4	2739115	255	35	22.3
11900	484430.7	2739113	256	24	28.9
11910	484420.9	2739110	257	13	35.6
11920	484411.1	2739108	258	2	42.2
11930	484401.4	2739106	258	51	48.9
11940	484391.5	2739104	259	40	55.5
11950	484381.7	2739103	260	30	2.1
11960	484371.8	2739101	261	19	8.8
11970	484361.9	2739100	262	8	15.4
11980	484352	2739098	262	57	22.1
11984.94	484347.1	2739098	263	21	39
11990	484342.1	2739097	263	45	51
12000	484332.1	2739096	264	30	1.4
12010	484322.1	2739095	265	9	17.1
12020	484312.2	2739094	265	43	38.1
12030	484302.2	2739094	266	13	4.4
12040	484292.2	2739093	266	37	36.1
12050	484282.2	2739093	266	57	13.1
12060	484272.3	2739092	267	11	55.4

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
12070	484262.3	2739092	267	21	43.1
12080	484252.3	2739091	267	26	36.1
12084.94	484247.3	2739091	267	27	12.2
12090	484242.3	2739091	267	27	12.2
12100	484232.3	2739090	267	27	12.2
12110	484222.3	2739090	267	27	12.2
12120	484212.3	2739089	267	27	12.2
12130	484202.3	2739089	267	27	12.2
12140	484192.3	2739088	267	27	12.2
12150	484182.3	2739088	267	27	12.2
12160	484172.4	2739088	267	27	12.2
12170	484162.4	2739087	267	27	12.2
12180	484152.4	2739087	267	27	12.2
12190	484142.4	2739086	267	27	12.2
12200	484132.4	2739086	267	27	12.2
12210	484122.4	2739085	267	27	12.2
12220	484112.4	2739085	267	27	12.2
12230	484102.4	2739084	267	27	12.2
12240	484092.4	2739084	267	27	12.2
12250	484082.4	2739084	267	27	12.2
12260	484072.5	2739083	267	27	12.2
12270	484062.5	2739083	267	27	12.2
12280	484052.5	2739082	267	27	12.2
12290	484042.5	2739082	267	27	12.2
12300	484032.5	2739081	267	27	12.2
12310	484022.5	2739081	267	27	12.2
12320	484012.5	2739080	267	27	12.2
12330	484002.5	2739080	267	27	12.2
12340	483992.5	2739080	267	27	12.2
12350	483982.5	2739079	267	27	12.2
12360	483972.6	2739079	267	27	12.2
12370	483962.6	2739078	267	27	12.2
12380	483952.6	2739078	267	27	12.2
12390	483942.6	2739077	267	27	12.2
12400	483932.6	2739077	267	27	12.2
12410	483922.6	2739076	267	27	12.2
12420	483912.6	2739076	267	27	12.2
12430	483902.6	2739076	267	27	12.2
12440	483892.6	2739075	267	27	12.2
12450	483882.6	2739075	267	27	12.2
12460	483872.7	2739074	267	27	12.2
12470	483862.7	2739074	267	27	12.2
12480	483852.7	2739073	267	27	12.2
12484.03	483848.6	2739073	267	27	12.2

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
12490	483842.7	2739073	267	26	5.4
12500	483832.7	2739072	267	19	14.1
12510	483822.7	2739072	267	6	7.7
12520	483812.7	2739071	266	46	46.3
12530	483802.7	2739071	266	21	9.9
12540	483792.8	2739070	265	49	18.5
12550	483782.8	2739069	265	11	12.1
12560	483772.8	2739068	264	26	50.6
12570	483762.9	2739067	263	36	14.1
12580	483753	2739066	262	39	22.5
12584.03	483749	2739066	262	14	40.8
12590	483743	2739065	261	37	22.7
12600	483733.2	2739063	260	34	52.5
12610	483723.3	2739062	259	32	22.2
12620	483713.5	2739060	258	29	51.9
12630	483703.7	2739058	257	27	21.7
12640	483694	2739055	256	24	51.4
12650	483684.3	2739053	255	22	21.1
12660	483674.6	2739050	254	19	50.9
12670	483665	2739048	253	17	20.6
12680	483655.5	2739045	252	14	50.3
12690	483646	2739041	251	12	20
12700	483636.5	2739038	250	9	49.8
12700.81	483635.8	2739038	250	4	45.6
12710	483627.2	2739035	249	9	57.8
12720	483617.9	2739031	248	16	19.7
12730	483608.6	2739027	247	28	56.6
12740	483599.4	2739023	246	47	48.5
12750	483590.2	2739019	246	12	55.4
12760	483581.1	2739015	245	44	17.4
12770	483572	2739011	245	21	54.4
12780	483562.9	2739007	245	5	46.4
12790	483553.8	2739003	244	55	53.5
12800	483544.8	2738998	244	52	15.5
12800.81	483544	2738998	244	52	14.3
12810	483535.7	2738994	244	52	14.3
12820	483526.7	2738990	244	52	14.3
12830	483517.6	2738986	244	52	14.3
12840	483508.6	2738982	244	52	14.3
12850	483499.5	2738977	244	52	14.3
12860	483490.4	2738973	244	52	14.3
12870	483481.4	2738969	244	52	14.3
12880	483472.3	2738965	244	52	14.3
12890	483463.3	2738960	244	52	14.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
12900	483454.2	2738956	244	52	14.3
12910	483445.2	2738952	244	52	14.3
12920	483436.1	2738948	244	52	14.3
12930	483427.1	2738943	244	52	14.3
12940	483418	2738939	244	52	14.3
12950	483409	2738935	244	52	14.3
12960	483399.9	2738931	244	52	14.3
12970	483390.9	2738926	244	52	14.3
12980	483381.8	2738922	244	52	14.3
12990	483372.8	2738918	244	52	14.3
13000	483363.7	2738914	244	52	14.3
13010	483354.6	2738909	244	52	14.3
13020	483345.6	2738905	244	52	14.3
13030	483336.5	2738901	244	52	14.3
13040	483327.5	2738897	244	52	14.3
13050	483318.4	2738892	244	52	14.3
13060	483309.4	2738888	244	52	14.3
13070	483300.3	2738884	244	52	14.3
13080	483291.3	2738880	244	52	14.3
13090	483282.2	2738875	244	52	14.3
13100	483273.2	2738871	244	52	14.3
13110	483264.1	2738867	244	52	14.3
13120	483255.1	2738863	244	52	14.3
13130	483246	2738858	244	52	14.3
13140	483236.9	2738854	244	52	14.3
13150	483227.9	2738850	244	52	14.3
13160	483218.8	2738846	244	52	14.3
13170	483209.8	2738841	244	52	14.3
13180	483200.7	2738837	244	52	14.3
13190	483191.7	2738833	244	52	14.3
13200	483182.6	2738829	244	52	14.3
13210	483173.6	2738824	244	52	14.3
13220	483164.5	2738820	244	52	14.3
13230	483155.5	2738816	244	52	14.3
13240	483146.4	2738812	244	52	14.3
13250	483137.4	2738807	244	52	14.3
13260	483128.3	2738803	244	52	14.3
13270	483119.3	2738799	244	52	14.3
13280	483110.2	2738795	244	52	14.3
13290	483101.1	2738790	244	52	14.3
13300	483092.1	2738786	244	52	14.3
13310	483083	2738782	244	52	14.3
13320	483074	2738778	244	52	14.3
13330	483064.9	2738773	244	52	14.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
13340	483055.9	2738769	244	52	14.3
13350	483046.8	2738765	244	52	14.3
13360	483037.8	2738761	244	52	14.3
13370	483028.7	2738756	244	52	14.3
13380	483019.7	2738752	244	52	14.3
13390	483010.6	2738748	244	52	14.3
13398.62	483002.8	2738744	244	52	14.3
13400	483001.6	2738744	244	52	12.1
13410	482992.5	2738739	244	49	45.9
13420	482983.5	2738735	244	43	30.6
13430	482974.4	2738731	244	33	26
13440	482965.4	2738727	244	19	32.3
13450	482956.4	2738722	244	1	49.3
13458.62	482948.7	2738718	243	43	29
13460	482947.4	2738718	243	40	19.4
13470	482938.5	2738713	243	17	24.3
13480	482929.6	2738709	242	54	29.2
13490	482920.7	2738704	242	31	34.1
13500	482911.8	2738700	242	8	39
13510	482903	2738695	241	45	43.9
13520	482894.2	2738690	241	22	48.8
13530	482885.4	2738685	240	59	53.7
13540	482876.7	2738680	240	36	58.6
13550	482868	2738676	240	14	3.5
13560	482859.3	2738671	239	51	8.4
13570	482850.7	2738665	239	28	13.3
13580	482842.1	2738660	239	5	18.2
13590	482833.5	2738655	238	42	23.1
13600	482825	2738650	238	19	28
13610	482816.5	2738645	237	56	32.9
13620	482808.1	2738639	237	33	37.8
13630	482799.6	2738634	237	10	42.7
13640	482791.3	2738629	236	47	47.6
13650	482782.9	2738623	236	24	52.5
13660	482774.6	2738617	236	1	57.4
13670	482766.3	2738612	235	39	2.3
13680	482758.1	2738606	235	16	7.2
13690	482749.9	2738600	234	53	12.2
13700	482741.7	2738595	234	30	17.1
13710	482733.6	2738589	234	7	22
13720	482725.5	2738583	233	44	26.9
13727.92	482719.2	2738578	233	26	18.5
13730	482717.5	2738577	233	21	36.7
13740	482709.5	2738571	233	1	24

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
13750	482701.5	2738565	232	45	0.5
13760	482693.6	2738559	232	32	26.2
13770	482685.6	2738553	232	23	41
13780	482677.7	2738547	232	18	45
13787.92	482671.4	2738542	232	17	33.2
13790	482669.8	2738541	232	17	33.2
13800	482661.9	2738534	232	17	33.2
13810	482654	2738528	232	17	33.2
13813.35	482651.3	2738526	232	17	33.2
13820	482646.1	2738522	232	19	4.5
13830	482638.1	2738516	232	27	5.2
13840	482630.2	2738510	232	41	58.5
13850	482622.2	2738504	233	3	44.3
13860	482614.2	2738498	233	32	22.6
13870	482606.1	2738492	234	7	53.4
13880	482598	2738486	234	50	16.8
13890	482589.8	2738481	235	39	32.7
13900	482581.5	2738475	236	35	41.1
13910	482573.1	2738470	237	38	42.1
13913.35	482570.3	2738468	238	1	19.7
13920	482564.6	2738464	238	47	4.3
13930	482556	2738459	239	55	49.6
13940	482547.3	2738454	241	4	34.9
13950	482538.5	2738450	242	13	20.2
13960	482529.6	2738445	243	22	5.5
13970	482520.6	2738441	244	30	50.8
13980	482511.5	2738436	245	39	36.1
13990	482502.4	2738432	246	48	21.4
14000	482493.1	2738429	247	57	6.7
14010	482483.8	2738425	249	5	51.9
14020	482474.5	2738421	250	14	37.2
14030	482465	2738418	251	23	22.5
14040	482455.5	2738415	252	32	7.8
14050	482445.9	2738412	253	40	53.1
14060	482436.3	2738409	254	49	38.4
14070	482426.6	2738407	255	58	23.7
14080	482416.9	2738405	257	7	9
14088.5	482408.6	2738403	258	5	34.7
14090	482407.1	2738402	258	15	49.7
14100	482397.3	2738400	259	20	6.7
14110	482387.5	2738399	260	17	31.3
14120	482377.6	2738397	261	8	3.3
14130	482367.7	2738396	261	51	42.8
14140	482357.8	2738394	262	28	29.7

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
14150	482347.9	2738393	262	58	24.1
14160	482338	2738392	263	21	26
14170	482328	2738391	263	37	35.4
14180	482318.1	2738390	263	46	52.2
14188.5	482309.7	2738389	263	49	21.2
14190	482308.2	2738389	263	49	21.2
14200	482298.2	2738387	263	49	21.2
14210	482288.3	2738386	263	49	21.2
14220	482278.3	2738385	263	49	21.2
14230	482268.4	2738384	263	49	21.2
14240	482258.5	2738383	263	49	21.2
14250	482248.5	2738382	263	49	21.2
14260	482238.6	2738381	263	49	21.2
14270	482228.6	2738380	263	49	21.2
14280	482218.7	2738379	263	49	21.2
14290	482208.7	2738378	263	49	21.2
14300	482198.8	2738377	263	49	21.2
14310	482188.9	2738376	263	49	21.2
14320	482178.9	2738375	263	49	21.2
14330	482169	2738373	263	49	21.2
14340	482159	2738372	263	49	21.2
14350	482149.1	2738371	263	49	21.2
14360	482139.1	2738370	263	49	21.2
14370	482129.2	2738369	263	49	21.2
14380	482119.3	2738368	263	49	21.2
14390	482109.3	2738367	263	49	21.2
14400	482099.4	2738366	263	49	21.2
14410	482089.4	2738365	263	49	21.2
14420	482079.5	2738364	263	49	21.2
14430	482069.6	2738363	263	49	21.2
14440	482059.6	2738362	263	49	21.2
14450	482049.7	2738361	263	49	21.2
14460	482039.7	2738359	263	49	21.2
14470	482029.8	2738358	263	49	21.2
14480	482019.8	2738357	263	49	21.2
14490	482009.9	2738356	263	49	21.2
14500	482000	2738355	263	49	21.2
14510	481990	2738354	263	49	21.2
14520	481980.1	2738353	263	49	21.2
14530	481970.1	2738352	263	49	21.2
14540	481960.2	2738351	263	49	21.2
14550	481950.3	2738350	263	49	21.2
14560	481940.3	2738349	263	49	21.2
14570	481930.4	2738348	263	49	21.2

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
14580	481920.4	2738347	263	49	21.2
14590	481910.5	2738345	263	49	21.2
14600	481900.5	2738344	263	49	21.2
14610	481890.6	2738343	263	49	21.2
14620	481880.7	2738342	263	49	21.2
14630	481870.7	2738341	263	49	21.2
14640	481860.8	2738340	263	49	21.2
14650	481850.8	2738339	263	49	21.2
14660	481840.9	2738338	263	49	21.2
14670	481830.9	2738337	263	49	21.2
14680	481821	2738336	263	49	21.2
14690	481811.1	2738335	263	49	21.2
14700	481801.1	2738334	263	49	21.2
14710	481791.2	2738333	263	49	21.2
14720	481781.2	2738331	263	49	21.2
14730	481771.3	2738330	263	49	21.2
14740	481761.4	2738329	263	49	21.2
14750	481751.4	2738328	263	49	21.2
14760	481741.5	2738327	263	49	21.2
14766.46	481735	2738326	263	49	21.2
14770	481731.5	2738326	263	48	57.7
14780	481721.6	2738325	263	43	37.5
14790	481711.7	2738324	263	32	2.2
14800	481701.7	2738323	263	14	11.9
14810	481691.8	2738322	262	50	6.6
14820	481681.9	2738320	262	19	46.2
14830	481672	2738319	261	43	10.8
14840	481662.1	2738317	261	0	20.4
14850	481652.2	2738316	260	11	15
14860	481642.4	2738314	259	15	54.6
14866.46	481636	2738313	258	36	49.8
14870	481632.6	2738312	258	14	42.6
14880	481622.8	2738310	257	12	12.3
14890	481613.1	2738308	256	9	42
14900	481603.4	2738305	255	7	11.8
14910	481593.7	2738302	254	4	41.5
14920	481584.1	2738300	253	2	11.2
14930	481574.6	2738297	251	59	41
14940	481565.1	2738293	250	57	10.7
14950	481555.7	2738290	249	54	40.4
14960	481546.3	2738287	248	52	10.1
14970	481537.1	2738283	247	49	39.9
14980	481527.8	2738279	246	47	9.6
14990	481518.7	2738275	245	44	39.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
15000	481509.6	2738271	244	42	9.1
15010	481500.6	2738266	243	39	38.8
15020	481491.7	2738262	242	37	8.5
15030	481482.8	2738257	241	34	38.3
15040	481474.1	2738252	240	32	8
15050	481465.4	2738247	239	29	37.7
15060	481456.9	2738242	238	27	7.5
15070	481448.4	2738237	237	24	37.2
15080	481440	2738231	236	22	6.9
15090	481431.7	2738226	235	19	36.6
15100	481423.6	2738220	234	17	6.4
15110	481415.5	2738214	233	14	36.1
15120	481407.5	2738208	232	12	5.8
15130	481399.7	2738202	231	9	35.6
15140	481392	2738196	230	7	5.3
15150	481384.3	2738189	229	4	35
15160	481376.8	2738182	228	2	4.8
15170	481369.5	2738176	226	59	34.5
15180	481362.2	2738169	225	57	4.2
15190	481355.1	2738162	224	54	34
15200	481348.1	2738155	223	52	3.7
15210	481341.2	2738147	222	49	33.4
15220	481334.5	2738140	221	47	3.1
15230	481327.9	2738133	220	44	32.9
15240	481321.5	2738125	219	42	2.6
15250	481315.1	2738117	218	39	32.3
15260	481309	2738109	217	37	2.1
15270	481302.9	2738101	216	34	31.8
15280	481297	2738093	215	32	1.5
15290	481291.3	2738085	214	29	31.3
15300	481285.7	2738077	213	27	1
15310	481280.3	2738068	212	24	30.7
15320	481275	2738060	211	22	0.5
15330	481269.9	2738051	210	19	30.2
15340	481264.9	2738043	209	16	59.9
15350	481260.1	2738034	208	14	29.6
15360	481255.4	2738025	207	11	59.4
15370	481250.9	2738016	206	9	29.1
15380	481246.6	2738007	205	6	58.8
15390	481242.5	2737998	204	4	28.6
15400	481238.5	2737989	203	1	58.3
15410	481234.6	2737979	201	59	28
15420	481231	2737970	200	56	57.8
15430	481227.5	2737961	199	54	27.5

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
15440	481224.2	2737951	198	51	57.2
15450	481221	2737942	197	49	27
15460	481218	2737932	196	46	56.7
15470	481215.2	2737923	195	44	26.4
15480	481212.6	2737913	194	41	56.1
15490	481210.2	2737903	193	39	25.9
15500	481207.9	2737894	192	36	55.6
15510	481205.8	2737884	191	34	25.3
15520	481203.9	2737874	190	31	55.1
15530	481202.1	2737864	189	29	24.8
15540	481200.6	2737854	188	26	54.5
15550	481199.2	2737844	187	24	24.3
15560	481198	2737835	186	21	54
15570	481197	2737825	185	19	23.7
15580	481196.2	2737815	184	16	53.5
15589.57	481195.5	2737805	183	17	3.6
15590	481195.5	2737805	183	14	23.5
15600	481195	2737795	182	15	16.8
15610	481194.7	2737785	181	22	25.1
15620	481194.5	2737775	180	35	48.5
15630	481194.5	2737765	179	55	26.8
15640	481194.6	2737755	179	21	20.2
15650	481194.7	2737745	178	53	28.7
15660	481194.9	2737735	178	31	52.1
15670	481195.2	2737725	178	16	30.6
15680	481195.5	2737715	178	7	24.1
15689.57	481195.9	2737705	178	4	32.3
15690	481195.9	2737705	178	4	32.3
15700	481196.2	2737695	178	4	32.3
15710	481196.5	2737685	178	4	32.3
15720	481196.9	2737675	178	4	32.3
15730	481197.2	2737665	178	4	32.3
15740	481197.5	2737655	178	4	32.3
15750	481197.9	2737645	178	4	32.3
15760	481198.2	2737635	178	4	32.3
15770	481198.6	2737625	178	4	32.3
15780	481198.9	2737615	178	4	32.3
15790	481199.2	2737605	178	4	32.3
15800	481199.6	2737595	178	4	32.3
15810	481199.9	2737585	178	4	32.3
15820	481200.2	2737575	178	4	32.3
15830	481200.6	2737565	178	4	32.3
15840	481200.9	2737555	178	4	32.3
15850	481201.2	2737545	178	4	32.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
15860	481201.6	2737535	178	4	32.3
15870	481201.9	2737525	178	4	32.3
15880	481202.2	2737515	178	4	32.3
15890	481202.6	2737505	178	4	32.3
15900	481202.9	2737495	178	4	32.3
15910	481203.3	2737485	178	4	32.3
15920	481203.6	2737475	178	4	32.3
15930	481203.9	2737465	178	4	32.3
15940	481204.3	2737455	178	4	32.3
15950	481204.6	2737445	178	4	32.3
15960	481204.9	2737435	178	4	32.3
15970	481205.3	2737425	178	4	32.3
15980	481205.6	2737415	178	4	32.3
15990	481205.9	2737405	178	4	32.3
16000	481206.3	2737395	178	4	32.3
16010	481206.6	2737385	178	4	32.3
16020	481206.9	2737375	178	4	32.3
16030	481207.3	2737365	178	4	32.3
16040	481207.6	2737355	178	4	32.3
16050	481208	2737345	178	4	32.3
16060	481208.3	2737335	178	4	32.3
16070	481208.6	2737325	178	4	32.3
16080	481209	2737315	178	4	32.3
16090	481209.3	2737305	178	4	32.3
16100	481209.6	2737295	178	4	32.3
16110	481210	2737285	178	4	32.3
16120	481210.3	2737275	178	4	32.3
16130	481210.6	2737265	178	4	32.3
16140	481211	2737255	178	4	32.3
16150	481211.3	2737245	178	4	32.3
16160	481211.6	2737235	178	4	32.3
16170	481212	2737225	178	4	32.3
16180	481212.3	2737215	178	4	32.3
16190	481212.7	2737205	178	4	32.3
16200	481213	2737195	178	4	32.3
16210	481213.3	2737185	178	4	32.3
16220	481213.7	2737175	178	4	32.3
16230	481214	2737165	178	4	32.3
16240	481214.3	2737155	178	4	32.3
16250	481214.7	2737145	178	4	32.3
16260	481215	2737135	178	4	32.3
16270	481215.3	2737125	178	4	32.3
16280	481215.7	2737115	178	4	32.3
16290	481216	2737105	178	4	32.3

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
16300	481216.3	2737095	178	4	32.3
16310	481216.7	2737085	178	4	32.3
16320	481217	2737075	178	4	32.3
16330	481217.4	2737065	178	4	32.3
16340	481217.7	2737055	178	4	32.3
16350	481218	2737045	178	4	32.3
16360	481218.4	2737035	178	4	32.3
16370	481218.7	2737025	178	4	32.3
16380	481219	2737015	178	4	32.3
16390	481219.4	2737005	178	4	32.3
16400	481219.7	2736995	178	4	32.3
16410	481220	2736985	178	4	32.3
16420	481220.4	2736975	178	4	32.3
16430	481220.7	2736965	178	4	32.3
16440	481221	2736955	178	4	32.3
16450	481221.4	2736945	178	4	32.3
16460	481221.7	2736935	178	4	32.3
16470	481222.1	2736925	178	4	32.3
16480	481222.4	2736915	178	4	32.3
16490	481222.7	2736905	178	4	32.3
16500	481223.1	2736895	178	4	32.3
16510	481223.4	2736885	178	4	32.3
16520	481223.7	2736875	178	4	32.3
16529.4	481224.1	2736866	178	4	32.3
16530	481224.1	2736865	178	4	31.8
16540	481224.4	2736855	178	2	14.4
16550	481224.8	2736845	177	55	51.4
16560	481225.1	2736835	177	45	22.8
16570	481225.5	2736825	177	30	48.7
16580	481226	2736815	177	12	9
16590	481226.5	2736805	176	49	23.7
16599.4	481227.1	2736796	176	24	16.2
16600	481227.1	2736795	176	22	33.4
16610	481227.8	2736785	175	53	54.5
16620	481228.6	2736775	175	25	15.6
16630	481229.4	2736765	174	56	36.8
16640	481230.3	2736755	174	27	57.9
16650	481231.3	2736745	173	59	19
16660	481232.4	2736735	173	30	40.2
16670	481233.6	2736726	173	2	1.3
16680	481234.8	2736716	172	33	22.4
16690	481236.2	2736706	172	4	43.5
16700	481237.6	2736696	171	36	4.7
16710	481239.1	2736686	171	7	25.8

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
16720	481240.7	2736676	170	38	46.9
16730	481242.3	2736666	170	10	8
16740	481244.1	2736656	169	41	29.2
16750	481245.9	2736646	169	12	50.3
16760	481247.8	2736637	168	44	11.4
16770	481249.8	2736627	168	15	32.5
16780	481251.9	2736617	167	46	53.7
16790	481254.1	2736607	167	18	14.8
16800	481256.3	2736598	166	49	35.9
16810	481258.6	2736588	166	20	57
16820	481261	2736578	165	52	18.2
16830	481263.5	2736568	165	23	39.3
16840	481266.1	2736559	164	55	0.4
16850	481268.7	2736549	164	26	21.6
16860	481271.4	2736540	163	57	42.7
16870	481274.2	2736530	163	29	3.8
16880	481277.1	2736520	163	0	24.9
16890	481280.1	2736511	162	31	46.1
16900	481283.1	2736501	162	3	7.2
16910	481286.2	2736492	161	34	28.3
16920	481289.4	2736482	161	5	49.4
16930	481292.7	2736473	160	37	10.6
16940	481296.1	2736463	160	8	31.7
16950	481299.5	2736454	159	39	52.8
16960	481303	2736445	159	11	13.9
16970	481306.6	2736435	158	42	35.1
16980	481310.3	2736426	158	13	56.2
16990	481314	2736417	157	45	17.3
17000	481317.9	2736408	157	16	38.5
17010	481321.8	2736398	156	47	59.6
17020	481325.7	2736389	156	19	20.7
17030	481329.8	2736380	155	50	41.8
17040	481333.9	2736371	155	22	3
17050	481338.1	2736362	154	53	24.1
17060	481342.4	2736353	154	24	45.2
17070	481346.8	2736344	153	56	6.3
17080	481351.2	2736335	153	27	27.5
17090	481355.7	2736326	152	58	48.6
17100	481360.3	2736317	152	30	9.7
17110	481364.9	2736308	152	1	30.8
17120	481369.7	2736299	151	32	52
17130	481374.5	2736291	151	4	13.1
17140	481379.3	2736282	150	35	34.2
17150	481384.3	2736273	150	6	55.4

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
17160	481389.3	2736264	149	38	16.5
17170	481394.4	2736256	149	9	37.6
17180	481399.6	2736247	148	40	58.7
17190	481404.8	2736239	148	12	19.9
17200	481410.1	2736230	147	43	41
17210	481415.5	2736222	147	15	2.1
17220	481420.9	2736214	146	46	23.2
17230	481426.4	2736205	146	17	44.4
17240	481432	2736197	145	49	5.5
17250	481437.7	2736189	145	20	26.6
17260	481443.4	2736180	144	51	47.7
17270	481449.2	2736172	144	23	8.9
17280	481455	2736164	143	54	30
17290	481461	2736156	143	25	51.1
17300	481466.9	2736148	142	57	12.3
17310	481473	2736140	142	28	33.4
17320	481479.1	2736132	141	59	54.5
17330	481485.3	2736124	141	31	15.6
17340	481491.6	2736117	141	2	36.8
17350	481497.9	2736109	140	33	57.9
17360	481504.3	2736101	140	5	19
17370	481510.7	2736093	139	36	40.1
17380	481517.2	2736086	139	8	1.3
17390	481523.8	2736078	138	39	22.4
17400	481530.4	2736071	138	10	43.5
17410	481537.1	2736063	137	42	4.6
17420	481543.9	2736056	137	13	25.8
17430	481550.7	2736049	136	44	46.9
17440	481557.6	2736042	136	16	8
17450	481564.6	2736034	135	47	29.2
17460	481571.6	2736027	135	18	50.3
17470	481578.6	2736020	134	50	11.4
17480	481585.7	2736013	134	21	32.5
17490	481592.9	2736006	133	52	53.7
17500	481600.2	2735999	133	24	14.8
17510	481607.4	2735992	132	55	35.9
17520	481614.8	2735986	132	26	57
17530	481622.2	2735979	131	58	18.2
17540	481629.7	2735972	131	29	39.3
17550	481637.2	2735966	131	1	0.4
17560	481644.8	2735959	130	32	21.5
17570	481652.4	2735953	130	3	42.7
17580	481660.1	2735946	129	35	3.8
17590	481667.8	2735940	129	6	24.9

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
17600	481675.6	2735934	128	37	46.1
17610	481683.4	2735927	128	9	7.2
17620	481691.3	2735921	127	40	28.3
17630	481699.3	2735915	127	11	49.4
17640	481707.2	2735909	126	43	10.6
17650	481715.3	2735903	126	14	31.7
17660	481723.4	2735897	125	45	52.8
17670	481731.5	2735892	125	17	13.9
17680	481739.7	2735886	124	48	35.1
17690	481747.9	2735880	124	19	56.2
17700	481756.2	2735875	123	51	17.3
17710	481764.5	2735869	123	22	38.4
17720	481772.9	2735864	122	53	59.6
17725.7	481777.7	2735860	122	37	40.6
17730	481781.3	2735858	122	25	43.4
17740	481789.8	2735853	122	0	53
17750	481798.3	2735848	121	40	8.2
17760	481806.8	2735842	121	23	28.9
17770	481815.4	2735837	121	10	55.2
17780	481823.9	2735832	121	2	27
17790	481832.5	2735827	120	58	4.3
17795.7	481837.4	2735824	120	57	24.5
17800	481841.1	2735822	120	57	24.5
17810	481849.6	2735816	120	57	24.5
17820	481858.2	2735811	120	57	24.5
17830	481866.8	2735806	120	57	24.5
17840	481875.4	2735801	120	57	24.5
17850	481883.9	2735796	120	57	24.5
17860	481892.5	2735791	120	57	24.5
17870	481901.1	2735786	120	57	24.5
17880	481909.7	2735780	120	57	24.5
17890	481918.2	2735775	120	57	24.5
17900	481926.8	2735770	120	57	24.5
17910	481935.4	2735765	120	57	24.5
17920	481944	2735760	120	57	24.5
17930	481952.5	2735755	120	57	24.5
17940	481961.1	2735750	120	57	24.5
17950	481969.7	2735744	120	57	24.5
17960	481978.3	2735739	120	57	24.5
17970	481986.9	2735734	120	57	24.5
17980	481995.4	2735729	120	57	24.5
17990	482004	2735724	120	57	24.5
18000	482012.6	2735719	120	57	24.5
18010	482021.2	2735714	120	57	24.5

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
18020	482029.7	2735708	120	57	24.5
18030	482038.3	2735703	120	57	24.5
18040	482046.9	2735698	120	57	24.5
18050	482055.5	2735693	120	57	24.5
18060	482064	2735688	120	57	24.5
18070	482072.6	2735683	120	57	24.5
18080	482081.2	2735678	120	57	24.5
18090	482089.8	2735672	120	57	24.5
18100	482098.3	2735667	120	57	24.5
18110	482106.9	2735662	120	57	24.5
18120	482115.5	2735657	120	57	24.5
18130	482124.1	2735652	120	57	24.5
18140	482132.6	2735647	120	57	24.5
18150	482141.2	2735642	120	57	24.5
18160	482149.8	2735636	120	57	24.5
18170	482158.4	2735631	120	57	24.5
18180	482166.9	2735626	120	57	24.5
18190	482175.5	2735621	120	57	24.5
18200	482184.1	2735616	120	57	24.5
18205.51	482188.8	2735613	120	57	24.5
18210	482192.7	2735611	120	57	50.5
18220	482201.2	2735606	121	1	55.1
18230	482209.8	2735600	121	10	17.5
18240	482218.3	2735595	121	22	57.8
18250	482226.9	2735590	121	39	55.9
18260	482235.4	2735585	122	1	11.9
18270	482243.8	2735579	122	26	45.7
18280	482252.2	2735574	122	56	37.3
18290	482260.6	2735569	123	30	46.7
18300	482268.9	2735563	124	9	14
18305.51	482273.5	2735560	124	32	16.1
18310	482277.2	2735557	124	51	33.1
18320	482285.3	2735552	125	34	31.4
18330	482293.4	2735546	126	17	29.7
18340	482301.4	2735540	127	0	28
18350	482309.4	2735534	127	43	26.3
18360	482317.3	2735527	128	26	24.7
18370	482325.1	2735521	129	9	23
18380	482332.8	2735515	129	52	21.3
18390	482340.4	2735508	130	35	19.6
18400	482348	2735502	131	18	17.9
18410	482355.4	2735495	132	1	16.2
18420	482362.8	2735488	132	44	14.5
18430	482370.1	2735482	133	27	12.8

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
18440	482377.3	2735475	134	10	11.1
18450	482384.5	2735468	134	53	9.4
18460	482391.5	2735461	135	36	7.8
18470	482398.5	2735453	136	19	6.1
18480	482405.3	2735446	137	2	4.4
18490	482412.1	2735439	137	45	2.7
18500	482418.8	2735431	138	28	1
18510	482425.4	2735424	139	10	59.3
18520	482431.8	2735416	139	53	57.6
18530	482438.2	2735408	140	36	55.9
18540	482444.5	2735401	141	19	54.2
18550	482450.7	2735393	142	2	52.5
18560	482456.8	2735385	142	45	50.9
18570	482462.8	2735377	143	28	49.2
18580	482468.7	2735369	144	11	47.5
18590	482474.5	2735361	144	54	45.8
18600	482480.2	2735352	145	37	44.1
18610	482485.8	2735344	146	20	42.4
18620	482491.3	2735336	147	3	40.7
18630	482496.7	2735327	147	46	39
18640	482502	2735319	148	29	37.3
18650	482507.1	2735310	149	12	35.6
18660	482512.2	2735302	149	55	34
18670	482517.2	2735293	150	38	32.3
18680	482522	2735284	151	21	30.6
18690	482526.8	2735275	152	4	28.9
18700	482531.4	2735267	152	47	27.2
18710	482535.9	2735258	153	30	25.5
18720	482540.3	2735249	154	13	23.8
18730	482544.6	2735240	154	56	22.1
18740	482548.8	2735231	155	39	20.4
18750	482552.8	2735221	156	22	18.7
18760	482556.8	2735212	157	5	17.1
18770	482560.6	2735203	157	48	15.4
18780	482564.3	2735194	158	31	13.7
18790	482568	2735184	159	14	12
18800	482571.4	2735175	159	57	10.3
18810	482574.8	2735166	160	40	8.6
18820	482578.1	2735156	161	23	6.9
18830	482581.2	2735147	162	6	5.2
18840	482584.2	2735137	162	49	3.5
18850	482587.1	2735128	163	32	1.8
18860	482589.9	2735118	164	15	0.2
18870	482592.5	2735108	164	57	58.5

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
18880	482595.1	2735099	165	40	56.8
18890	482597.5	2735089	166	23	55.1
18900	482599.8	2735079	167	6	53.4
18910	482601.9	2735069	167	49	51.7
18920	482604	2735060	168	32	50
18930	482605.9	2735050	169	15	48.3
18938.79	482607.5	2735041	169	53	34.1
18940	482607.7	2735040	169	58	44.7
18950	482609.4	2735030	170	39	2.9
18960	482611	2735020	171	15	3.2
18970	482612.4	2735010	171	46	45.7
18980	482613.8	2735000	172	14	10.3
18990	482615.1	2734991	172	37	17.1
19000	482616.4	2734981	172	56	6.1
19010	482617.6	2734971	173	10	37.3
19020	482618.8	2734961	173	20	50.6
19030	482619.9	2734951	173	26	46.1
19038.79	482620.9	2734942	173	28	25.7
19040	482621.1	2734941	173	28	25.7
19050	482622.2	2734931	173	28	25.7
19060	482623.3	2734921	173	28	25.7
19070	482624.5	2734911	173	28	25.7
19080	482625.6	2734901	173	28	25.7
19090	482626.7	2734891	173	28	25.7
19100	482627.9	2734881	173	28	25.7
19110	482629	2734871	173	28	25.7
19120	482630.2	2734861	173	28	25.7
19130	482631.3	2734852	173	28	25.7
19140	482632.4	2734842	173	28	25.7
19150	482633.6	2734832	173	28	25.7
19160	482634.7	2734822	173	28	25.7
19170	482635.8	2734812	173	28	25.7
19180	482637	2734802	173	28	25.7
19190	482638.1	2734792	173	28	25.7
19200	482639.2	2734782	173	28	25.7
19210	482640.4	2734772	173	28	25.7
19220	482641.5	2734762	173	28	25.7
19230	482642.7	2734752	173	28	25.7
19240	482643.8	2734742	173	28	25.7
19250	482644.9	2734732	173	28	25.7
19260	482646.1	2734722	173	28	25.7
19270	482647.2	2734712	173	28	25.7
19280	482648.3	2734702	173	28	25.7
19290	482649.5	2734693	173	28	25.7

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
19300	482650.6	2734683	173	28	25.7
19310	482651.7	2734673	173	28	25.7
19320	482652.9	2734663	173	28	25.7
19330	482654	2734653	173	28	25.7
19340	482655.2	2734643	173	28	25.7
19350	482656.3	2734633	173	28	25.7
19360	482657.4	2734623	173	28	25.7
19370	482658.6	2734613	173	28	25.7
19380	482659.7	2734603	173	28	25.7
19390	482660.8	2734593	173	28	25.7
19400	482662	2734583	173	28	25.7
19401.62	482662.2	2734582	173	28	25.7
19401.62	482662.2	2734582	173	28	25.7
19410	482663.1	2734573	173	16	54.1
19420	482664.3	2734563	173	3	9
19430	482665.5	2734553	172	49	24
19440	482666.8	2734544	172	35	38.9
19450	482668.1	2734534	172	21	53.8
19460	482669.5	2734524	172	8	8.8
19470	482670.9	2734514	171	54	23.7
19480	482672.3	2734504	171	40	38.7
19490	482673.8	2734494	171	26	53.6
19500	482675.3	2734484	171	13	8.5
19510	482676.8	2734474	170	59	23.5
19520	482678.4	2734464	170	45	38.4
19530	482680	2734455	170	31	53.4
19540	482681.7	2734445	170	18	8.3
19550	482683.4	2734435	170	4	23.2
19560	482685.1	2734425	169	50	38.2
19570	482686.9	2734415	169	36	53.1
19580	482688.7	2734405	169	23	8.1
19587.79	482690.2	2734398	169	12	25.4
19587.79	482690.2	2734398	169	12	25.4
19590	482690.6	2734395	169	12	25.4
19600	482692.5	2734386	169	12	25.4
19610	482694.3	2734376	169	12	25.4
19620	482696.2	2734366	169	12	25.4
19630	482698.1	2734356	169	12	25.4
19640	482700	2734346	169	12	25.4
19650	482701.8	2734337	169	12	25.4
19660	482703.7	2734327	169	12	25.4
19670	482705.6	2734317	169	12	25.4
19680	482707.5	2734307	169	12	25.4
19690	482709.3	2734297	169	12	25.4

Chainage	Coordinate		Bearing		
	Easting	Northing	Deg.	Min	Sec
19700	482711.2	2734287	169	12	25.4
19710	482713.1	2734278	169	12	25.4
19720	482714.9	2734268	169	12	25.4
19730	482716.8	2734258	169	12	25.4
19740	482718.7	2734248	169	12	25.4
19750	482720.6	2734238	169	12	25.4
19760	482722.4	2734228	169	12	25.4
19770	482724.3	2734219	169	12	25.4
19780	482726.2	2734209	169	12	25.4
19790	482728.1	2734199	169	12	25.4
19800	482729.9	2734189	169	12	25.4
19810	482731.8	2734179	169	12	25.4
19820	482733.7	2734170	169	12	25.4
19830	482735.5	2734160	169	12	25.4
19840	482737.4	2734150	169	12	25.4
19850	482739.3	2734140	169	12	25.4
19860	482741.2	2734130	169	12	25.4
19870	482743	2734120	169	12	25.4
19880	482744.9	2734111	169	12	25.4
19890	482746.8	2734101	169	12	25.4
19900	482748.7	2734091	169	12	25.4
19910	482750.5	2734081	169	12	25.4
19920	482752.4	2734071	169	12	25.4
19930	482754.3	2734061	169	12	25.4
19940	482756.1	2734052	169	12	25.4
19950	482758	2734042	169	12	25.4
19960	482759.9	2734032	169	12	25.4
19970	482761.8	2734022	169	12	25.4
19980	482763.6	2734012	169	12	25.4
19990	482765.5	2734003	169	12	25.4
20000	482767.4	2733993	169	12	25.4

***Schedule-B***



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

### Schedule - B (See Clause 2.1)

#### Development of the Project Highway

##### 1 Development of the Project Highway

Development of the Project Highway shall include design and construction of the Project Highway as described in this Schedule-B and in Schedule-C.

##### 2 4-Laning with Paved Shoulder

Four Laning shall include construction of the Four Lane Project highway as described in Annex-I of this Schedule-B and in Schedule C.

##### 3 Specifications and Standards

The Project Highway shall be designed and constructed in conformity with the Specifications and Standards specified in Annex-I of Schedule-D.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000)on Silchar - Vairengte - Sairang road in the State of Assamunder Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**Annex-I**

*(Schedule-B)*

**Description of (4-Laning)**

Construction of Four-lane of Silchar-Dhanehari Section (Package 1) from Existing CH. 263.800of NH 37 to Existing Ch. 12.920 Km of NH 306(Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.

The coordinates of start and end point of project road are given below.

**Co-ordinates of Start and End of Project Stretch**

Location		UTM Co-Ordinate	
Description	Design Chainage	Easting (m)	Northing (m)
Start of Project Road	0+000	482439.929	2746853.655
End of Project Road	20+000	482767.4	2733993

**1. Widening of the Existing Highway**

(i) The Project Highway shall follow the existing alignment unless otherwise specified by the Authority and shown in the alignment plans specified in Annex III of Schedule-A. Geometric deficiencies, if any, in the existing horizontal and vertical profiles shall be corrected as per the prescribed standards for plain/rolling terrain to the extent land is available.

**(ii) Width of carriageway**

(a) Four-Laning with paved shall be undertaken. The paved carriageway shall be in accordance with the typical cross-sections' drawings in the manual IRC SP 84 -2019. The typical drawings attached in schedules.

Except as otherwise provided in this agreement, width of the paved carriageway and cross-sectional features shall conform to paragraph 1(ii) (a)

Provided that in the built-up areas [refer to paragraphs 2.1 (ii) (a) of the Manual and provide necessary details]: the width of the carriageway shall be as specified in the following table:

Sl. No.	Built-up stretch (Township)	Location (km to km)	Width (m)	Typical cross section (Ref. to Manual)
NIL				

(b) Except as otherwise provided in this Agreement, the width of the paved carriageway and cross-sectional features shall conform to paragraph 1(i) above

(c) The entire cross-sectional elements shall be accommodated in the proposed ROW. If



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

required, suitable retaining structures shall be provided to accommodate the highway cross section within the proposed ROW and the same shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13 of the EPC Contract Agreement.

**2. Geometric Design and General Features**

**i. General**

Geometric design and general features of the Project Highway shall be in accordance with Section 2 of the Manual (IRC: SP: 84-2019) for Plain terrain and as specified in Annex-I of Schedule D.

**ii. Design Speed**

The contractor shall adopt ruling design speed for designing the project highway in conformity with the provisions of the manual & as specified in Plan and Profile drawings of Annexure-III of Schedule-A and in Annex-I of Schedule D.

**iii. Improvements of the existing road geometrics**

Improvement of the existing road geometrics shall be carryout to the extent possible within the given right of way and proper road signs and safety measures shall be provided. It shall follow the alignment plans shown in the Annex-III of Schedule-A, unless otherwise specified by the Authority.

**a) The bypass has been provided in following location.**

Sl. No	Location	Existing Chainage (Km)		Existing Length (m)	Design Chainage (Km)		Design Length (m)
		Start	End		Start	End	
1	Silchar Bypass	20+000	11+170	8830	6+300	13+660	7360
2	Sonabarighat Bypass	7+950	12+500	4550	13+660	19+010	5350
	<b>Total</b>			<b>13380</b>			<b>12710</b>

**b) Realignments and Geometric Improvement locations**

Sl. No	Exist. Chainage		Exist. Length (m)	Design Chainage		Type of Deficiency	Design Length (m)
	Start	End		Start	End		
1	259+950 (NH-37)	259+240 (NH-37)	710	3+800	4+560		760
2	257+765 (NH-37)	257+415 (NH-37)	315	6+070	6+300		230
	<b>Total</b>		<b>1015</b>				<b>990</b>

Apart from above, geometric deficiencies, if any, in the existing horizontal and



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

vertical profiles shall be corrected as per the prescribed standards for plain/rolling terrain to the extent land is available.

**iv. Right of Way**

Details of the Right of Way are given in Annex II of Schedule A.

**v. Type of shoulders**

(a) In built-up section, footpaths are to be provided in the following stretches and as specified in Schedule-D.

**-NIL-**

(b) In open country, paved shoulders of 2.5 m width shall be provided for main highway and balance 1.50m width earthen shoulders shall be covered with 150 mm thick compacted layer of granular material for main highway, slip road, loops and ramps. The shoulders shall be in accordance with the Typical cross sections given in Appendix B-I and as specified in Schedule-D.

(c) Design and specifications of shoulders shall conform to the requirements of Section 5 as specified in paragraphs 5.10 and 5.11 of the Manual. The Earthen Shoulder shall be compacted with 150mm thick granular sub-base quality material at the top duly stabilized with cement/suitable admixtures to prevent erosion.

**vi. Lateral and Vertical Clearances at Underpasses**

(a) Lateral and vertical clearances at Underpasses and provision of guardrails/crash barriers shall be as per the paragraph 2.10 of IRC SP 84-2019.

(b) Lateral clearance: The size of the opening at the Underpasses shall be as follows

S. No.	Chainage (km)	Span/ opening (m)	Vertical Clearance (m)	Remarks
1	0+818	1 x 30 + 1 x 40 + 1 x 30m	5.5	Flyover
2	4+132	1 x 7.0m	4.0	SVUP
3	4+833	1 x 12m	4.0	LVUP
4	6+302	1 x 20m	5.5	VUP
5	12+119	1 x 20m	5.5	VUP
6	13+667	1 x 20m	5.5	VUP
7	14+992	1 x 30m	5.5	Flyover
8	17+135	1 x 7.0m	4.0	SVUP
9	18+662	1 x 30m	5.5	Flyover



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

\*Note- Any requirement of Ground Improvement at the locations of proposed Retaining Wall / Toe Wall/ Reinforced Earth Wall/ High Embankment shall not be treated as COS and will be incidental to work.

**vii. Lateral and Vertical Clearances at overpasses**

- (a) Lateral and Vertical clearances at over passes shall be as per paragraph 2.11 of the manual and as specified at Schedule-D.
- (b) Lateral clearance: The width of the opening at the overpasses shall be as follows:

Sl. No.	Chainage (km)	Span /opening (m)	Vertical Clearance	Remarks
NIL				

**viii. Service roads**

- (a) Service roads / Slip Roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Location of service road (from km to km)		Right Hand side (RHS)/ Left Hand side (LHS)/ Both side	Length (km) of Service Road
1	0+225	1+360	BOTH	2270
2	4+520	6+760	BOTH	4480
3	11+550	12+550	BOTH	2000
4	13+670	15+590	BOTH	3840
5	18+100	20+000	BOTH	3800
			<b>Total Length=</b>	<b>16390</b>

- (b) Connecting Roads shall be constructed at the locations and for the lengths indicated below:

Sl. No.	Chainage (km)		Right Hand side (RHS)/Left Hand side (LHS)/Both side	Length (m)	C/Way Width (m)
	From km	To km			
Nil					

**Note:**

- (i) The above lengths are tentative, and minimum specified, is excluding the tapering length/merging length of acceleration/deceleration lane. The entry and exit shall be constructed as per IRC: SP: 84: 2019.
- (ii) Length of service road and connecting road given in above table excludes length across the Project Highway for proper connectivity of crossroad on



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

either side of Project Highway as given in the alignment plan enclosed at **Annex-III, Schedule-A** which shall be deemed to be included in the scope of work.

- (iii) The length of service road / connecting road shown in above table is minimum and may increase as per actual site conditions and No Change of Scope shall be admissible on this account.
- (iv) In addition to the above, construction of temporary roads of required length and width for the maintenance of traffic during execution shall be deemed to be part the project and will not attract any change of scope.

**ix. Grade Separated Structures**

- (a) Grade separated structures shall be provided as per paragraph 2.13 of the IRC SP 84-2019. The requisite particulars are given below:

Sl. No	Chainage (km)	Length (m)	Number and length of Spans (m)	Remarks if Any
1	0+818	2 x 11.6	1 x 30 + 1 x 40 + 1x 30m	Flyover
2	4+132	2 x 11.6	1 x 7.0	SVUP
3	4+833	2 x 11.6	1 x 12	LVUP
4	6+302	2 x 11.6	1 x 20	VUP
5	12+119	2 x 11.6	1 x 20	VUP
6	13+667	2 x 11.6	1 x 20	VUP
7	14+992	2 x 11.6	1 x 30	Flyover
8	17+135	2 x 11.6	1 x 7.0	SVUP
9	18+662	2 x 11.6	1 x 30	Flyover

\*Note- Any requirement of Ground Improvement at the locations of proposed Retaining Wall / Toe Wall/ Reinforced Earth Wall/ High Embankment shall not be treated as COS and will be incidental to work.

- (b) In the case of grade separated structures, the type of structure and the level of the Project Highway and the crossroads shall be as follows:

Sl. No.	Location (Design Chainage)	Type of Structure Length (m)	Cross road at			Remarks, if any
			Existing level	Raised Level	Lowered Level	
1	0+818	Flyover	*	*	*	
2	4+132	SVUP	*	*	*	
3	4+833	LVUP	*	*	*	
4	6+302	VUP	*	*	*	
5	12+119	VUP	*	*	*	



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

6	13+667	VUP	*	*	*
7	14+992	Flyover	*	*	*
8	17+135	SVUP	*	*	*
9	18+662	Flyover	*	*	*

\*Cross road levels shall be decided in accordance with the manual as per the requirement of main carriageway geometrics and the same shall be finalized in consultation with Authority's Engineer. It is clarified that, any raising or lowering of crossroad levels and development of approaches along crossroad is also covered under scope of this work and same will not attract change of scope.

**x. Cattle and pedestrian underpass /overpass**

Cattle and pedestrian underpass/ overpass shall be constructed as follows:

S. No.	Chainage (km)	Type of Crossing
NIL		

**xi. Typical cross-sections of the Project Highway**

- (a) Types of cross-sections required to be developed in different segments of the project road are indicated in Appendix B-I.
- (b) TCS schedule as given in Appendix B-I shall be treated as an approximate assessment. Actual length of the TCS schedule shall be prepared by the contractor based on detailed investigations and site requirements. Any variation in length of respective TCS specified in Schedule B shall not constitute a change of scope.

**3. Intersections and Grade Separators**

All intersections and grade separators shall be as per Section 3 of the Manual. Existing intersections which are deficient shall be improved to the prescribed standards.

Properly designed intersections shall be developed at the location and of the types and features given below:

**(i) At-grade intersections**

Sl. No.	Existing Chainage	Design Chainage	Type of Junctions (T, Y, +)	Side	Type of Road (SH/ MDR/ ODR/ VR)	Remarks
1	262+950 (NH-37)	0+818	T	LHS	NH-27	Major Junction
2	262+254	1+535	T	LHS	VR	Minor Junction
3	260+984	2+805	T	LHS	VR	Minor Junction
4	260+030	3+750	T	LHS	VR	Minor Junction



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Existing Chainage	Design Chainage	Type of Junctions (T, Y, +)	Side	Type of Road (SH/MDR/ODR/VR)	Remarks
5	258+977	4+835	T	LHS	NH-37	Minor Junction
6	257+974	5+840	T	RHS	VR	Minor Junction
7	257+450	6+302	T	LHS	City Road	Major Junction
8	Silchar Bypass	12+120	Y	BHS	New Dayapur Bagan Road	Major Junction
9	7+950	13+665	T	LHS	NH-37	Major Junction
10	Sonabarighat Bypass	14+992	+	RHS	Niarigram-Kasipur Road	Major Junction
11	-	18+662	+	LHS	NH-306	Major Junction
12	12+430	19+470	T	LHS	VR	Minor Junction
13	12+490	19+530	T	RHS	VR	Minor Junction

**Note:** It is clarified that if any other junction is identified during development of the project highway in addition to those mentioned above shall also be improved with proper drainage facilities as per standards. The length of development along crossroad shall be decided as per site condition in accordance with manual. It shall be covered within the scope of work. The Number, location & type of junction shown in above table are minimum and it may increase as per actual site condition and increase in number will not attract change of Scope on this account.

Junctions shall be improved as per IRC: SP: 84-2019 and MOST type design for intersection on National Highways, 1992.

(ii) **Grade separated intersection with/without ramps.**

Sl. No.	Location	Salient Feature	Minimum Length of Viaduct to be provided	Road to be carried over/ Under the structure
1	0+818	Flyover	1 x 30 + 1 x 40 + 1 x 30	*
2	4+132	SVUP	1 x 7.0	*
3	4+833	LVUP	1 x 12	*
4	6+302	VUP	1 x 20	*



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Location	Salient Feature	Minimum Length of Viaduct to be provided	Road to be carried over/ Under the structure
5	12+119	VUP	1 x 20	*
6	13+667	VUP	1 x 20	*
7	14+992	Flyover	1 x 30	*
8	17+135	SVUP	1 x 7.0	*
9	18+662	Flyover	1 x 30	*

*Note: The layout of these intersections are shown in alignment plans specified in Annex III of Schedule-A. Development of all ramps/slip roads as shown in alignment plans is included in the scope of work and any modification of layout or increase in length of ramps/slip roads will not attract change of Scope.*

*Location of the above structures (Flyover/Grade Separator, VUP, LVUP, SVUP) are indicative and span arrangement is minimum specified. Exact location of these structures shall be decided as per detailed design, in consultation with Authority Engineer and as per site requirement. The actual span arrangements of the structures shall be determined based on detailed investigations by the Contractor in accordance with the Specifications and Standards. Any variations in span arrangements specified in this Schedule-B shall not constitute a Change of Scope.*

**4. Road Embankment and Cut Section**

(i) Widening and improvement of the existing road embankment/cuttings and construction of new road embankment/ cuttings shall conform to the Specifications and Standards given in section 4 of the manual and the specified cross-sectional details. Deficiencies in the plan and profile of the existing road shall be corrected.

**(ii) Raising of the existing road**

The existing road shall be raised at the required locations as per proposed plan and profile or further raised to meet requisite specifications

**(iii) Surplus cut earth**

All of surplus cutting soils shall be transported and be disposed to the Spoil Banks in accordance with Schedule D.

**5. Pavement Design**

i. Pavement design shall be carried out in accordance with Section 5 of the IRC SP 84-2019 and IRC SP: 59-2019.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

### ii. Type of pavement

Flexible pavement shall be provided including Bus bay, Rest Area, Truck Lay Bye and Intersections.

Main carriageway including loops & ramps, raising of existing road, bypasses, realignment, reconstruction, Truck Lay Bys, Rest Areas, Bus Bays, sections are proposed to be constructed with flexible pavement using Geogrid (Biaxial) in between Non-bituminous Base Course and Sub-base course and Service Road, Connecting Road for conventional pavement. However, the design is in the scope of EPC Contractor and alternate design can be proposed which shall conform to the specification and standards. Moreover, this will not qualify for Change of Scope.

### iii. Design requirements

Notwithstanding anything to the contrary contained in this agreement or the manual, the contractor shall design the pavement of main carriageway for design traffic of 40 MSA with a minimum design period of 20 years. CBR value as obtained at site shall be taken for design if less than 8%. Maximum value of CBR to be taken for design shall not exceed 8%.

Bituminous Grade VG 30 or VG 40 shall be used for BC.

#### a) Design Period and strategy

##### A) Main carriageway:

Flexible pavement shall be designed for a minimum design period of 20 years. Stage construction shall not be permitted.

##### B) Service road/Slip Road:

Flexible pavement shall be designed for a minimum design period of 20 years. Stage construction shall not be permitted.

##### C) Strengthening of Existing pavement:

Nil

#### b) Design Traffic

##### A) Main carriageway:

Notwithstanding anything to the contrary contained in this Agreement or the IRC SP 84-2019, the contractor shall design the pavement for design traffic of not less than 40 million standard axles (MSA) for Main carriageway.

##### B) Service Road

As per manual, service road, slip road and connecting road shall be designed for minimum 10 MSA.

##### C) Strengthening of Existing pavement



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000)on Silchar - Vairengte - Sairang road in the State of Assamunder Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Nil

**iv. Reconstruction of stretches**

The Existing flexible pavement shall be dismantled and reconstructed as flexible pavement.

**6. Roadside Drainage**

Drainage system including surface and subsurface drains for the Project Highway shall be constructed in entire length including drains and culverts required along the crossroads at junctions/ interchanges/other locations as per Section 6 of manual and as per TCS schedule provided as Appendix B-I to this schedule.

In the cutting sections, lined/unlined drain shall be provided at the top of cut slope and at every benches provided for drainage system adequacy and effectiveness All measures shall be taken to prevent ingress of countryside runoff entering into road formation width.

Any repair/ reconstruction required for the existing culverts along project highway/along crossroads at junctions shall be carried out. This will not attract any change of scope.

**i) RCC cover drain:**

RCC cover drain shall be provided at following locations.

SI No	LHS			RHS		
	Chainage (m)		Length (m)	Chainage (m)		Length (m)
	From	To		From	To	
1	0+000	3+800	3800	0+000	3+800	3800
2	4+520	6+760	2240	4+520	6+760	2240
3	14+050	14+440	390	14+050	14+440	390
4	19+140	20+000	860	19+140	20+000	860
<b>Total Length=</b>			<b>7290</b>			<b>7290</b>

**Note:** The above locations are minimum. Additional locations if any required as per site condition shall be provided as per manual. It shall not be treated as change in scope of work.

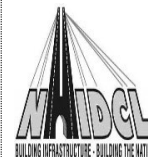
**ii) RCC Cover Drain at Grade Separator:**

RCC Cover Drain shall be provided on hill side at following locations.

SI No	LHS	RHS
-------	-----	-----



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

	Chainage (m)		Length (m)	Chainage (m)		Length (m)
	From	To		From	To	
1	11+550	12+550	1000	11+550	12+550	1000
2	13+670	14+070	400	13+670	14+070	400
3	14+350	15+590	1240	14+350	15+590	1240
4	18+100	19+215	1115	18+100	19+215	1115
	<b>Total Length</b>		<b>3755</b>			<b>3755</b>

**Note:** The above locations are minimum. Additional locations if any required as per site condition shall be provided as per manual. It shall not be treated as change in scope of work.

**iii) Open Un-line Drain:**

Open Un-line drain shall be provided at following locations.

Sl.no.	LHS			RHS		
	Chainage		Length (m)	Chainage		Length (m)
	From	To		From	To	
1	0+000	0+225	225	0+000	0+225	225
2	3+800	4+520	720	3+800	4+520	720
3	6+760	7+400	640	6+760	7+400	640
4	7+400	7+960	560	7+400	7+960	560
5	7+960	9+300	1340	7+960	9+300	1340
6	9+300	9+550	250	9+300	9+550	250
7	9+550	10+450	900	9+550	10+450	900
8	10+450	11+550	1100	10+450	11+550	1100
9	12+550	13+670	1120	12+550	13+670	1120
10	15+590	16+900	1310	15+590	16+900	1310
11	16+900	17+350	450	16+900	17+350	450
12	17+350	18+100	750	17+350	18+100	750
		<b>Total Length</b>	<b>9365</b>			<b>9365</b>

**Note:** The above locations are minimum. Additional locations if any required as per site condition shall be provided as per manual. It shall not be treated as change in scope of work.

**7. Design of Structures**

**i. General**



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

- (a) All bridges, culverts and structures shall be designed and constructed in accordance with section 7 of the IRC SP 84-2019 and shall conform to the cross-sectional features and other details specified in this schedule. Floor protection works shall be as specified in the relevant IRC Codes and Specifications.
- (b) Width of the carriageway of new bridges shall be as follows:  
Refer to paragraph 7.3 (ii) of the IRC SP 84-2019 and specified width of carriageway of all new four lane bridges shall have footpaths on either side. The cross-sectional features shall be as per Fig.7.6 of the IRC SP 84-2019.
- (c) All bridges shall be high-level bridges.
- (d) The structures shall be designed to carry utility services like electric cable, water pipeline, OFC etc. as per the requirement of site.
- (e) Cross-section of the new culverts and bridges at deck level shall conform to the typical cross-sections given in section 7 of the Manual. Extra widening shall be provided for all Culverts/Bridges/Other structures in curved sections as per manual.
- (f) IRC Class Special Vehicle loading shall be taken into account in the design of all structures.

**ii. Culvert**

Overall width of all culverts shall be equal to the roadway width of the approaches. All culverts shall be constructed as per Schedule-D.

**(a) Reconstruction of existing culverts:**

The existing culverts at the following locations shall be re-constructed as new culverts:

S. No.	Existing Chainage (Km)	Design Chainage (Km)	Existing Type	Existing Span	Proposed Type	Proposed Span	Remarks
1	262+750	1+040	Box	1 x 2	BOX	1 x 2 x 2	NH-37
2	262+410	1+372	Box	1 x 2	BOX	1 x 2 x 2	
3	261+350	2+479	Box	1 x 2	BOX	1 x 2 x 2	
4	260+770	3+006	Box	1 x 2	BOX	1 x 2 x 2	
5	259+200	4+643	Box	1 x 2	BOX	1 x 2 X 2	
6	258+690	5+181	Box	1 x 2	BOX	1 x 2 X 2	
7	258+340	5+500	Box	1 x 2	BOX	1 x 2 X 2	
8	257+755	6+140	Box	1 x 2	BOX	1 x 2 X 2	
9	18+685	7+614	Pipe	2 x 0.9	BOX	1 x 3 X 3	Silchar Bypass
10	17+765	8+534	Pipe	2 x 1.2	BOX	1 x 3 X 3	



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000)on Silchar - Vairengte - Sairang road in the State of Assamunder Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

11	17+531	8+768	Pipe	2 x 1.0	BOX	1 x 3 X 3	
12	16+198	10+101	Pipe	2 x 1.0	BOX	1 x 3 X 3	
13	15+135	11+164	Pipe	2 x 1.2	BOX	1 x 3 X 3	
14	14+871	11+429	Pipe	2 x 1.2	BOX	1 x 3 X 3	
15	14+513	11+786	Pipe	2 x 1.2	BOX	1 x 2 X 2	
16	13+988	12+311	Pipe	1 x 1.2	BOX	1 x 2 X 2	
17	12+230	14+072	Pipe	1 x 1.2	BOX	1 x 2 X 2	
18	12+119	14+183	Pipe	1 x 0.9	BOX	1 x 2 X 2	
19	12+400	19+742	Pipe	2x0.9	BOX	1 x 2 X 2	NH-306

**(b) Widening of existing culverts**

All existing culverts which are not to be reconstructed shall be widened to the roadway width of the Project Highway as per the typical cross-section given in section 7.3 (i), (iii) and Fig. 7.1 to Fig. 7.5 of the IRC SP 84-2019. Repairs and strengthening of existing structures where required shall be carried out.

Sl. No	Chainage (km)	Span / Opening	Remarks , if any
Nil			

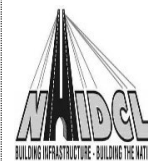
**(c) Additional new culverts**

New culverts shall be constructed for width equal to the roadway width of the Project Highway & as per typical cross-section given in this Schedule-B and alignment plan. The particulars are given in the table below:

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Proposed Type	Proposed Span	Remarks
1	-	0+670	BOX	1 x 2 x 2	
2	-	1+850	BOX	1 x 2 x 2	
3	-	3+430	BOX	1 x 2 x 2	
4	-	3+950	BOX	1 x 3 X 3	
5	-	4+270	BOX	1 x 3 X 3	
6	-	5+820	BOX	1 x 2 X 2	
7	-	6+360	BOX	1 x 2 X 2	
8	-	6+654	BOX	1 x 2 X 2	
9	-	7+244	BOX	1 x 3 X 3	
10	-	8+010	BOX	1 x 3 X 3	



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Proposed Type	Proposed Span	Remarks
11	-	8+270	BOX	1 x 3 X 3	
12	-	12+711	BOX	1 x 3 X 3	
13	-	13+437	BOX	1 x 3 X 3	
14	-	13+631	BOX	1 x 3 X 3	
15	-	14+352	BOX	1 x 2 X 2	
16	-	14+582	BOX	1 x 2 X 2	
17	-	14+862	BOX	1 x 2 X 2	
18	-	15+042	BOX	1 x 2 X 2	
19	-	15+252	BOX	1 x 2 X 2	
20	-	15+872	BOX	1 x 3 X 3	
21	-	16+292	BOX	1 x 3 X 3	
22	-	16+622	BOX	1 x 3 X 3	
23	-	17+032	BOX	1 x 3 X 3	
24	-	17+282	BOX	1 x 3 X 3	
25	-	17+652	BOX	1 x 3 X 3	
26	-	17+952	BOX	1 x 3 X 3	
27	-	18+232	BOX	1 x 2 X 2	
28	-	18+582	BOX	1 x 2 X 2	
29	-	18+842	BOX	1 x 2 X 2	
30	-	19+142	BOX	1 x 2 X 2	
31	-	19+422	BOX	1 x 2 X 2	

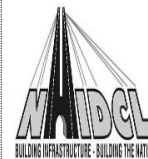
**(d) Additional Culverts at Junction and Crossroads**

The contractor shall construct the culverts at cross roads and junctions as per the list below:

Sl. No.	Chainage (km)	Proposed Type	Proposed Span	Remarks
1	1+500	Box Culvert	1x2	Cross Road
2	3+800	Box Culvert	1x2	Cross Road



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Chainage (km)	Proposed Type	Proposed Span	Remarks
3	4+570	Box Culvert	1x2	Cross Road
4	4+860	Box Culvert	1x2	Cross Road
5	5+840	Box Culvert	1x2	Cross Road
6	6+300	Box Culvert	1x2	Cross Road
7	12+100	Box Culvert	1x2	Cross Road
8	13+660	Box Culvert	1x2	Cross Road
9	14+990	Box Culvert	1x2	Cross Road
10	18+660	Box Culvert	1x2	Cross Road
11	19+530	Box Culvert	1x2	Cross Road

**Note:**

*The overall width of culverts shall be equal to Roadway width including the gap between main carriageway & service road/slip/connecting road, in case there is any service road/slip/connecting road. Any additional Barrel length required as per site conditions shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13 of EPC Contract Agreement.*

*Location of culverts are indicative and span arrangement is minimum specified. Exact location of these culverts may be decided in consultation with Authority Engineer. The actual location/vent way/span arrangements of culverts shall be determined on the basis of detailed investigations by the Contractor in accordance with the Specifications and Standards. Any variations in number of culverts/vent way/span arrangements specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13 of EPC Contract Agreement.*

- (e) **Repairs/replacements of railing/parapets, flooring and protection works of the existing culverts shall be undertaken as follows:**

Sl. No.	Chainage (km)	Type of repair required
NIL		

- (f) Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

**iii. Bridges**



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

(a) Existing bridges to be re-constructed/widened/retain.

(i) The existing bridges at the following locations shall be re-constructed as new Structures:

S. No.	Bridge location (km)	Salient details of existing bridge	Adequacy or otherwise of the existing waterway, vertical clearance, etc	Remarks
1	Exist Ch: 263+550 NH-37, Prop Ch: 0+210	Exist Box Culvert, Prop MNB, Box Type	Prop Span 1 x 10m, Prop Width 1 x 48.1m	With Footpath
2	Exist Ch: 19+380 Silchar Bypass, Prop Ch: 6+920	Exist Hume Pipe, Prop MJB, PSC Girder type	Prop Span 2 x 40m, Prop Width 2 x 13.5m	With Footpath
3	Exist Ch: 17+200 Silchar Bypass, Prop Ch: 9+098	Exist Under Construction Prop MNB, Box Type	Prop Span 1 x 10m, Prop Width 2 x 13.5m	With Footpath
4	Exist Ch: 16+715 Silchar Bypass, Prop Ch: 9+585	Exist Hume Pipe, Prop MNB, Box Type	Prop Span 1 x 10m, Prop Width 2 x 13.5m	With Footpath
5	Exist Ch: 15+910 Silchar Bypass, Prop Ch: 10+389	Exist Hume Pipe, Prop MNB, Box Type	Prop Span 1 x 10m, Prop Width 2 x 13.5m	With Footpath
6	Exist Ch: 15+440 Silchar Bypass, Prop Ch: 10+859	Exist Hume Pipe, Prop MNB, Box Type	Prop Span 1 x 10m, Prop Width 2 x 13.5m	With Footpath
7	Exist Ch: 13+000 Silchar Bypass, Prop Ch: 13+091.5	Constructed till A1, P1 & P2 and abandoned Prop MJB Composite Girder type	Prop Span 8 x 60 Prop Width 2 x 13.5m	With Footpath
8	Exist Ch: 12+270 Silchar Bypass, Prop Ch: 13+891.5	Exist. Span 3 x 10.5m, Exist. Width 1 x 42m Prop MNB, PSC Girder type	Prop Span 2 x 20m, Prop Width 2 x 11.6+2x11.0m	Without Footpath

❖ *Note: -*

❖ *Minimum 8.0 m vertical clearance shall be required from HFL of Barak River for Major Bridge at Chainage km 13+830 for navigation as per classification of NW-16 of Inland Waterway Authority of India.*



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

- ❖ *Minimum 50.0 m horizontal clearance span shall be required for Major Bridge across Barak River at Chainage km 13+830 for navigation as per classification of NW-16 of Inland Waterway Authority of India.*
- ❖ *Along Barak River, embankment protection / river guide on right bank (u/s to d/s) shall be provided 165 m on d/s side and 165 m u/s side.*

(ii) The following narrow bridges shall be widened:

Sl. No.	Chainage (km)	Existing width (m)	Extent of widening (m)	Cross-section at deck level for widening @
NIL				

(b) New bridges

New bridges at the following locations on the Project Highway shall be constructed. GADs for the new bridges are attached in the drawings folder.

Sl. No	Chainage (km)	Name of Nala	Square Span (m)	Skew (deg.)	Width of Structure (m)
a) Major Bridge					
NIL					
b) Minor Bridge					
1	15+538.5 Box Type with Footpath		3 x 12		2x 11.6 + 2 x 11.0

**Note:** Proposed span arrangement is minimum and the same shall be finalized as per site condition in accordance with the Manual in consent with the concerned authority. Any increase in length/span/height shall not be treated as change in scope of work.

(c) The railings of existing bridges shall be replaced by crash barriers at the following locations:

Sl. No.	Chainage (km)	Remarks
NIL		

(d) Repairs/replacements of railing/parapets of the existing bridges shall be undertaken as follows:

Sl. No.	Chainage (km)	Remarks
NIL		

(e) Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in paragraph 7.21 of the manual

Structures in marine environment



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000)on Silchar - Vairengte - Sairang road in the State of Assamunder Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl. No.	Chainage (km)	Remarks
Nil		

**iv. Rail-road bridges**

(a) Design, construction and detailing of ROB/RUB shall be as specified in section 7 of the manual.

**(b) Road over-bridges**

Road over-bridges (road over rail) shall be provided at the following level crossings, as per GAD drawings attached.

Sl. No.	Chainage (km)	Length of bridge(m)
Nil		

Note:

- The proposed span arrangement of ROBs are minimum. It may subject to change as per availability of railway boundaries/ requirement of the railways. Any increase in the cost due to change in the span arrangement and total length shall not be treated as change of scope of work.
- ROBs shall be designed, constructed and maintained as per the requirements of Railway authorities. The construction plans shall be prepared in consultation with the concerned railway authority.
- The ROBs shall be constructed and maintained by the Contractor under supervision of the Railways.
- All expenditure related to construction, maintenance and supervision of ROBs (except plan and estimate (P&E) charges) shall be borne by the Contractor.
- During construction, at the location of the existing level crossing, diversion road with level crossing if any shall be suitably provided by the Contractor.

**(c) Road under-bridges**

Road under-bridges (road under railway line) shall be provided at the following level crossings, as per GAD drawings attached:

S.No.	LocationofLevelCrossing(chainagekm)	Numberandlengthofspan(m)
NIL		

**v. Grade separated structures.**

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2 (ix) and 3 of this Annex-I.

**vi. Repairs and strengthening of bridges and structures.**

The existing bridges and structures to be repaired/strengthened, and the nature and



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

extent of repairs /strengthening required are given below:

(a) Bridges

Sl. No.	Chainage (km)	Nature and extent of repairs / strengthening to be carried out
NIL		

(b) ROB/ RUB

Sl. No.	Location of ROB/RUB (km)	Nature and extent of repairs / strengthening to be carried out
NIL		

(c) Overpasses/Underpasses and other structures

Sl. No.	Location of structure (km)	Nature and extent of repairs / strengthening to be carried out
NIL		

vii. List of Major Bridges and structures

The following is the list of the major Bridges and structures:

Sl. No.	Chainage (km)
NIL	

8. **Traffic Control Devices and Road Safety Works**

- (i) Traffic control devices and road safety works shall be provided in accordance with Section 9 of the Manual. Any requirements in the traffic control devices; road safety works shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13 of EPC Contract agreement.

**(a) Traffic Signs:**

Traffic signs include roadside signs, overhead signs and curb mounted, shall be provided all along the entire Project Highway as per schedule D. All advance direction/destination, reassurance, place identification signs along main road shall be overhead mounted on gantry. Exact location and number of overhead gantry signs to be decided by Contractor in accordance to manual with prior approval from AE and authority. Any increase shall not be constituted as change of Scope. The letter size and siting of all signs along main road shall be designed for the minimum design



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

speed. Minimum number of full overhead gantry sign and cantilever overhead gantry sign shall be provided in accordance with manual.

#### (b) Pavement Marking:

Pavement markings shall cover road marking for the entire Project Highway as per manual.

#### (c) Safety Barrier:

THRIE- Metal Beam barriers shall be provided all along the project highway on either side of main carriageway as per provision in the manual and TCS given in Appendix B-I. Minimum length of THRIE- Metal Beam barrier and RCC crash barrier shall be provided as per schedule.

### 9. Roadside Furniture

- (i) Roadside furniture including boundary pillar, pedestrian guard rail, pedestrian crossing, delineators, studs, MS Railing etc. shall be provided in accordance with the provisions of Section 9 and 12 of manual and Schedule D.

LED traffic blinkers: To be provided at all junctions, pedestrian crossings, exits and at other locations as per manual.

Noise barriers: shall be provided in accordance with manual; Locations shall be decided as per site condition in consent with Authority.

- (ii) Overhead traffic signs: Full width overhead signs and Cantilever signs shall be provided as per manual (IRC SP: 84-2019)

**Note:** The type, numbers and location of Traffic Signages shown in Traffic Signage plan as indicated in Annexure-III of Schedule-A are tentative and minimum specified. The actual numbers and location of Traffic Signages shall be determined by the Contractor in accordance with the requirement of the manual with approval from the NHIDCL/Authority's Engineer. Any variation in the number and type of road sign boards specified in this Clause of Schedule-B shall not constitute a Change of Scope.

### 10. Compulsory Afforestation

Compensatory afforestation should be as per Forest Conservation Act.

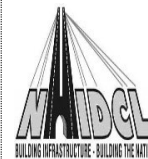
Shall be as per Manual. No of trees to be planted shall be as per IRC 21:2009 but not less than the Provision in Schedule C.

### 11. Hazardous Locations

Roadside safety barriers shall be provided at all locations of hazards such as high embankment, roadside obstacles, sharp curves, Flyover and bridge approaches, overpasses, ROB and any other locations identified in consultation with Authority Engineer during the execution of the project highway.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**12. Special Requirement**

**A. RETAINING WALL/REINFORCES SOIL WALL (RS WALL) /BREAST WALL**

Protection wall in the form of Breast/Retaining wall/Reinforced soil wall shall be constructed at following locations.

**A-1 BREAST WALL**

SI No	LHS				RHS			
	Chainage (m)		Length (m)	Height (m)	Chainage (m)		Length (m)	Height (m)
	From	To			From	To		
NIL								

**Note:** The proposed locations are minimum and any change in length/height shall not be treated as change in scope of work.

**A-2 Toe wall**

PCC Retaining walls shall be constructed at the following locations.

SI. No	LHS					RHS				
	Chainage (m)		Length (m)	Height (m)	Remarks	Chainage (m)		Length (m)	Height (m)	Remarks
	From	To				From	To			
1	-	-	-	-	-	7+960	9+300	1340	2	PCC
2	12+550	13+670	1120	4	PCC	12+550	13+670	1120	4	PCC
<b>Total Length=</b>		<b>1120</b>						<b>2460</b>		

**Note:** The proposed locations are minimum and any change in length & height shall not be treated as change in scope of work.

**A-3 Reinforced Soil Slope**

Reinforced Soil slope (RS slope) shall be constructed at following locations.

Reinforced Soil Slope								
SI No	LHS				RHS			
	Chainage (m)		Length (m)	Height (m)	Chainage (m)		Length (m)	Height (m)
	From	To			From	To		
NIL								

**A-4 Reinforced Soil wall (RS Wall)**

Reinforced Soil wall shall be constructed at the following locations.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Reinforced Soil Wall								
SI No	LHS				RHS			
	Chainage (m)		Length (m)	Height (m)	Chainage (m)		Length (m)	Height (m)
	From	To			From	To		
NIL								

**Note:** The proposed locations are minimum and any change in length & height shall not be treated as change in scope of work.

RE Wall quantity on approaches is 98819Sqm (12700m) is minimum. However, addition in the quantity shall not attract change of Scope and shall be borne by the contractor.

**Embankment Protection**

Embankment slope protection shall be provided as per requirement of the site as per Manual, however minimum 34684 sqm turfing and 116542 sqm erosion control (using geo-green) however, keeping in view sustainability, the geogreen blanket should have minimum 7.5 kn/m MD and should be certified by at least Central Government Organization and product has minimum 5-7 years product performance certificate by MORT&H and its agencies.

**Erosion Controlled Embankment protection (at least with wire crates Gabion Structures OR better technology) along Barak River on right bank, for a minimum liner length of 330m (minimum 3040 Cum) U/S & D/S (either side =165 m) to be executed, as part of construction of Barak River bridge at D. Ch. 13+090. The proposed quantities are minimum and any increase in length and quantity shall not be treated as change in scope of work**

**a) Other Protection Works**

NIL

**Note:**

- The locations and quantity of various protection works specified in this above clause (e) of schedule B is tentative and minimum specified. The contractor shall be responsible for accurate assessment of slope protection & stabilization measures as per schedule D. Any change in location, increase in quantity, change in specifications or change in type of protection work shall not constitute a Change of Scope. Therefore, contractor should carry out thorough investigation at site and assess the requirement of slope protection and slide prone zone and other safety features on his own before submission of bid.
- Before placement of support system at site, the slopes shall be stripped to remove the excess debris / hanging boulders, stones, muck, shrubs etc. and site



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

*specific best possible smooth surface shall be prepared. The support system shall be laced on this smooth surface.*

#### Note:

1. Above length and height of Retaining wall, Toe wall, Reinforced Earth Wall is tentative and minimum specified. The actual length and height of Retaining wall/ Toe wall / Reinforced Earth Wall shall be determined by the Contractor in accordance with the requirements of the manual with approval from the NHIDCL/Authority's Engineer. Any variation in the length and height specified in this Clause of Schedule-B shall not constitute a Change of Scope.
2. Above quantity of protection measure for embankment protection is tentative and minimum specified. The actual length of boulder pitching shall be determined by the Contractor in accordance with the requirements of manual based on site investigations with approval from the NHIDCL/Authority's Engineer. Any variation in the quantity specified in this Clause of Schedule-B shall not constitute a Change of Scope.
3. Any requirement of Ground Improvement at the locations of proposed **Retaining Wall / Toe Wall/ Reinforced Earth Wall/ High Embankment** shall not be treated as COS and will be incidental to work.

#### 13. RAINWATER HARVESTING

- (i) As per Ministry of Environment and Forests Notification, New Delhi dated 14.01.1997 (as amended on 13.01.1998, 05.01.1999 & 6.11.2000), the construction of Rainwater, harvesting structure is mandatory in and around Water Crisis area, notified by the Central Ground Water Board.
- (ii) Rainwater harvesting structures shall be provided at every 1000m on either side.
- (iii) Rainwater harvesting structure shall be provided as per IRC: SP:42-2014 (Guideline for road drainage) and IRC: SP:50-2013 (Guidelines on Urban Drainage)

14. **Special Requirement for Hill Roads:** Project Road passing through plain and rolling terrain therefore special requirement for Hill Roads is not applicable.

#### 15. Change of Scope

The length of Structures and bridges specified hereinabove shall be treated as an approximate assessment. The actual lengths as required on the basis of detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**(SCHEDULE B-1)**

**1. Details of proposed Utilities Schedules**

The shifting of utilities and felling of trees shall be carried out by the contractor. The cost of the same shall be borne by the Authority. The details of utilities are as follows:

Sr. No	Type of Utility	Unit	Quantity	Location/stretch (LHS/RHS)
A	Electrical Utilities			
A1	Electrical Poles	Nos.	1628	-
A2	LT/11Kv / 33Kv Length	Circuit Km	22	-
A3	Transformer 25 kVA/63 Kva/100 Kva	Nos.	33	-
A4	HT lines crossing location	Nos.	22	-
B	Water/Sewage pipeline			
B1	Hand pumps	Nos.	0	00/00
B2	Water supply (Diff Dia. and Specification)	meters	20227	
C	Telephones & OFC			
C1	Telephones	Nos.	22	
C2	OFC	Nos	0	
D	Felling of Tress	Nos.	400	

The details of items/quantities/works to be executed for shifting of utilities is tentative. All works/quantities/ miscellaneous items to be executed at site as per detailed estimate of utility owning department, without any additional claim/Change of Scope.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Annexure - I (Schedule B1)

### UTILITY SHIFTING

Shifting of obstructing existing utilities indicated in Schedule A to an appropriate location in accordance with the standards and specifications of concerned Utility Owning Department is part of the scope of work of the Contractor. The bidders may visit the site and assess the quantum of shifting of utilities for the projects before submission of their bid. The specifications of concerned Utility Owning Department shall be applicable and followed.

#### Note-I:

(a) The type/ spacing/ size/ specifications of poles/ towers/ lines/ cables to be used in shifting work shall be as per the guidelines of utility owning department and it is to be agreed solely between the Contractor and the utility owning department. No change of scope shall be admissible, and no cost shall be paid for using different type/ spacing/ size/ specifications in shifted work in comparison to those in the existing work or for making any overhead crossings to underground as per requirement of utility owning department and/or construction of project highway. The Contractor shall carry out joint inspection with utility owning department and get the estimates from the utility owning department. The assistance of the Authority is limited to giving forwarding letter on the proposal of Contractor to utility owning department whenever asked by the Contractor. The decision/ approval of utility owning department shall be binding on the Contractor.

(b) The supervision charges at the rates/ charges applicable of the utility owning department shall be paid directly by the Authority to the Utility Owning department as and when Contractor furnishes demand of Utility Owning Department along with a copy of estimated cost given by the later.

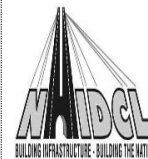
(c) The dismantled material/scrap of existing Utility to be shifted/ dismantled shall belong to the Contractor who would be free to dispose-off the dismantled material as deemed fit by them unless the Contractor is required to deposit the dismantled material to utility owning department as per the norm and practice and in that case the amount of credit for dismantled material may be availed by the Contractor as per estimate agreed between them.

(d) The utilities shall be handed over after shifting work is completed to Utility Owning Department to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after handing over process is complete as far as utility shifting works are concerned.

**Note II:** - Copy of Utility shifting plan enclosed.



Four laning of Silchar - Dhaneharisection (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**APPENDIX B-I**

**Typical Cross Section Schedule**

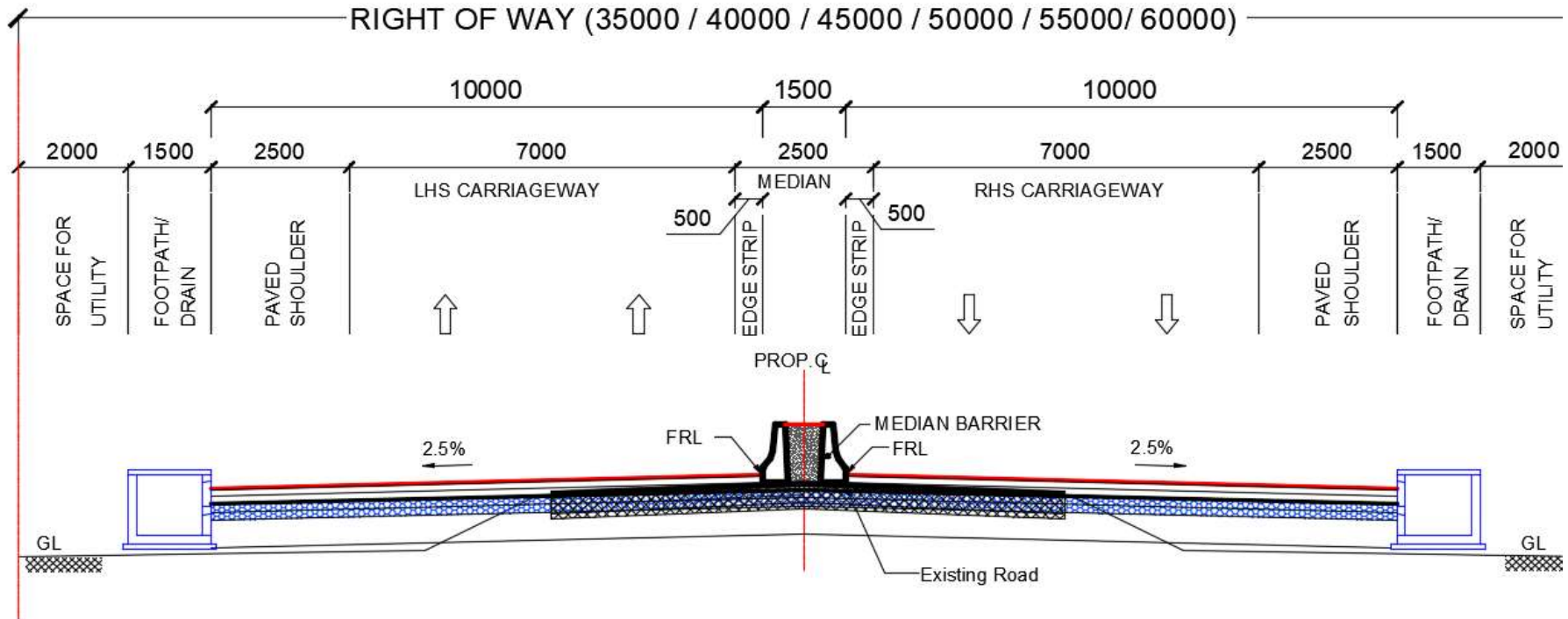
Chainage (m)		Length (m)	TCS Type	Remarks Description
From	To			
0+000	0+225	225	TCS 1	Follow Existing
0+225	1+360	1135	TCS 8	Follow Existing
1+360	3+800	2440	TCS 1	Follow Existing
3+800	4+520	720	TCS 5	New Alignment
4+520	5+100	580	TCS 8	Follow Existing
5+100	5+770	670	TCS 2	Follow Existing
5+770	6+760	990	TCS 9	Follow Existing
6+760	7+400	640	TCS 4	Silchar Bypass
7+400	7+960	560	TCS 6	Silchar Bypass
7+960	9+300	1340	TCS 7	Silchar Bypass
9+300	9+550	250	TCS 4	Silchar Bypass
9+550	10+450	900	TCS 6	Silchar Bypass
10+450	11+550	1100	TCS 4	Silchar Bypass
11+550	12+550	1000	TCS 10	Silchar Bypass
12+550	13+670	1120	TCS 7	Silchar Bypass
13+670	14+050	380	TCS 10	Silchar Bypass
14+050	14+440	390	TCS 3	Silchar Bypass
14+440	15+590	1150	TCS 10	Silchar Bypass
15+590	16+900	1310	TCS 4	Sonabarighat Bypass
16+900	17+350	450	TCS 6	Sonabarighat Bypass
17+350	18+100	750	TCS 4	Sonabarighat Bypass
18+100	19+215	1115	TCS 10	Sonabarighat Bypass
19+215	20+000	785	TCS 2	Follow Existing



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



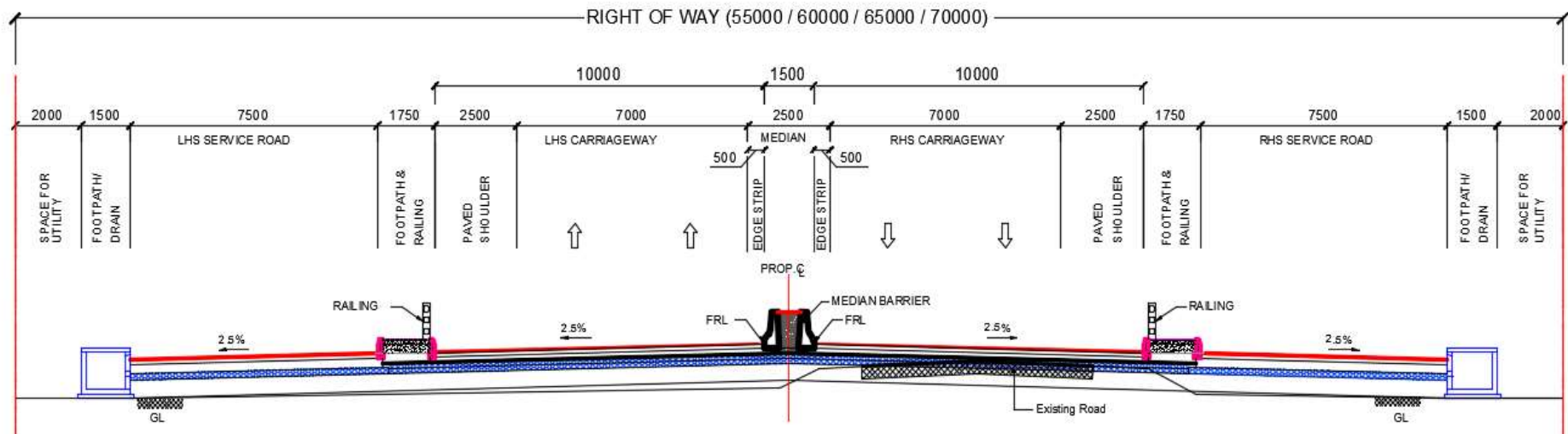
4 Lane with Paved Shoulder and RCC Drain on Both Side in Built-up Area along the Existing Road with 2.5 m Median (TCS-1)



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



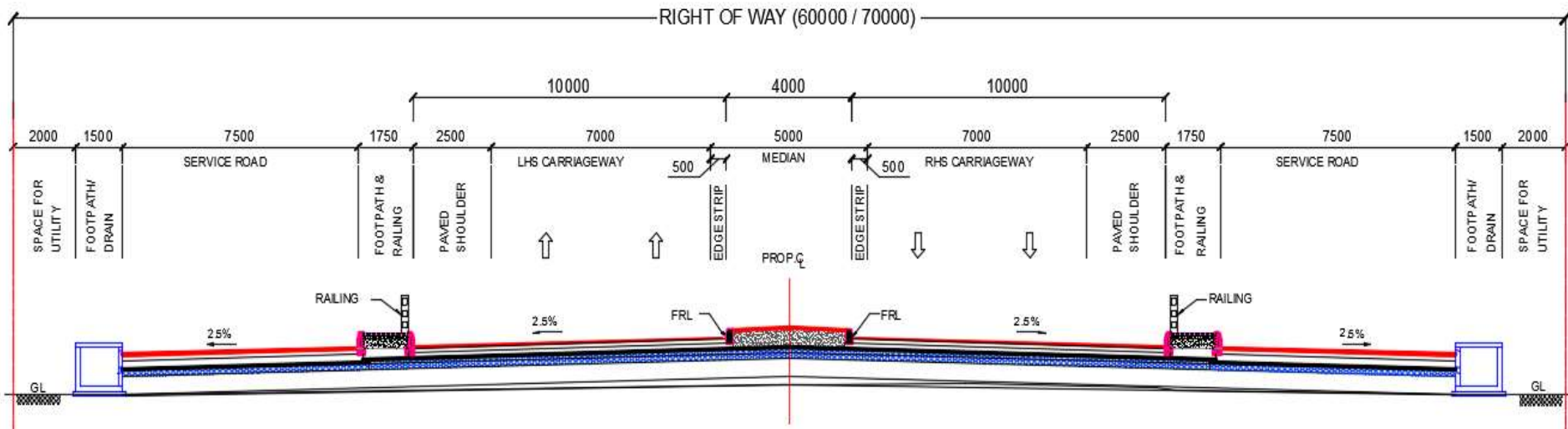
**4 Lane with Paved Shoulder and 7.5m wide Service Road and RCC Drain on both side in Built-up Area along the Existing Road with 2.5m Median (TCS-2)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



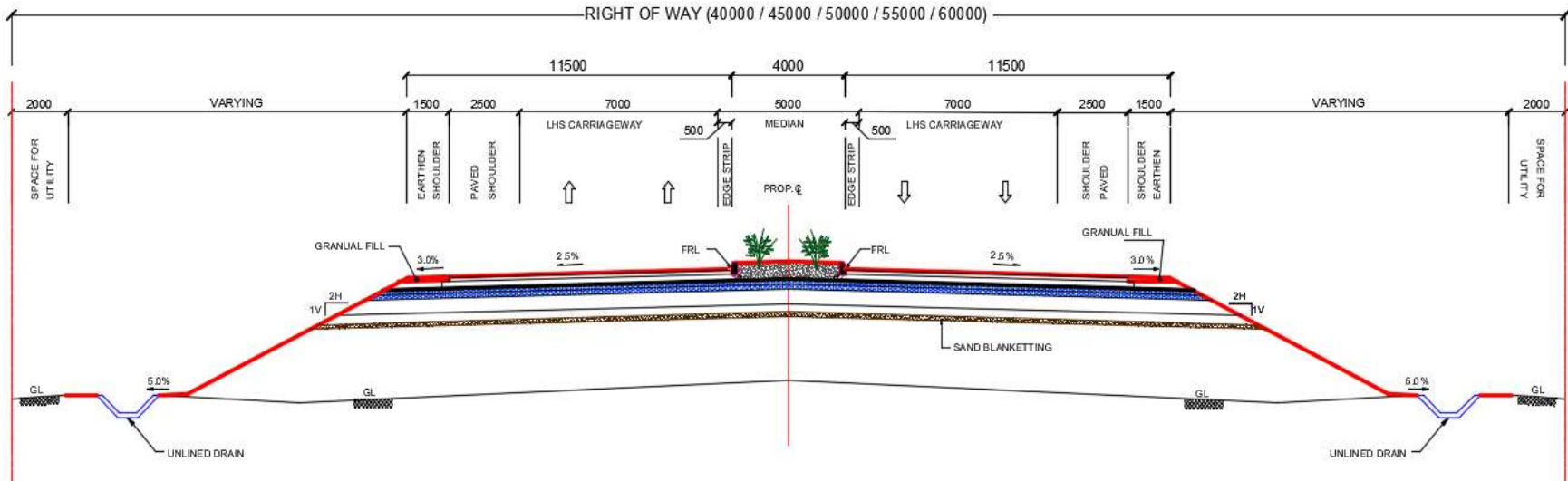
**4 Lane with Paved Shoulder and Footpath with 7.5m wide Service Road and RCC Drain on both side in Built-up Area with 5.0m Median (TCS-3)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



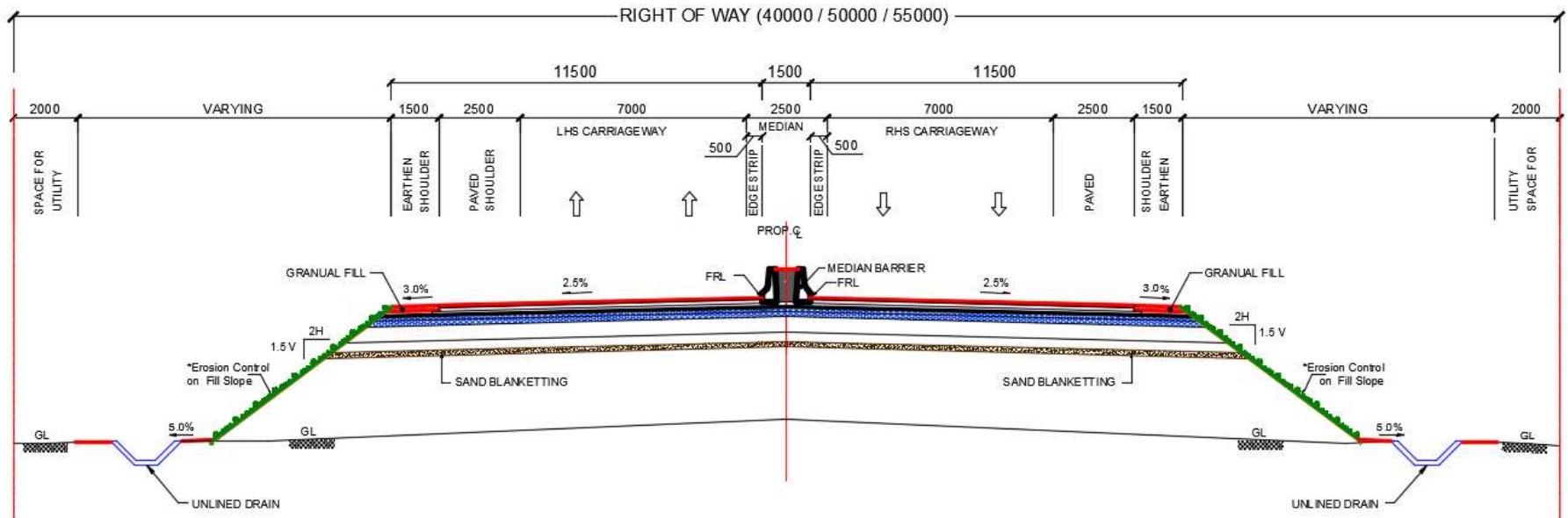
**4 Lane Road with Paved and Earthen Shoulder in Rural Area with 5.0m Median (TCS-4)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



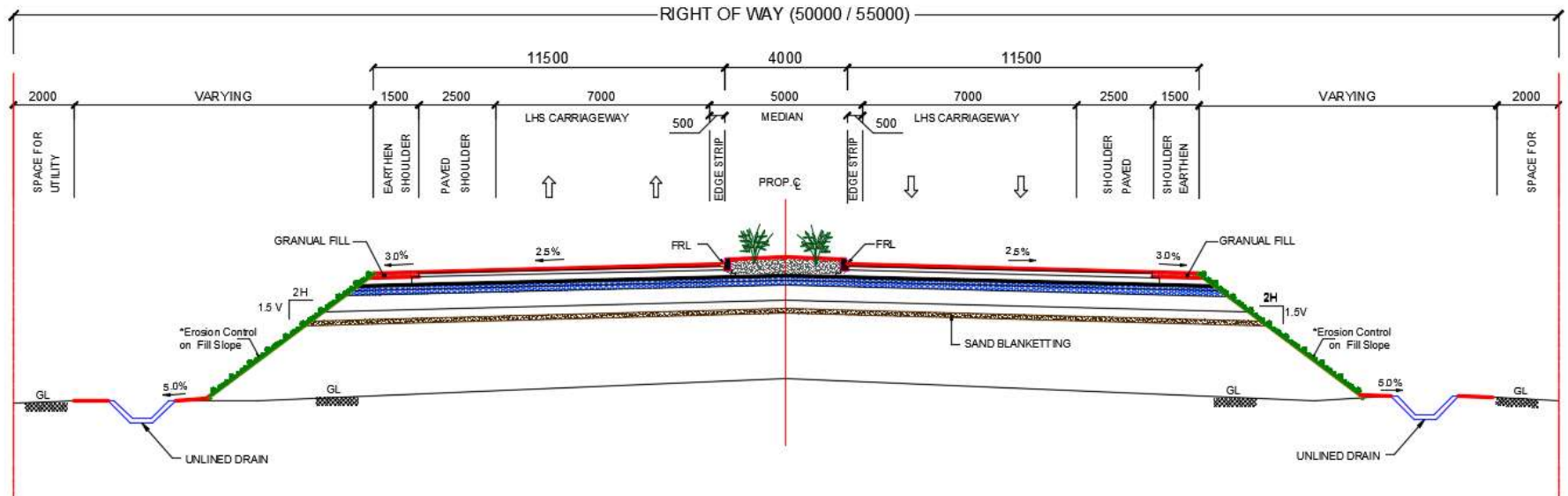
4 Lane Road with Paved and Earthen Shoulder with 2.5m Median and Stone Pitching (TCS-5)



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



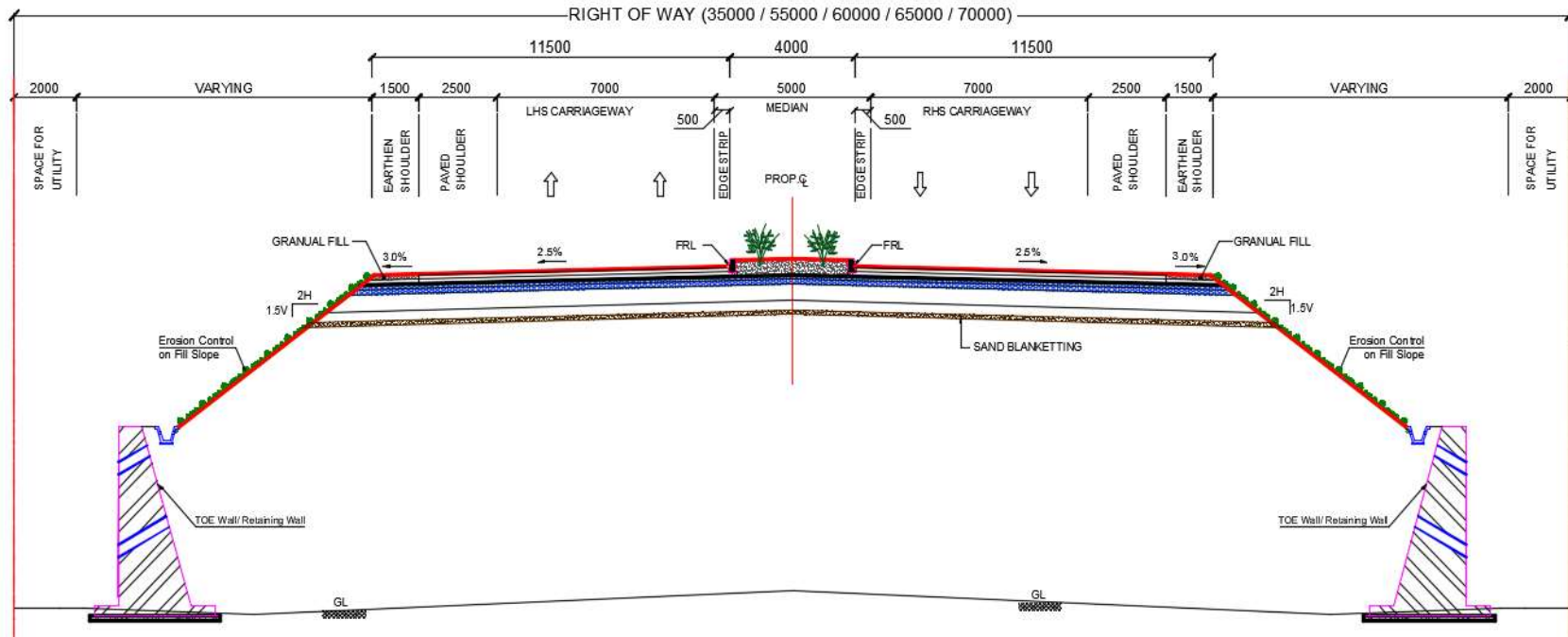
**Construction of New 4 Lane Road with Paved and Earthen Shoulder with 5.0m Median and Stone Pitching (TCS-6)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



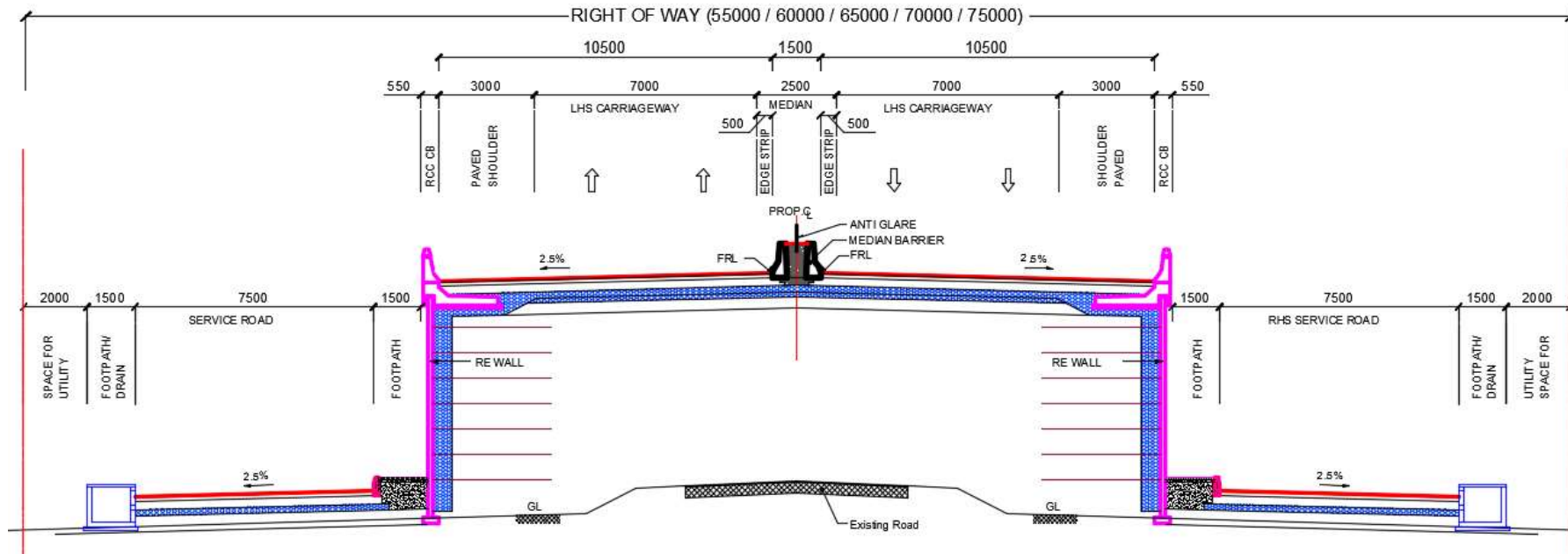
**Construction of New 4 Lane Road with Paved and Earthen Shoulder with Toe Wall (TCS-7)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



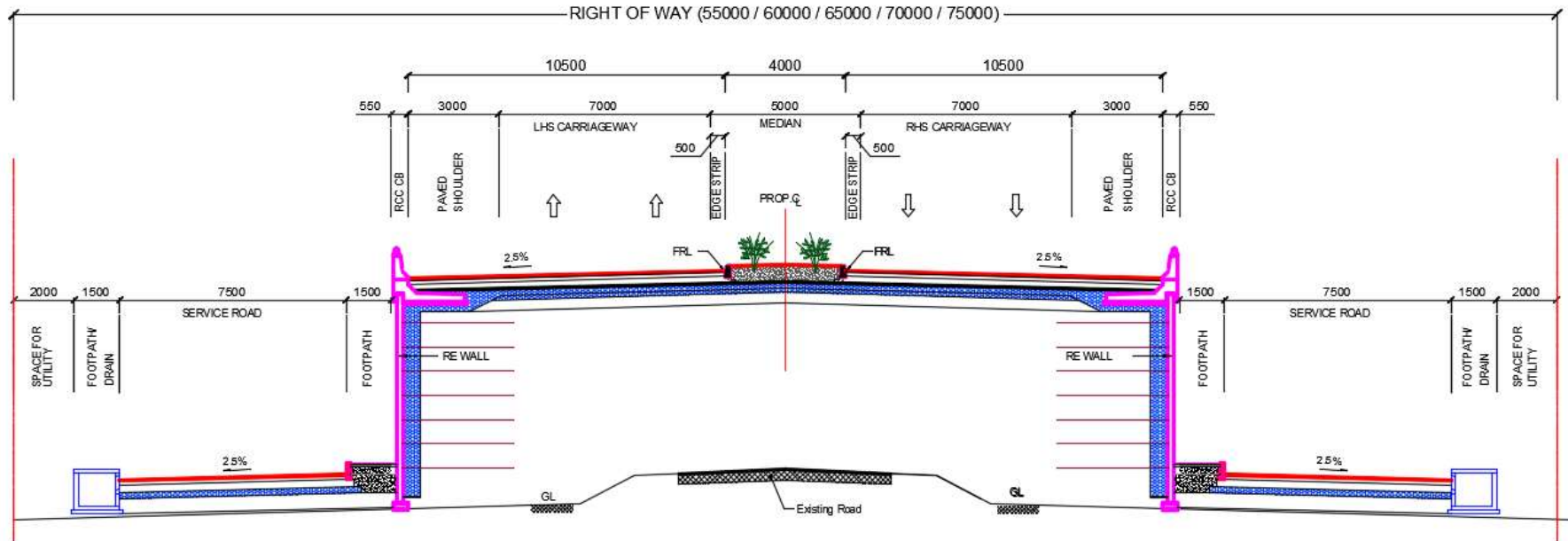
**4 Lane Approaches of Grade separated structure with 7.5m wide Service Road and RCC Drain on both side along Existing Road with 2.5 m Median (TCS-8)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



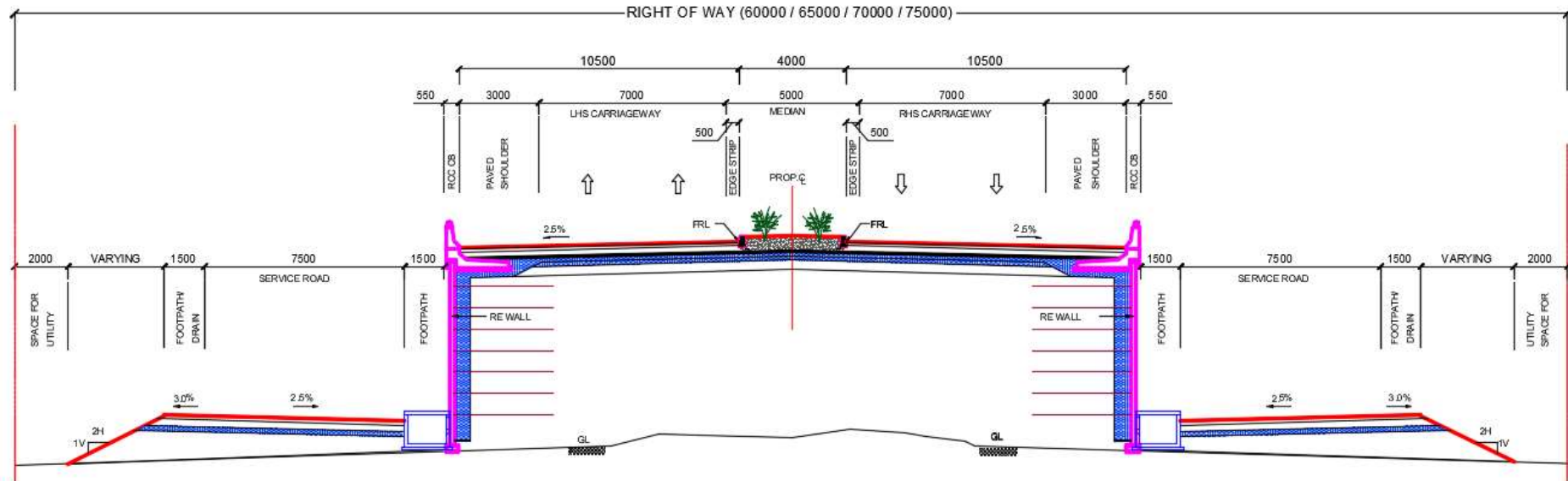
**4 Lane Approaches of Grade separated structure with 7.5m wide Service Road and RCC Drain on both side along Existing Road with 5.0 m Median (TCS-9)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



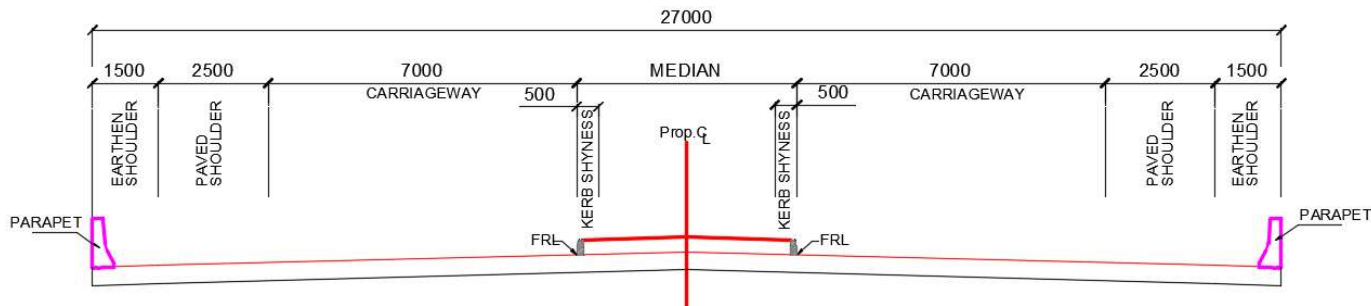
**4 Lane Approaches of Grade Separated structures with 7.5m wide Service Road and RCC Drain on both side with 5.0 m Median (TCS-9)**



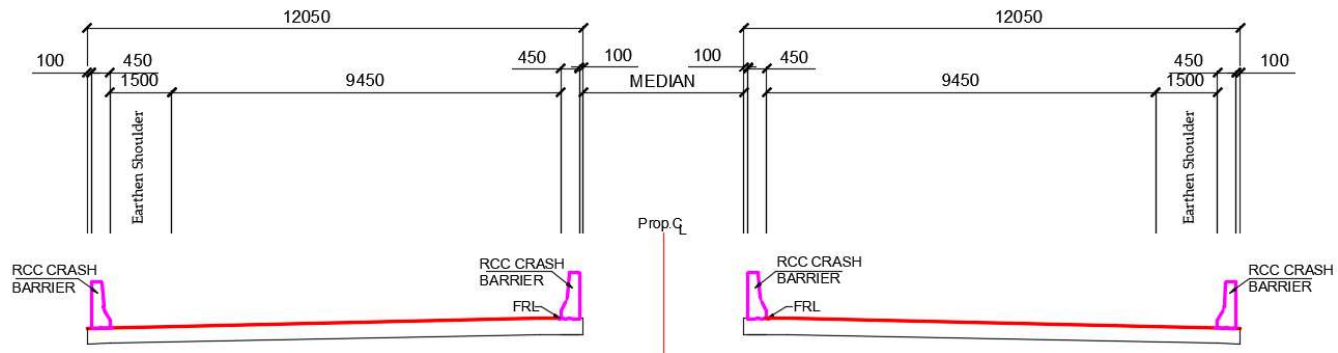
Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



**4-Lane Buried Culvert (Pipe/Slab/ Box) at Road Level (TCS-11)**



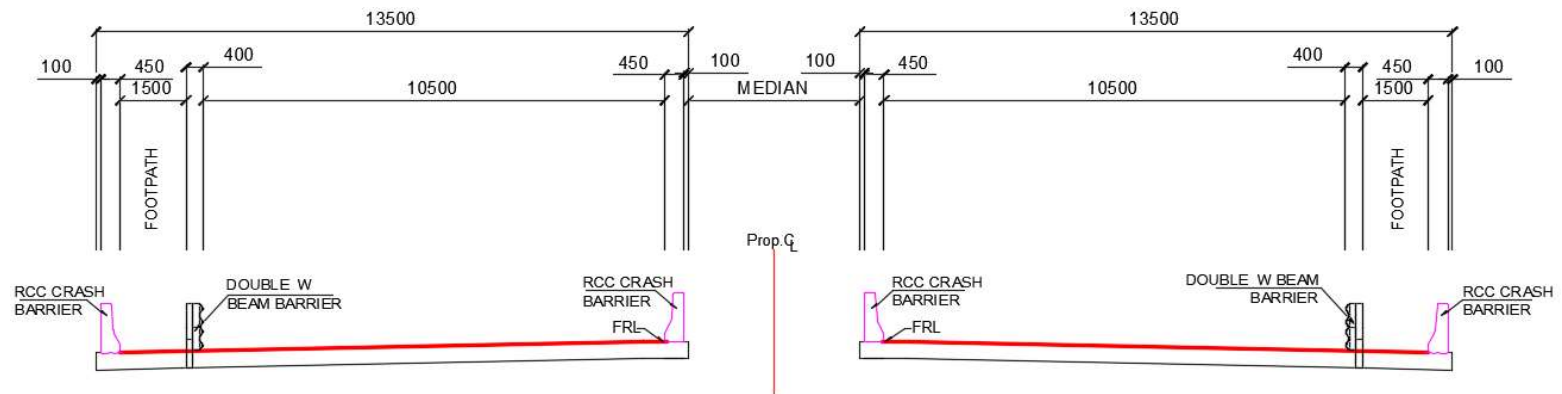
**4-Lane Slab/ Box Culvert at Road Level (TCS-12)**



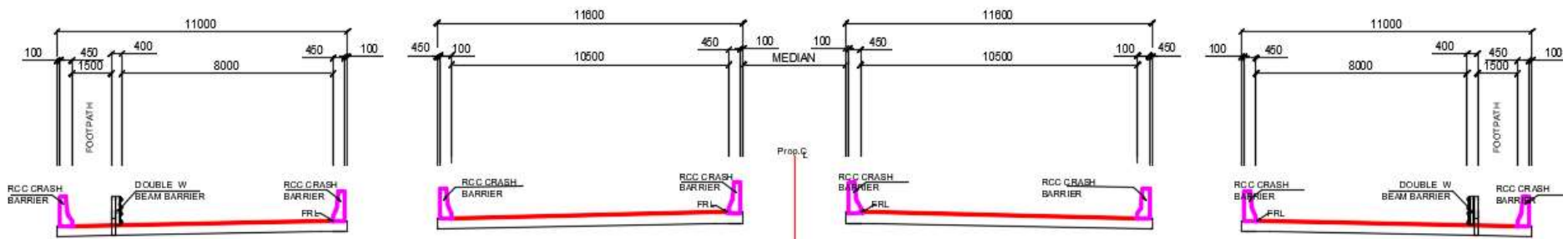
Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**



**4-Lane Bridge at Deck Level without Footpath (TCS-13)**



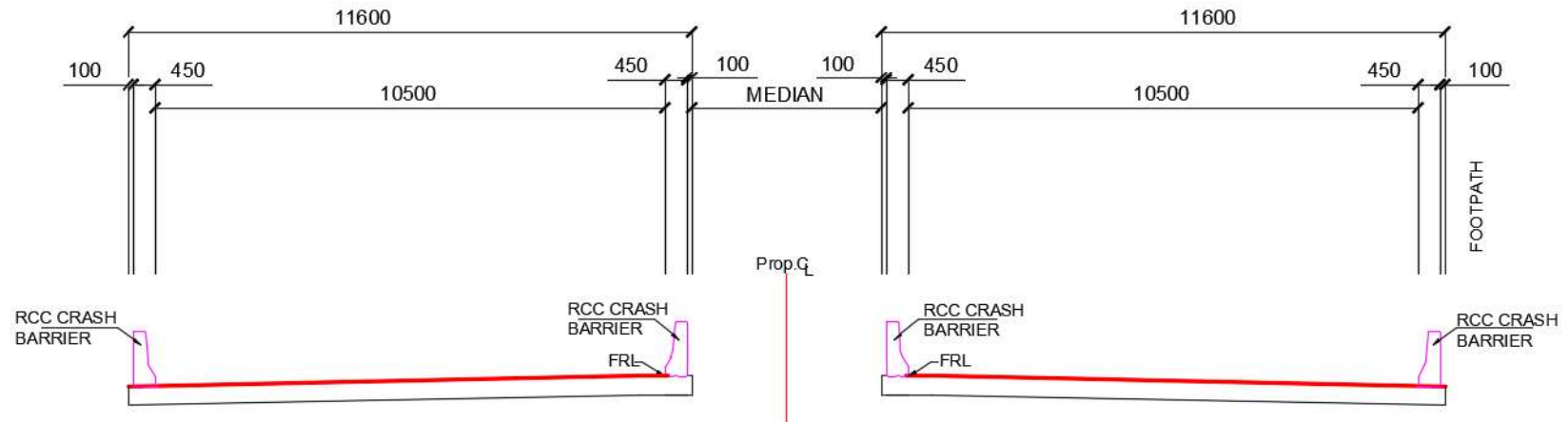
**4-Lane Bridge at Deck Level with Service Road and Footpath (TCS-14)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule



4-

Lane Grade separated Structures at Deck level (TCS-15)

***Schedule-C***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

### Schedule - C

(See Clause 2.1)

#### Project Facilities

#### 1 Project Facilities

This schedule indicates the minimum spatial and functional requirements of the facilities to be provided on the Project Highway (Total length of 20.00 km) with an aim to cater to the envisaged demand till the end of the concession period.

The Contractor shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:

- (a) Toll plazas.
- (b) Traffic Control Device/Road Safety Device/Roadside furniture.
- (c) Pedestrian facilities.
- (d) Land Scaping and Tree Plantation.
- (e) Truck lay-byes.
- (f) Bus-bays and Passenger shelters.
- (g) Wayside amenities.
- (h) Rest areas
- (i) Foot over Bridges
- (j) Building for traffic aid post
- (k) Building for medical aid post
- (l) Highway Lighting
- (m) Other to be specified

#### 2 Description of Project Facilities

Each of the Project Facilities is described below:

##### (a) Toll Plaza location

Toll Plaza location is mentioned below – Toll Plaza shall be provided as per as stipulated in section 10 of IRC Manual viz IRC-SP-84, 2019. The minimum lane requirement in the opening year are as follows.

Sl. No.	Chainage (km)			Lanes
	From	To	Length (m)	
1	16+100	16+560	400	4+4

**Note:**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

- All toll plaza premises shall be fenced with boundary wall with minimum 6ft height from OGL.
- Entry approach to each toll plaza shall be having Weigh in Motion equipment for connecting toll booths and toll office for collection of toll fees as per as per Schedule D.
- Based on the minimum toll lane requirement as given above, toll booths, toll plaza complex, weigh bridges, electrical systems, toll plaza and all other facilities required/mentioned in manual shall be provided as per Schedule D. All the structures shall be RCC framed structure as per Schedule D.
- No. of toll lanes specified above are minimum indicative. The Concessionaire shall design and provide toll lane as per IRC: SP: 87-2019 subject to minimum specified above. Any increase in no. of toll lane shall not be treated as change of scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.
- Solar panels shall be erected over the Toll Plaza Canopy to generate the green energy. Same shall be utilized for toll plaza lighting and other energy requirement within toll plaza area along with conventional lighting.

#### (b) Roadside furniture

Traffic Control Device/Road Safety Device/Roadside furniture as per provisions of manual shall be provided. Yellow flashing lights using solar power with full alternative power back-up shall be provided at all junctions/pedestrian crossings/hazardous locations etc

- Traffic Signs** - Road Signs include roadside signs; chevron signs; overhead signs and kerb mounted signs along the entire Project Highway and Slip/Connecting Road. All road signs shall be of Prismatic Grade Sheeting corresponding to Class „C“ Sheeting described in IRC: 67 and any of the types VIII; IX or XI as per ASTM D-4956-09. The road signs and overhead signs erected on the Project highway and Slip/Connecting Road with regard to requirement of number of signs, type and size of sign, size of letter, color of sign, layout of sign; etc. including signs installations shall conform to Section-9 of “Manual” and IRC: 67, Code of Practice for Road Signs. Chevron signs shall be installed on curves and intersection. In addition to signs prescribed in “Manual” other signs such as signs showing safety slogans, toll free numbers, nearby hospital and police station facilities, lane discipline signs on gantry, headway etc. will also be provided as directed by Authority/Independent Engineer. The overhead signs shall be placed on a structurally sound gantry or cantilever structure made of tubular structure or steel structure. The final locations shall be



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

finalized in consultation with the Authority Engineer. The height, lateral clearance and installation of the sign structures shall be as per the MoRT&H/IRC guidelines. Design and location of overhead gantry sign, route marker signs for Project Highway shall be as per the IRC: 67.

- ii. **Pavement Marking** - Pavement markings shall cover the entire Project Highway and shall be as per section- 9 of the “Manual” and IRC: 35. These markings shall be applied to road center lines; edge lines; continuity line; stop lines; give-way lines; diagonal/chevron markings; zebra crossing and at parking areas etc. by means of an approved self-propelled machine which has a satisfactory cut-off valve capable of applying broken lines automatically.

Road markings other than on main carriageway edges (both shoulder and median side) shall be of hot applied thermoplastic materials with glass reflectorizing beads as per relevant sub clauses of MoRT&H specifications; Raised profile edge lines as per Clause 7.7 of IRC 35 shall be provided on main carriageway (both sides i.e., shoulder and median side/right lane).

- iii. **Raised Pavement Markers, Reflection pavement markers and Solar Studs** - Shall be provided along entire Project Highway as per requirements of Section -9 of the IRC:SP:84-2019 & Section 8 of IRC:SP:84-2019 and relevant IRC Manual specified in Schedule D.
- iv. **Hectometer & Kilometer Distance marker** - Shall be provided along entire Project Highway as per requirements of Section -12 of IRC: SP:84-2019 and relevant IRC Manual specified in Schedule D
- v. **LED Traffic Blinkers:** LED Traffic Blinkers shall be provided at all major & minor junctions, Pedestrian Crossings, Built-up areas and any other locations as specified in Schedule D.
- vi. **Crash barrier** - THRIE- Metal Beam crash barrier shall be provided along the project highway as indicated in TCS given in Schedule B and IRC: SP-91-2019. Minimum length of crash barrier is 11760m.

SI No	LHS			RHS		
	Chainage (m)		Length (m)	Chainage (m)		Length (m)
	From	To		From	To	
1	6+850	6+880	30.0	6+850	6+880	30.0
2	6+960	11+500	4540.0	6+960	9+300	2340.0
3	-	-	-	9+550	10+530	980.0
4	-	-	-	10+590	10+650	60.0



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sl No	LHS			RHS		
	Chainage (m)		Length (m)	Chainage (m)		Length (m)
	From	To		From	To	
5	-	-	-	10+730	10+900	170.0
6	-	-	-	10+970	11+500	530.0
8	12+550	12+850	300.0	12+550	12+850	300.0
9	13+330	13+660	330.0	13+330	13+660	330.0
10	15+860	16+070	210.0	15+860	16+070	210.0
11	16+800	17+500	700.0	16+800	17+500	700.0
<b>Total Length=</b>			<b>6110.0</b>			<b>5650.0</b>

*Note: The above proposed locations are minimum. Any change in length shall not be treated as change in scope of work.*

- vii. **Jersey crash barrier**-Jersey crash barrier shall be provided along the project highway where median is proposed for 2.5m (with kerbshy), indicated in TCS given in Schedule B and IRC: SP-91-2019. Minimum length of crash barrier is **13110m** (Total Length).

Sl.no.	Design Chainage		Length (m)	Side
	From	To		
1	0+000	0+225	225	LHS and RHS
2	0+225	1+360	1135	LHS and RHS
3	1+360	3+800	2440	LHS and RHS
4	3+800	4+520	720	LHS and RHS
5	4+520	5+100	580	LHS and RHS
6	5+100	5+770	670	LHS and RHS
7	19+215	20+000	785	LHS and RHS
	<b>Total</b>		<b>6555</b>	LHS and RHS

*Note: The above proposed locations are minimum. Any change in length shall not be treated as change in scope of work.*

- i. **MS Railing** - MS Railing along the Project highway shall be provided as per Schedule D.
- ii. **Delineators** - Shall be provided as per IRC: 79-1981 and requirements & specifications as per Schedule D.
- iii. **Boundary Stones** - For Entire Project highway at 50m interval.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**iv. KM Stones and Hectometer Stone - For Entire Project highway.**

**(c) Location of Pedestrian facilities:**

- i. Pedestrian Guard rails shall be provided at junctions, Truck lay byes, bus bays and near schools and hospitals as per provisions in section 12.2 of the Manual
- ii. Pedestrian guardrail shall be provided at each bus stop location and at other locations as per manual.
- iii. Pedestrian Crossings: Pedestrian crossing facilities shall be provided on locations as recommended in Schedule D

**(d) Landscaping & Tree Plantation**

Landscaping and Tree plantation shall be done at Toll Plaza, Major Intersection etc.

Landscape treatment of the Project Highway shall be undertaken through planting of trees and ground cover of appropriate varieties and landscaping on surplus land in the ROW. The Construction Contractor should plant at least **3336** nos. of trees of minimum 6 ft. height with tree guard made up of MS sections.

Plantation scheme shall be prepared in consultation with the Forest Department of the Government of Assam, and the Independent Consultant/ NHIDCL.

**(e) Location of Truck lay-by:**

Truck Lay bye shall be provided at the following locations in accordance with section 12.4 of the manual. Truck Lay bye shall be provided at below mentioned locations.

Sl. No	Existing Chainage (Km)	Design Chainage (Km)	Side (Left/Right)
1	-	7+760	LHS
2	-	8+160	RHS

**(f) Bus-bays and Bus shelters table is given below:**

As stipulated in section 12.5 of the Manual, Bus-bays and shelters shall be provided at below indicative locations.

Sl. No.	Design Chainage	Side	Name Of Village
1	1+045	LHS	Silchar
2	0+995	RHS	Silchar
3	6+175	LHS	Badripur
4	6+515	RHS	Badripur
5	11+925	RHS	Bagpur



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

Sl. No.	Design Chainage	Side	Name Of Village
6	12+315	LHS	Bagpur
7	14+740	RHS	Rahimore
8	15+235	LHS	Rahimore
9	19+660	RHS	Kajidahar
10	19+390	LHS	Kajidahar

**Note:** Above shown number of locations are minimum, however, the location of bus bays and passenger shelters shall be finalized as per suitability of location and site requirement in consultation with Authority. Any change in location shall not treated as change of scope.

#### (g) Way-side Amenities

Wayside amenities shall be a part of the Highway and shall be constructed with the minimum facilities such as Parking areas (Truck, Buses, Cars, Minibuses), and garage for minor repair, Hotel/ Motel, Trauma Center, Rest Areas, Fast Food Centre, Travel Information Facilities, Toilets and Bath Facilities, space for Maintenance staff & Vehicle Service Station, Dormitory etc.

Wayside amenities shall be developed in accordance with Schedule -D & MoRT&H circular No. RW/NH-33044/14/2003-S& R(R)-Pt. dated 11th Feb. 2021.

#### (h) Rest Area

Rest Area shall be provided (2.0 hectare) at the following locations:

Sl. No.	Design Chainage	Side	Name of Village
1	8+060	LHS	Silchar Bypass

#### (i) Foot Over Bridges:

Foot Over Bridges shall be provided at the following locations:

Sl. No.	Existing Chainage	Design Chainage (Tentative)	Remarks
Nil			

#### (j) Buildings for Traffic Aid Posts

The Contractor shall, in accordance with the type designs prescribed for such police outpost buildings by the State Government or a substitute thereof, construct buildings not exceeding 25 (twenty-five) square meters of plinth area, for each of



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

the Traffic Aid Posts, and hand them over to the Authority no later than 30 (thirty) days prior to the Scheduled Completion Date. The Traffic Aid Post(s) shall be deemed to be part of the Site and shall vest in the Client.

#### (k) Building for Medical Aid Post

The Contractor shall, at its cost and in accordance with the type designs prescribed for such buildings by the State Medical Department (or a substitute thereof to be designated by the Authority), construct an aid post building and hand it over to the Authority, no later than 30 (thirty) days prior to Scheduled Completion Date. The Medical Aid Post(s) shall be deemed to be part of the Site and shall vest in the Client.

#### (l) Highway Lighting:

##### i) Highway Lighting:

Lighting shall be provided at Junctions, median openings, built up areas, toll plaza, Bus stops, truck Lay-byes, service road/connecting roads and rest areas.

On all grade separated structures Lightings will be provided on Top & Underside as per clause 3.3.4 & 12.3 of IRC SP 84.

High Mast Lighting shall be provided at all Major Junctions, Toll Plaza locations or any other location as per clause 12.3.3 of IRC SP 84.

ii) **Rainwater Harvesting** – As per Ministry of Environment and Forests Notification, New Delhi dated 14.01.1997 (as amended on 13.01.1998, 05.01.1999 & 6.11.2000), the construction of Rainwater, harvesting structure is mandatory in and around Water Crisis area, notified by the Central Ground Water Board. Minimum 1 number per km has to be provided throughout the project length.

#### Other to be specified

Relocation and Beautification of the Existing Statue of former PM Atal Bihari Vajpayee at Design Chainage 0+800 Km.

#### Environment

The Project Highway during design, construction and maintenance during implementation period shall conform to the environmental rules and regulations in force. The Construction Contractor shall be responsible for the same.

## ***Schedule-D***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

## **Schedule- D**

*(See Clause 2.1)*

### **Specifications and standards**

#### **1 Construction**

The Contractor shall comply with the Specifications and Standards set forth in Annex-I of this Schedule-D for construction of the Project Highway.

#### **2 Design Standards**

The Project Highway including Project Facilities shall conform to design requirements set out in the following documents:

Manual of Standards and Specifications for Four Laning of Highways published by the Indian Roads Congress IRC: SP: 84-2019- second revision; referred to herein as the Manual and all the other latest IRC Codes, Specifications and Circulars issued by Ministry of Road Transport & Highways (MoRT&H).

The provision of manual shall be considered as modified/ deviated to the extents of changes/ modification as mentioned / incorporated under schedule B & C with respect to manual.

All Utilities shifting works for development of National Highways shall be carried out as per the Standard Operating Procedure (SOP) dated 11 February 2021 issued by Ministry of Road Transport & Highways.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

## **Annex-I**

*(Schedule-D)*

### **Specifications and Standards for Construction**

#### **1. Specifications and Standards**

All Materials, works and construction operations shall conform to the manual of Specifications and Standards for Four-Laning of Highways (IRC: SP: 84-2019) with all amendments till date published by IRC (referred to as “Manual” in this Schedule) and MORT&H Specifications for Road and Bridge Works (5th revision). Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority Engineer for construction of the project highway.

As regards, the work of utility shifting, the relevant specifications, relevant rules regulations and acts of Utility Owning Department/ Agencies shall be applicable.

#### **2. Deviations from the Specifications and Standards**

- i. The terms “Contractor”, “Independent Engineer” and “Concession Agreement” used in the manual shall be deemed to be substituted by the terms “Contractor”, “Authority’s Engineer” and “Agreement” respectively.
- ii. Notwithstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:

***Schedule-E***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule – E

(See Clause 2.1 and 14.2)

### MAINTENANCE REQUIREMENTS

#### 1 Maintenance Requirements

- (i) The Contractor shall, at all-time maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.
- (ii) The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfillment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.
- (iii) All Materials, works and construction operations shall conform to the “SPECIFICATIONS FOR ROAD AND BRIDGE WORKS (FIFTH REVISION, April 2013)”, including latest corrections slips, issued by the Ministry of Surface Transport & Highways, Government of India and published by the Indian Roads Congress.

Where the specifications for a work are not given, Good Industry Practice shall be adopted to the satisfaction of the Authority’s Engineer.

#### 2 Repair/rectification of Defects and deficiencies

The obligations of the Contractor in respect of Maintenance Requirements shall include repair and rectification of the Defects and deficiencies specified in Annex-I of this Schedule-E within the time limit set forth therein.

#### 3 Other Defects and deficiencies

In respect of any Defect or deficiency not specified in Annex-I of this Schedule-E, the Authority’s Engineer may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Contractor within the time limit specified by the Authority’s Engineer.

#### 4 Extension of time limit

Notwithstanding anything to the contrary specified in this Schedule-E, if the nature and extent of any Defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Contractor shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Authority’s Engineer and conveyed to the Contractor and the Authority with reasons thereof;

#### 5 Emergency repairs/restoration

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect,



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

#### **6 Daily inspection by the Contractor**

The Contractor shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Authority's Engineer may specify. Such record shall be kept in safe custody of the Contractor and shall be open to inspection by the Authority and the Authority's Engineer at any time during office hours.

#### **7 Pre-monsoon inspection / Post-monsoon inspection**

The Contractor shall carry out a detailed pre-monsoon inspection of all bridges, culverts and drainage system before [1st June] every year in accordance with the guidelines contained in IRC: SP:35. Report of this inspection together with details of proposed maintenance works as required on the basis of this inspection shall be sent to the Authority's Engineer before the [10th June] every year. The Contractor shall complete the required repairs before the onset of the monsoon and send to the Authority's Engineer a compliance report. Post monsoon inspection shall be done by the [30th September] and the inspection report together with details of any damages observed and proposed action to remedy the same shall be sent to the Authority's Engineer.

#### **8 Repairs on account of natural calamities**

All damages occurring to the Project Highway on account of torrential rains, floods, earthquake or other natural disasters shall be undertaken by the Contractor at its own cost and/or out of the proceeds of insurance.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**Annex - I**  
(Schedule-E)

**Annex –I Repair/rectification of Defects and deficiencies**

The Contractor shall repair and rectify the Defects and deficiencies specified in this Annex-I of Schedule-E within the time limit set forth in the table below.

**Table -1: Maintenance Criteria for Pavements:**

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/Repair	Maintenance Specifications	
		Desirable	Acceptable						
Flexible Pavement (Pavement of MCW, Service Road, approaches of Grade structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)	Potholes	Nil	< 0.1 % of area and subject to limit of 10 mm in depth	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC 82: 2015 and Distress Identification Manual for Long Term Pavement Performance Program, FHWA 2003 ( <a href="http://www.tfhrcc.com/pavement/ftp/reports/03031/">http://www.tfhrcc.com/pavement/ftp/reports/03031/</a> )	24-48 hours	MORT&H Specification 3004.2	
	Cracking	Nil	< 5 % subject to limit of 0.5 sqm for any 50 m length	Daily			7-15 days	MORT&H Specification 3004.3	
	Rutting	Nil	< 5 mm	Daily	Straight Edge		15 -30 days	MORT&H Specification 3004.2	
	Corrugations and Shoving	Nil	< 0.1 % of area	Daily	Length Measurement Unit like Scale, Tape, odometer etc.		2-7 days	IRC:82-2015	
	Bleeding	Nil	< 1 % of area	Daily			3-7 days	MORT&H Specification 3004.4	
	Ravelling/ Stripping	Nil	< 1 % of area	Daily			7-15 days	IRC:82-2015 read with IRC SP 81	
	Edge Deformation/ Breaking	Nil	< 1 m for any 100 m section and width < 0.1 m at any location, restricted to 30 cm from the edge	Daily			7- 15 days	IRC:82-2015	
	Roughness BI	2000 mm/km	2400 mm/km	Bi-Annually	Class I Profilometer SCRIM (Sideway-force		Class I Profilometer : ASTM E950 (98) :2004 –Standard Test Method for measuring Longitudinal Profile of Travelled	180 days	IRC:82-2015
	Skid Number	60SN	50SN	Bi-Annually			180 days	BS: 7941-1: 2006	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/R epair	Maintenance Specifications	
		Desirable	Acceptable						
	Pavement Condition Index	3	2.1	Bi-Annually	Coefficient Routine Investigation Machine or equivalent)	Surfaces with Accelerometer Established Inertial Profiling Reference ASTM E1656 -94: 2000-Standard Guide for Classification of Automatic Pavement Condition Survey Equipment	180 days	IRC:82-2015	
	Other Pavement Distresses			Bi-Annually			2-7 days	IRC:82-2015	
	Deflection/ Remaining Life			Annually			Falling Weight Deflectometer	180 days	IRC:115-2014
<b>Rigid Pavement (Pavement of MCW, Service Road, Grade structure, approaches of connecting roads, slip roads, lay byes etc. as applicable)</b>	Roughness BI	2200mm/km	2400mm/km	Bi-Annually	Class I Profilometer	ASTM E950 (98) :2004 and ASTM E1656 -94: 2000	180 days	IRC:SP:83-2008	
	Skid	Skid Resistance no. at different speed of vehicles		Bi-Annually	SCRIM (Sideway-force Coefficient Routine Investigation Machine or equivalent)	IRC:SP:83-2008	180 days	IRC:SP:83-2008	
	<b>Minimum SN</b>	<b>Traffic Speed (Km/h)</b>							
	36	50							
	33	65							
	32	80							
	31	95							
	31	110							
<b>Embankment / Slope</b>	Edge drop at shoulders	Nil	40mm	Daily	Length Measurement Unit like Scale, Tape, odometer etc.	IRC	7-15 days	MORT&H Specification 408.4	
	Slope of camber/cross fall	Nil	<2% variation in prescribed slope of camber /cross fall	Daily			7-15 days	MORT&H Specification 408.4	
	Embankment Slopes	Nil	<15 % variation in prescribe side slope	Daily			7-15 days	MORT&H Specification 408.4	
	Embankment Protection	Nil	Nil	Daily			NA	7-15 days	MORT&H Specification
	Rain Cuts/ Gullies in slope	Nil	Nil	Daily Specially			NA	7-15 days	MORT&H Specification



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule

Asset Type	Performance Parameter	Level of Service (LOS)		Frequency of Inspection	Tools/ Equipment	Standards and References for Inspection and Data Analysis	Time limit for Rectification/Repair	Maintenance Specifications
		Desirable	Acceptable					
				During Rainy Season				

In addition to the above performance criterion, the contractor shall strictly maintain the rigid pavements as per requirements in the following table

**Table -2: Maintenance Criteria for Rigid Pavements:**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
<b>CRACKING</b>						
1	<b>Single Discrete Cracks Not intersecting with any joint</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	Not applicable
			1	w < 0.2 mm. hair cracks		
			2	w = 0.2 - 0.5 mm, discernible from slow-moving car	Seal without delay	Seal, and stitch if L > 1m. Within 7days
			3	w = 0.5 - 1.5 mm, discernible from fast-moving car		
			4	w = 1.5 - 3.0 mm	Seal, and stitch if L > 1 m. Within 7 days	Staple or Dowel Bar Retrofit, FDR for affected portion. Within 15days
5	w > 3 mm.					
2	<b>Single Transverse (or Diagonal) Crack intersecting with one or more joints</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	
			1	w < 0.2 mm, hair cracks	Route and seal with epoxy. Within 7 days	Staple or Dowel Bar Retrofit. Within 15days
			2	w = 0.2 - 0.5 mm, discernible from slow vehicle	Route, seal and stitch, if L > 1 m. Within 7 days	
			3	w = 0.5 - 3.0 mm, discernible from fast vehicle	Dowel Bar Retrofit. Within 15 days	Full Depth Repair Dismantle and reconstruct affected. Portion with norms and specifications - See Para 5.5 & 9.2 Within 15days
			4	w = 3.0 - 6.0 mm	Not Applicable, as it may be full depth	
			5	w > 6 mm, usually associated with spalling, and/or slab rocking under traffic		



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
3	<b>Single Longitudinal Crack intersecting with one or more joints</b>	w = width of crack L = length of crack d = depth of crack D = depth of slab	0	Nil, not discernible	No Action	
			1	w < 0.5 mm, discernible from slow moving vehicle	Seal with epoxy, if L > 1 m. Within 7 days	Staple or dowel bar retrofit. Within 15days
			2	w = 0.5 - 3.0 mm, discernible from fast vehicle	Route seal and stitch, if L > 1 m. Within 15 days	-
			3	w = 3.0 - 6.0 mm	Staple, if L > 1 m. Within 15 days	Partial Depth Repair with stapling. Within 15 days
			4	w = 6.0 - 12.0 mm, usually associated with spalling	Not Applicable, as it may be full depth	Full Depth Repair Dismantle and reconstruct affected portion as per norms and specifications - See Para 5.6.4 Within 15 days
5	w > 12 mm, usually associated with spalling, and/or slab rocking under traffic					
4	<b>Multiple Cracks intersecting with one or more joints</b>	w = width of crack	0	Nil, not discernible	No Action	
			1	w < 0.2 mm, hair cracks	Seal, and stitch if L > 1 m. Within 15 days	-
			2	w = 0.2 - 0.5 mm, discernible from slow vehicle		
			3	w = 0.5 - 3.0 mm, discernible from fast vehicle	Full depth repair within 15 days	Dismantle, Reinstatement subbase, Reconstruct whole slab as per specifications within 30 days
			4	w = 3.0 - 6.0 mm panel broken into 2 or 3 pieces		
5	w > 6 mm and/or panel broken into more than 4 pieces					
5	<b>Corner Break</b>	w = width of crack L = length of crack	0	Nil, not discernible	No Action	
			1	w < 0.5 mm; only 1 corner broken	Seal with low viscosity epoxy to secure broken parts Within 7 days	Seal with epoxy seal with epoxy Within 7days
			2	w < 1.5 mm; L < 0.6 m, only one corner broken		
			3	w < 1.5 mm; L < 0.6 m, two corners broken	Partial Depth (Refer Figure 8.3 of IRC:SP: 83-2008) Within 15 days	Full depth repair Reinstate sub-base, and reconstruct the slab as per norms and specifications within 30days
			4	w > 1.5 mm; L > 0.6 m or three corners broken		
5	three or four corners broken					
6	<b>Punchout (Applicable to Continuous Reinforced</b>	w = width of crack L = length (m/m <sup>2</sup> )	0	Nil, not discernible		No Action
			1	w < 0.5 mm; L < 3 m <sup>2</sup>	Not Applicable, as it may be	Seal with low viscosity epoxy to



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
	Concrete Pavement (CRCP) only		2	either $w > 0.5 \text{ mm}$ or $L < 3 \text{ m/m}^2$	full depth	secure broken parts. Within 15days Full depth repair - Cut out and replace damaged area taking care not to damage reinforcement. Within 30days
			3	$w > 1.5 \text{ mm}$ and $L < 3 \text{ m/m}^2$		
			4	$w > 3 \text{ mm}$ , $L < 3 \text{ m/m}^2$ and deformation		
			5	$w > 3 \text{ mm}$ , $L > 3 \text{ m/m}^2$ and deformation		
<b>Surface Defects</b>						
7	Ravelling or Honeycomb type surface	r = area damaged surface/total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	<b>Short Term</b> No action.	Not Applicable
			1	$r < 2 \%$	Local repair of areas damaged and liable to be damaged. Within 15 days	
			2	$r = 2 - 10 \%$	Bonded Inlay, 2 or 3 slabs if affecting. Within 30 days	
			3	$r = 10-25\%$	Reconstruct slabs, 4 or more slabs if affecting. Within 30 days	
			4	$r = 25 - 50 \%$		
			5	$r > 50\%$ and $h > 25 \text{ mm}$		
8	Scaling	r = damaged surface/total surface of slab (%) h = maximum depth of damage	0	Nil, not discernible	<b>Short Term</b> No action.	Not Applicable
			1	$r < 2 \%$	Local repair of areas damaged and liable to be damaged. Within 7days	
			2	$r = 2 - 10 \%$	Bonded Inlay within 15 days	
			3	$r = 10 - 20\%$	Reconstruct slab within 30 days	
			4	$r = 20 - 30 \%$		
			5	$r > 30 \%$ and $h > 25 \text{ mm}$		
9	Polished Surface/Glazing	t = texture depth, sand patch test	0		No action.	Not Applicable
			1	$t > 1 \text{ mm}$	Monitor rate of deterioration	
			2	$t = 1 - 0.6 \text{ mm}$		
			3	$t = 0.6 - 0.3 \text{ mm}$		



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			4	$t = 0.3 - 0.1 \text{ mm}$		
			5	$t < 0.1 \text{ mm}$	Diamond Grinding if affecting 50% or more slabs in a continuous stretch of minimum 5 km. Within 30 days	
10	Popout (Small Hole), Pothole Refer Para 8.4	$n = \text{number/m}^2$ $d = \text{diameter}$ $h = \text{maximum depth}$	0	$d < 50 \text{ mm}; h < 25 \text{ mm}; n < 1 \text{ per } 5 \text{ m}^2$	No action.	Not Applicable
			1	$d = 50 - 100 \text{ mm}; h < 50 \text{ mm}; n < 1 \text{ per } 5 \text{ m}^2$	Partial depth repair 65 mm deep. Within 15 days	
			2	$d = 50 - 100 \text{ mm}; h > 50 \text{ mm}; n < 1 \text{ per } 5 \text{ m}^2$	Partial depth repair 110mm i.e. 10 mm more than the depth of the hole. Within 30 days	
			3	$d = 100 - 300 \text{ mm}; h < 100 \text{ mm}; n < 1 \text{ per } 5 \text{ m}^2$	Partial depth repair 110mm i.e. 10 mm more than the depth of the hole. Within 30 days	
			4	$d = 100 - 300 \text{ mm}; h > 100 \text{ mm}; n < 1 \text{ per } 5 \text{ m}^2$	Full depth repair. Within 30 days	
			5	$d > 300 \text{ mm}; h > 100 \text{ mm}; n > 1 \text{ per } 5 \text{ m}^2$	Full depth repair. Within 30 days	
<b>Joint Defects</b>						
11	Joint Seal Defects	loss or damage $L = \text{Length as \% total joint length}$	0	Difficult to discern.	<b>Short Term</b> No action.	<b>Long Term</b> Not Applicable
			1	Discernible, $L < 25\%$ but of little immediate consequence with regard to ingress of water or trapping incompressible material.	Clean joint, inspect later.	
			3	Notable. $L > 25\%$ insufficient protection against ingress of water and trapping incompressible material.	Clean and reapply sealant in selected locations. Within 7 days	
			5	Severe; $w > 3 \text{ mm}$ negligible protection against ingress of water and trapping incompressible material.	Clean, widen and reseal the joint. Within 7 days	
12	Spalling of Joints	$w = \text{width on either side of the joint}$ $L = \text{length of spalled portion (as \% joint length)}$	0	Nil, not discernible	No action.	Not Applicable
			1	$w < 10 \text{ mm}$	Apply low viscosity epoxy resin/ mortar in cracked portion. Within 7 days	
			2	$w = 10 - 20 \text{ mm}, L < 25\%$	Apply low viscosity epoxy resin/ mortar in cracked portion. Within 7 days	
			3	$w = 20 - 40 \text{ mm}, L > 25\%$	Partial Depth Repair.	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action		
					For the case $d < D/2$	For the case $d > D/2$	
			4	$w = 40 - 80 \text{ mm}, L > 25\%$	Within 15 days		
					30 - 50 mm deep, $h = w + 20\%$ of $w$ , within 30 days		
					50 - 100 mm deep repair. $H = w + 20\%$ of $w$ . Within 30 days		
			5	$w > 80 \text{ mm}, \text{ and } L > 25\%$			
13	Faulting (or Stepping) in Cracks or Joints	$f = \text{difference of level}$	0	not discernible, $< 1 \text{ mm}$	No action.	No action.	
			1	$f < 3 \text{ mm}$			
			2	$f = 3 - 6 \text{ mm}$	Determine cause and observe, take action for diamond grinding		Replace the slab as appropriate. Within 30days
			3	$f = 6 - 12 \text{ mm}$	Diamond Grinding		
			4	$f = 12 - 18 \text{ mm}$	Raise sunken slab.		Replace the slab as appropriate. Within 30days
			5	$f > 18 \text{ mm}$	Strengthen subgrade and sub-base by grouting and raising sunken slab		
14	Blowup or Buckling	$h = \text{vertical displacement from normal profile}$	0	Nil, not discernible	<b>Short Term</b>	<b>Long Term</b>	
			1	$h < 6 \text{ mm}$	No Action		
			2	$h = 6 - 12 \text{ mm}$	Install Signs to Warn Traffic within 7 days		
			3	$h = 12 - 25 \text{ mm}$			
			4	$h > 25 \text{ mm}$	Full Depth Repair. Within 30 days		
			5	shattered slabs, ie 4 or more pieces	Replace broken slabs. Within 30 days		
15	Depression	$h = \text{negative vertical displacement from normal profile } L = \text{length}$	0	Not discernible, $h < 5 \text{ mm}$	No action.	Not Applicable	
			1	$h = 5 - 15 \text{ mm}$			
			2	$h = 15-30 \text{ mm}, \text{ Nos } < 20\% \text{ joints}$	Install Signs to Warn Traffic within 7 days		
			3	$h = 30 - 50 \text{ mm}$			



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
			4	$h > 50$ mm or $> 20\%$ joints	Strengthen sub-grade. Reinstate pavement at normal level if $L < 20$ m. Within 30 days	
			5	$h > 100$ mm		
16	Heave	$h$ = positive vertical displacement from normal profile. $L$ = length	0	Not discernible. $h < 5$ mm	<b>Short Term</b>	scrabble
			1	$h = 5 - 15$ mm	No action.	
			2	$h = 15 - 30$ mm, Nos $< 20\%$ joints	Follow up.	
			3	$h = 30 - 50$ mm	Install Signs to Warn Traffic within 7 days	
			4	$h > 50$ mm or $> 20\%$ joints	Stabilise subgrade. Reinstate pavement at normal level if length $< 20$ m. Within 30 days	
			5	$h > 100$ mm		
17	Bump	$h$ = vertical displacement from normal profile	0	$h < 4$ mm	No action	
			1	$h = 4 - 7$ mm	Grind, in case of new construction within 7 days	Construction Limit for New Construction.
			3	$h = 7 - 15$ mm	Grind, in case of ongoing Maintenance within 15 days	Replace in case of new construction. Within 30days
			5	$h > 15$ mm	Full Depth Repair. Within 30 days	Full Depth Repair. Within 30days
18	Lane to Shoulder Dropoff	$f$ = difference of level	0	Nil, not discernible $< 3$ mm	<b>Short Term</b>	For any 100 m stretch Reconstruct shoulder, if affecting 25% or more of stretch. Within 30days
			1	$f = 3 - 10$ mm	No action.	
			2	$f = 10 - 25$ mm	Spot repair of shoulder within 7 days	
			3	$f = 25 - 50$ mm		
			4	$f = 50 - 75$ mm		
			5	$f > 75$ mm	Fill up shoulder within 7 days	
<b>Drainage</b>						
19	Pumping	quantity of fines	0	not discernible	No Action	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Sr. No.	Type of Distress	Measured Parameter	Degree of Severity	Assessment Rating	Repair Action	
					For the case $d < D/2$	For the case $d > D/2$
		and water expelled through open joints and cracks Nos	1 to 2	slight/ occasional Nos < 10%	Repair cracks and joints Without delay.	Inspect and repair sub-drainage at distressed sections and upstream.
			3 to 4	appreciable/ Frequent 10 - 25%	Lift or jack slab within 30 days.	
		Nos/100 m stretch	5	abundant, crack development > 25%	Repair distressed pavement sections. Strengthen subgrade and subbase. Replace slab. Within 30 days	
20	Ponding	Ponding on slabs due to blockage of drains	0-2	No discernible problem	No action.	Action required to stop water damaging foundation within 30 days.
			3 to 4	Blockages observed in drains, but water flowing	Clean drains etc within 7 days, Follow up	
			5	Ponding, accumulation of water observed	-do-	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**Table -3: Maintenance Criteria for Safety Related Items and Other Furniture Items:**

Asset Type	Performance Parameter	Level of Service (LOS)			Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Highway	Availability of Safe Sight Distance	As per IRC SP: 84-2014, a minimum of safe stopping sight distance shall be available throughout.			Monthly	Manual Measurements with Odometer along with video/ image backup	Removal of obstruction within 24 hours, in case of sight line affected by temporary objects such as trees, temporary encroachments. In case of permanent structure or design deficiency: Removal of obstruction/improvement of deficiency at the earliest Speed Restriction boards and suitable traffic calming measures such as transverse bar marking, blinkers, etc. shall be applied during the period of rectification.		IRC:SP 84-2014
		Design Speed, kmph	Desirable Minimum Sight Distance (m)	Safe Stopping Sight Distance (m)					
		100	360	180					
		80	260	130					
Pavement Marking	Wear	<70% of marking remaining			Bi-Annually	Visual Assessment as per Annexure-F of IRC:35-2015	Re - painting	Cat-1 Defect – within 24 hours Cat-2 Defect - within 2 months	IRC:35-2015
	Day time Visibility	During expected life Service Time Cement Road - 130mcd/m <sup>2</sup> /lux Bituminous Road - 100mcd/m <sup>2</sup> /lux			Monthly	As per Annexure-D of IRC:35-2015	Re - painting	Cat-1 Defect – within 24 hours Cat-2 Defect – within 2 months	IRC:35-2015
	Night Time Visibility	<u>Initial and Minimum Performance for Dry Retro reflectivity during night time:</u>			Bi-Annually	As per Annexure-E of IRC:35-2015	Re - painting	Cat-1 Defect – within 24 hours Cat-2 Defect – within 2 months	IRC:35-2015
		Design Speed	(RL) Retro Reflectivity (mcd/m <sup>2</sup> /lux)						
			Initial (7 days)	Minimum Threshold level (TL) & warranty period required up to 2 years					
		Up to 65	200	80					
65 - 100	250	120							



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)			Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		Above 100	350	150					
		Initial and Minimum Performance for Night Visibility under wet condition (Retro reflectivity): Initial 7 days Retro reflectivity: 100 mcd/m <sup>2</sup> /lux Minimum Threshold Level: 50 mcd/m <sup>2</sup> /lux							
	Skid Resistance	Initial and Minimum performance for Skid Resistance: Initial (7days): 55BPN Min. Threshold: 44BPN *Note: shall be considered under urban/city traffic condition encompassing the locations like pedestrian crossings, bus bay, bus stop, cycle track intersection delineation, transverse bar markings etc			Bi-Annually	As per Annexure-G of IRC:35-2015	Within 24 hours	IRC:35-2015	
Road Signs	Shape and Position	Shape and Position as per IRC:67-2012. Signboard should be clearly visible for the design speed of the section.			Daily	Visual with video/image backup	Improvement of shape, in case if shape is damaged.  Relocation as per requirement	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs)  15 Days in case of Gantry/Cantilever Sign boards	IRC:67-2012
	Retro reflectivity	As per specifications in IRC:67-2012			Bi-Annually	Testing of each signboard using Retro Reflectivity Measuring Device. In accordance with ASTM D 4956-09.	Change of signboard	48 hours in case of Mandatory Signs, Cautionary and Informatory Signs (Single and Dual post signs)  1 Month in case of	RC:67-2012



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
						Gantry/Cantilever Sign boards	
<b>Kerb</b>	Kerb Height	As per IRC 86:1983 depending upon type of Kerb	Bi-Annually	Use of distance measuring tape	Raising Kerb Height	Within 1 Month	RC 86:1983
	Kerb Painting	<u>Functionality:</u> Functioning of Kerb painting as intended	Daily	Visual with video/image backup	Kerb Repainting	Within 7-days	RC 35:2015
<b>Other Road Furniture</b>	Reflective Pavement Markers (Road Studs)	Numbers and Functionality as per specifications in IRC:SP:84-2014 and IRC:35-2015, unless specified in Schedule-B.	Daily	Counting	New Installation	Within 2 months	IRC:SP:84-2014, IRC:35-2015
	Pedestrian Guardrail	<u>Functionality:</u> Functioning of guardrail as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:SP:84-2014
	Traffic Safety Barriers	<u>Functionality:</u> Functioning of Safety Barriers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015
	End Treatment of Traffic Safety Barriers	<u>Functionality:</u> Functioning of End Treatment as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014, IRC:119-2015
	Attenuators	<u>Functionality:</u> Functioning of Attenuators as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:2014, IRC:119-2015
	Guard Posts and Delineators	<u>Functionality:</u> Functioning of Guard Posts and Delineators as intended	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC: 79 - 1981
	Overhead Sign Structure	Overhead sign structure shall be structurally adequate	Daily	Visual with video/image backup	Rectification	Within 15 days	IRC:67-2012
	Traffic Blinkers	<u>Functionality:</u> Functioning of Traffic Blinkers as intended	Daily	Visual with video/image backup	Rectification	Within 7 days	IRC:SP:84-2014
<b>Highway Lighting</b>	Highway Lights	Illumination: Minimum 40 Lux illumination on the road	Daily	The illumination level shall be	Improvement in Lighting System	24 hours	IRC:SP:84-2014



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
System		surface		measured with luxmeter			
		No major failure in the lighting system	Daily	-	Rectification of failure	24 hours	IRC:SP:84-2014
		No minor failure in the lighting system	Monthly	-	Rectification of failure	8 hours	IRC:SP:84-2014
	Toll Plaza Canopy Lights	Minimum 40 Lux illumination on the road surface	Daily	The illumination level shall be measured with luxmeter	Improvement in Lighting System	24 hours	IRC:SP:84-2014
		No major/minor failure in the lighting system	Daily	-	Rectification of failure	8 hours	IRC:SP:84-2014
Trees and Plantation including median plantation	Obstruction in a minimum head-room of 5.5 m above carriageway or obstruction in visibility of road signs	No obstruction due to trees	Monthly	Visual with video/image backup	Removal of trees	Immediate	IRC:SP:84-2014
		Deterioration in health of trees and bushes	Health of plantation shall be as per requirement of specifications & instructions issued by Authority from time to time	Daily	Visual with video/image backup	Timely watering and treatment. Or Replacement of Trees and Bushes.	Within 90 days
	Vegetation affecting sight line and road structures	Sight line shall be free from obstruction by vegetation	Daily	Visual with video/image backup	Removal of Trees	Immediate	IRC:SP 84-2014



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
Rest Areas	Cleaning of toilets	-	Daily	-	-	Every 4 hours	
	Defects in electrical, water and sanitary installations	-	Daily	-	Rectification	24 hours	
Other Project Facilities and Approach roads	Damage or deterioration in Approach Roads, pedestrian facilities, truck lay-bys, bus-bays, bus- shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts and other works		Daily	-	Rectification	15 days	IRC:SP 84-2014

**Table 4: Maintenance Criteria for Structures and Culverts:**

Pipe/box/ slab culverts	Free waterway/ unobstructed flow section	85% of culvert normal flow area to available.	2 times in a year (before and after rainy season)	Inspection by Bridge Engineer as per IRC SP: 35-1990 and recording of depth of silting and area of vegetation.	Cleaning silt up soils and debris in culvert barrel after rainy season, removal of bushes and vegetation, U/s of barrel, under barrel and D/s of barrel before rainy season.	15 days before onset of monsoon and within 30 days after end of rainy season.	IRC 5-2015, IRC SP:40-1993 and IRC SP:13-2004
	Leak-proof expansion joints if any	No leakage through expansion joints	Bi-Annually	Physical inspection of expansion joints as per IRC SP: 35-1990 if any, for leakage strains on walls at joints.	Fixing with sealant suitably	30 days or before onset of rains whichever comes earlier	IRC SP:40-1993 and IRC SP:69-2011
	Structurally sound	Spalling of concrete not more than 0.25 sqm	Bi-Annually	Detailed inspection of all components of	Repairs to spalling, cracking, delamination,	15 days	IRC SP 40-1993 and MORTH Specifications



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
		Delamination of concrete not more than 0.25 sq.m.		culvert as per IRC SP:35-1990 and recording the defects	rusting shall be followed as per IRC: SP: 40-1993.		clause 2800
		Cracks wider than 0.3 mm not more than 1m aggregate length					
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sqm, damage to solid apron (concrete apron) not more than 1 sqm	2 times in a year (before and after rainy season)	Condition survey as per IRC SP:35-1990	Repairs to damaged aprons and pitching	30 days after defect observation or 2 weeks before onset of rainy season whichever is earlier.	IRC: SP 40-1993 and IRC:SP:13-2004.
<b>Bridges including ROBs Flyover etc. as applicable</b>	Riding quality or user comfort	No pothole in wearing coat on bridge deck	Daily	Visual inspection as per IRC SP:35-1990	Repairs to BC or wearing coat	15 days	MORT&H Specification 2811
<b>Bridge - Super Structure</b>	Bumps	No bump at expansion joint	Daily	Visual inspection as per IRC SP:35-1990	Repairs to BC on either side of expansion joints, profile correction course on approach slab in case of settlement to approach embankment	15 days	MORT&H Specification 3004.2 & 2811.
	User safety (condition of crash barrier and guard rail)	No damaged or missing stretch of crash barrier or pedestrian hand railing	Daily	Visual inspection and detailed condition survey as per IRC SP: 35-1990.	Repairs and replacement of safety barriers as the case may be	3days	IRC: 5-1998, IRC SP: 84-2014 and IRC SP: 40-1993.
	Rusted reinforcement	Not more than 0.25 sqm	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using	All the corroded reinforcement shall need to be thoroughly	15 days	IRC SP: 40-1993 and MORTH Specification



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Spalling of concrete	Not more than 0.50 sqm	Bi-Annually	Mobile Bridge Inspection Unit	cleaned from rusting and applied with anti-corrosive coating before carrying out the repairs to affected concrete portion with epoxy mortar / concrete.		1600.
	Delamination	Not more than 0.50 sq.m					
	Cracks wider than 0.30 mm	Not more than 1m total length					
	Rainwater seepage through deck slab	Leakage - nil	Quarterly	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	Grouting of deck slab at leakage areas, waterproofing, repairs to drainage spouts	1 months	MORTH specifications 2600 & 2700.
	Deflection due to permanent loads and live loads	Within design limits.	Once in every 10 years for spans more than 40 m	Load test method	Carry out major rehabilitation works on bridge to retain original design loads capacity	6 months	IRC SP: 51-1999.
	Vibrations in bridge deck due to moving trucks	Frequency of vibrations shall not be more than 5 Hz	Once in every 5 years for spans more than 30m and every 10 years for spans between 15 to 30 m	Laser displacement sensors or laser vibro-meters	Strengthening of super structure	4 months	AASHTO LRFD specifications



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
	Leakage in Expansion joints	No damage to elastomeric sealant compound in strip seal expansion joint, no leakage of rain water through expansion joint in case of buried and asphalt plug and copper strip joint.	Bi-Annually	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Replace of seal in expansion joint	15 days	MORTH specifications 2600 and IRC SP: 40-1993.
	Debris and dust in strip seal expansion joint	No dust or debris in expansion joint gap.	Monthly	Detailed condition survey as per IRC SP:35-1990 using Mobile Bridge Inspection Unit	Cleaning of expansion joint gaps thoroughly	3 days	MORTH specifications 2600 and IRC SP: 40-1993.
	Drainage spouts	No down take pipe missing/broken below soffit of the deck slab. No silt, debris, clogging of drainage spout collection chamber.	Monthly	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	Cleaning of drainage spouts thoroughly. Replacement of missing/broken down take pipes with a minimum pipe extension of 500mm below soffit of slab. Providing sealant around the drainage spout if any leakages observed.	3 days	MORTH specification 2700.
<b>Bridge-substructure</b>	Cracks/spalling of concrete/rusted steel	No cracks, spalling of concrete and rusted steel	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	All the corroded reinforcement shall need to be thoroughly cleaned from rusting and applied with anti-corrosive coating before carrying out repairs to substructure by	30 days	IRC SP: 40-1993 and MORTH specification 2800.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



### Technical Schedule

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
					grouting/guniting and micro concreting depending on type of defect noticed		
	Bearings	Delamination of bearing reinforcement not more than 5%, cracking or tearing of rubber not more than 2 locations per side, no rupture of reinforcement or rubber	Bi-Annually	Detailed condition survey as per IRC SP: 35-1990 using Mobile Bridge Inspection Unit	In case of failure of even one bearing on any pier/abutment, all the bearings on that pier/abutment shall be replaced, in order to get uniform load transfer on to bearings.	3 months	MORTH specification 2810 and IRC SP: 40-199.
<b>Bridge Foundations</b>	Scouring around foundations	Scouring shall not be lower than maximum scour level for the bridge	Bi-Annually	Condition survey and visual inspection as per IRC SP:35-1990 using Mobile Bridge Inspection Unit. In case of doubt, use Underwater camera for inspection of deep wells in major Rivers.	Suitable protection works around pier/abutment	1 month	IRC SP: 40-1993, IRC 83-2014, MORTH specification 2500
	Protection works in good condition	Damaged of rough stone apron or bank revetment not more than 3 sq.m, damage to solid apron (concrete apron) not more than 1 sq.m	2 times in a year (before and after rainy season)	Condition survey as per IRC SP:35-1990	Repairs to damaged aprons and pitching.	30 days after defect observation or 2 weeks before onset of rainy season whichever is earlier.	IRC: SP 40-1993 and IRC:SP:13-2004.

Schedule E



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.

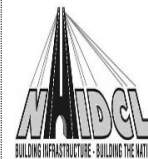


#### Technical Schedule

Asset Type	Performance Parameter	Level of Service (LOS)	Frequency of Measurement	Testing Method	Recommended Remedial measures	Time limit for Rectification	Specifications and Standards
<b>Note:</b> Any Structure during the entire contract period which is found that does not complies with all requirements of this Table will be prepared, rehabilitated or even reconstructed under the scope of the contractor.							



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**Table 5: Maintenance Criteria for Hill Roads**

In addition to above, for hill roads the following provision for maintenance is also to done.

<b>Hill Roads</b>		
<b>(i)</b>	Damage to Retaining wall/ Breast wall	<b>7 (Seven) days</b>
<b>(ii)</b>	Landslides requiring clearance	<b>12 (Twelve) hours</b>
<b>(iii)</b>	Snow requiring clearance	<b>24 (Twenty-Four) hours</b>

**Note: For all tables 1 to 5 above, latest BIS & IRC standards (even those not indicated herewith) along with MoRTH specifications shall be binding for all maintenance activities.**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**A. Flexible Pavement**

Nature of Defect or deficiency		Time limit for repair/ rectification
<b>(b) Granular earth shoulders, side slopes, drains and culverts</b>		
(i)	Variation by more than 1 % in the prescribed slope of camber/cross fall (shall not be less than the camber on the main carriageway)	7 (seven) days
(ii)	Edge drop at shoulders exceeding 40 mm	7 (seven) days
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (seven) days
(v)	Damage to or silting of culverts and side	7 (seven) days
(vi)	Desilting of drains in urban/semi- urban areas	24 (twenty four) hours
(vii)	Railing, parapets, crash barriers	7 (seven) days (Restore immediately if causing safety hazard)
<b>(c) Road side furniture including road sign and pavement marking</b>		
(i)	Damage to shape or position, poor visibility or loss of retro- reflectivity	48 (forty eight) hours
(ii)	Painting of km stone, railing, parapets, crash barriers	As and when required/ Once every year
(iii)	Damaged/missing signs road requiring replacement	7 (seven) days
(iv)	Damage to road mark ups	7 (seven) days
<b>(d) Road lighting</b>		
(i)	Any major failure of the system	24 (twenty four) hours
(ii)	Faults and minor failures	8 (eight) hours
<b>(e) Trees and plantation</b>		
(i)	Obstruction in a minimum head- room of 5 m above carriageway or obstruction in visibility of road signs	24 (twenty four) hours
(ii)	Removal of fallen trees from carriageway	4 (four) hours
(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (thirty) days
(v)	Removal of vegetation affecting sight line and road structures	15 (fifteen) days
<b>(f) Rest area</b>		
(i)	Cleaning of toilets	Every 4 (four) hours



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

<b>Nature of Defect or deficiency</b>		<b>Time limit for repair/ rectification</b>
(ii)	Defects in electrical, water and sanitary installations	24 (twenty four) hours
<b>(g)</b>	<b>[Toll Plaza]</b>	
<b>(h)</b>	<b>Other Project Facilities and Approach roads</b>	
(i)	Damage in approach roads, pedestrian facilities, truck lay- byes, bus-bays, bus-shelters, cattle crossings, [Traffic Aid Posts, Medical Aid Posts] and service roads	15 (fifteen) days
(ii)	Damaged vehicles or debris on the road	4 (four) hours
(iii)	Malfunctioning of the mobile crane	4 (four) hours
<b>Bridges</b>		
<b>(a)</b>	<b>Superstructure</b>	
(i)	Any damage, cracks, spalling/ scaling Temporary measures	within 48 (forty eight) hours
	Permanent measures	within 15 (fifteen) days or as specified by the Authority's Engineer
<b>(b)</b>	<b>Foundations</b>	
(i)	Scouring and/or cavitation	15 (fifteen) days
<b>(c)</b>	<b>Piers, abutments, return walls and wing walls</b>	
(i)	Cracks and damages including settlement and tilting, spalling, scaling	30 (thirty) days
<b>(d)</b>	<b>Bearings (metallic) of bridges</b>	
(i)	Deformation, damages, tilting or shifting of bearings	15 (fifteen) days Greasing of metallic bearings once in a year
<b>(e)</b>	<b>Joints</b>	
(i)	Malfunctioning of joints	15 (fifteen) days
<b>(f)</b>	<b>Other items</b>	
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days (immediately within 24 hours if posing danger to safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days
(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

<b>Nature of Defect or deficiency</b>		<b>Time limit for repair/ rectification</b>
<b>(g)</b>	<b>Hill Roads</b>	
(i)	Damage to retaining wall/breast wall	7 (seven) days
(ii)	Landslides requiring clearance	12 (twelve) hours
(iii)	Snow requiring clearance	24 (twenty four) hours

[Note: Where necessary, the Authority may modify the time limit for repair/rectification, or add to the nature of Defect or deficiency before issuing the bidding document, with the approval of the competent authority.]

# ***Schedule-F***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-F

(See Clause 4.1 (vii)(a))

### Applicable Permits

#### 1 Applicable Permits

- i. The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:
  - (a) Permission of the State Government for extraction of boulders from quarry;
  - (b) Permission of Village Panchayat and Pollution Control Board for installation of crushers;
  - (c) License for use of explosives;
  - (d) Permission of the State Government for drawing water from river/reservoir;
  - (e) License from inspector of factories or other competent Authority for setting up batching plant;
  - (f) Clearance of Pollution Control Board for setting up batching plant;
  - (g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;
  - (h) Permission of Village Panchayats and State Government for borrow earth; and
  - (i) Any other permits, clearances or approvals required under Applicable Laws.
- ii. Applicable permits, as required, relating to environmental protection and conservation shall have been produced by the Authority in accordance with the provisions of this Agreement

# ***Schedule-G***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-G

(See Clauses 7.1 and 19.2)

### Annex-I : Form of Bank Guarantee

(See Clause 7.1)

#### [Performance Security /Additional Performance Security]

To

National Highways & Infrastructural Development Corporation Limited  
PTI Building, 3rd Floor, 4, Parliament Street  
New Delhi – 110001

WHEREAS \_\_\_\_\_ [name and address of Contractor] (hereafter called the “Contractor”) has undertaken, in pursuance of Letter of Acceptance (LOA) No. Dated\_ for construction of [name of the Project] (hereinafter called the “Contract”)

AND WHEREAS the Contract requires the Contractor to furnish an {Performance Security/ Additional Performance Security} for due and faithful performance of its obligations, under and in accordance with the Contract, during the {Construction Period/ Defects Liability Period and Maintenance Period} in a sum of Rs..... cr. (Rupees ..... crore) (the “**Guarantee Amount**”<sup>1</sup>).

AND WHEREAS we, ..... through our branch at ..... (the “**Bank**”) have agreed to furnish this Bank Guarantee (hereinafter called the “**Guarantee**”) by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Contractor’s obligations during the {Construction Period/ Defects Liability Period and Maintenance Period} under and in accordance with the Contract, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

<sup>1</sup> Guarantee Amount for Performance Security and Additional Performance Security shall be calculated as per Contract.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

2. A letter from the Authority, under the hand of an officer not below the rank of [General Manager of National Highways & Infrastructure Development Corporation Limited], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Contract shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Contract and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever.
3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Contractor contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Contract.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

8. The Guarantee shall cease to be in force and effect on \*\*\*\*\$. Unless a demand or claim under this Guarantee is made in writing before expiry of the Guarantee, the Bank shall be discharged from its liabilities hereunder.
9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Contract.
12. This guarantee shall also be operable at our.....Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
13. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of NHIDCL, details of which is as under:

<sup>§</sup>Insert date atleast 2 (two) years from the date of issuance of this Guarantee (in accordance with Clause 2.21 of the RFP). The Contractors can submit the BG for periods of two years at one time and keep on renewing the same till the DLP is over if they have problems in getting the BG in one go for the entire DLP.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch IFSC	CNRB0019062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Canara Bank (erstwhile Syndicate Bank) transport Bhawan, 1st Parliament Street, New Delhi-110001

Signed and sealed this ..... day of ....., 20..... at .....

SIGNED, SEALED AND DELIVERED  
For and on behalf of the Bank by:  
(Signature)  
(Name)  
(Designation)  
(Code Number)  
(Address)

**NOTES:**

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

**Annex - II**  
(Schedule - G)  
(See Clause 19.2)

**Annex – II: Form for Guarantee for Advance Payment**

To

National Highways & Infrastructural Development Corporation Limited  
PTI Building, 3rd Floor, 4, Parliament Street  
New Delhi – 110001

WHEREAS:

- (A) [name and address of contractor] (hereinafter called the "**Contractor**") has executed an agreement (hereinafter called the "**Agreement**") with the [name and address of the authority], (hereinafter called the "**Authority**") for the construction of the \*\*\*\*\* section of [National Highway No. \*\*] on Engineering, Procurement and Construction (the "**EPC**") basis, subject to and in accordance with the provisions of the Agreement
- (B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called "**Advance Payment**") equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} installment of the Advance Payment is Rs. \_\_\_\_\_ cr. (Rupees \_\_\_\_\_ crore) and the amount of this Guarantee is Rs. \_\_\_\_\_ cr. (Rupees \_\_\_\_\_ crore) (the "**Guarantee Amount**")<sup>2</sup>.
- (C) We, through our branch at (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") for the Guarantee Amount.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful repayment on time of the aforesaid instalment of the Advance Payment under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Contractor, such sum or sums up to an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

<sup>2</sup> The Guarantee Amount should be equivalent to 110% of the value of the applicable instalment



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

A letter from the Authority, under the hand of an officer not below the rank of [General Manager in National Highways & Infrastructure Development Corporation Limited], that the Contractor has committed default in the due and faithful performance of all or any of its obligations for the repayment of the instalment of the Advance Payment under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final and binding on the Bank, notwithstanding any differences between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Contractor for any reason whatsoever

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.
4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.
6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

7. The Guarantee shall cease to be in force and effect on \*\*\*\*<sup>3</sup> Unless a demand or claim under this Guarantee is made in writing on or before the aforesaid date, the Bank shall be discharged from its liabilities hereunder.
8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
10. This Guarantee shall come into force with immediate effect and shall remain in force and effect up to the date specified in paragraph 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
11. This guarantee shall also be operatable at our.....Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension / renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
12. The guarantor/bank hereby confirms that it is on the SFMS (Structural Finance Messaging System) platform & shall invariably send an advice of this Bank Guarantee to the designated bank of NHIDCL, details of which is as under:

S.No.	Particulars	Details
1	Name of Beneficiary	RO NHIDCL PROJECTS
2	Beneficiary Bank Account No.	7365321000013
3	Beneficiary Bank Branch IFSC	Canara Bank [IFSC : CNRB0017365]
4	Beneficiary Bank Branch Name	Dispur, Guwahati
5	Beneficiary Bank Address	Upasana Complex, Dr. R. P. Road, Ganeshguri, Dispur, Guwahati

Signed and sealed this ..... day of... , 20 ..... at

<sup>3</sup> Insert a date being 90 (ninety) days after the end of one year from the date of payment of the Advance payment to the Contractor (in accordance with Clause 19.2 of the Agreement).



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**SIGNED, SEALED AND DELIVERED**

For and on behalf of the Bank by:  
(Signature)

(Name)

(Designation)

(Code Number)

(Address)

**NOTES:**

- (i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.
- (ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter on the covering letter of issuing branch.

# ***Schedule-H***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-H

(See Clauses 10.1 (iv) and 19.3)

### 1 Contract Price Weightages

- 1.1 The Contract Price for this Agreement is ₹ ..... /-
- 1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
1	Road works including culverts, widening and repair of culverts.	38.51%	<b>A - Widening and strengthening of existing road</b>	
			(1) Earthwork upto Subgrade top	20.62%
			(2) Sub-Base course	11.82%
			(3) Non bituminous base course	9.67%
			(4) Bituminous base course	5.37%
			(5) Wearing coat	3.18%
			(6) widening and repair of culverts	
			<b>B.1 - Reconstruction/ New 2/4-lane realignment/bypass (Flexible pavement)</b>	
			(1) Earthwork upto Subgrade top	10.62%
			(2) Sub-Base course	6.09%
			(3) Non bituminous base course	4.98%
			(4) Bituminous base	2.77%
			(5) Wearing coat	1.64%
			<b>B.2 - Reconstruction/ New 2/4-lane realignment/bypass (Rigid Pavement)</b>	
			(1) Earthwork upto Subgrade top	
			(2) Sub-Base course	
			(3) Dry lean concrete (DLC)	
			(4) Pavement quality concrete (PQC) course	
			<b>C.1 - Reconstruction/ New Service Road (flexible Pavement)</b>	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(1) Earthwork upto Subgrade top	1.25%
			(2) Sub-Base course	3.22%
			(3) Non bituminous base course	4.66%
			(4) Bituminous base course	2.87%
			(5) wearing coat	1.42%
			<b>C.2 - Reconstruction/ New Service Road (Rigid Pavement)</b>	
			(1) Earthwork upto Subgrade top	
			(2) Sub-Base course	
			(3) Dry lean concrete (DLC)	
			(4) Pavement quality concrete (PQC) course	
			<b>D. - Reconstruction/ New culverts on existing road and realignments, bypasses</b>	9.82%
2	Minor Bridges/ Underpasses/ Overpasses	11.06%	<b>A.1 - Widening and repairs of Minor Bridges</b>	
			Widening of existing bridges	
			Rehabilitation of existing bridges	
			<b>A.2 - New of Minor Bridges</b>	
			(1) Foundation: (on completion of the foundation work including foundation for wing wall, return wall, abutments, piers.	7.47%
			(2) Sub-structure: (on completion of abutments, piers upto abutment/pier cap.)	10.64%
			(3) Super-structure (on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. completion in all respect)	16.73%
			(4) Approaches (on completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	6.94%
			(5) Guide Bunds and River Training works: (On completion of Guide Bunds and river training works complete in all	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			respects.)	
			<b>B.1 - Widening and repairs of Underpasses/Overpasses</b>	
			<b>B.2 - New Underpasses/Overpasses</b>	
			(1) Foundation: on completion of the foundation work including foundation for wing wall, return wall, abutments, piers.	3.41%
			(2) Sub-structure: on completion of abutments, piers upto the abutment/pier cap	2.18%
			(3) Super-structure: on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. completion in all respect.	7.96%
			(4) Approaches: on completion of approaches including RE wall, retaining walls stone pitching, protection works complete in all respect and fit for use.	44.67%
<b>3</b>	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any	29.94%	<b>A.1 - Widening and repairs of existing major bridges</b>	
			(1) Foundation	
			(2) Sub structure	
			(3) Superstructure (incl. bearing)	
			(4) Wearing coat (incl. expansion joint)	
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	
			(6) Wing walls / Return walls	
			(7) Guide bunds, river training works etc.	
			(8) Approaches (including retaining walls, stone pitching, protection works).	
			<b>A.2 - New/ Reconstruction major bridges</b>	
			(1) Foundation	20.43%



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(2) Sub structure	2.04%
			(3) Superstructure (including bearing)	
			(a) casting of girder	17.44%
			(b) casting of segments	
			(C) erection of girder	26.16%
			(4) Other ancillary works: wearing coat, including expansion joint, hand rails, crash barriers, tests on completion in all respect.	2.25%
			(5) Miscellaneous works: stone pitching, protection works excluding retaining/ reinforced earth wall etc.	0.56%
			(6) wing walls/return walls upto full height	0.11%
			(7) Guide bunds, river training works etc.	0.85%
	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any		(8) Retaining wall/ Reinforced earth wall etc.	
			(8.a) Panel casting	
			(8.b) Erection of panel/ construction of retaining wall	
			<b>B.1 - Widening and repairs of (a) ROB and (b) RUB</b>	
			(1) Foundation	
			(2) Sub structure	
			(3) Superstructure (including bearing)	
			(4) wearing coat: (a) in case of ROB - wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB - rigid pavement under RUB including drainage facility complete in all respect as specified.	
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	
			(6) wing walls/return walls	
		(7) Approaches (including retaining walls, stone pitching, protection works).		



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			<b>B.2 - New ROB / RUB</b>	
			(1) Foundation	
			(2) Sub structure	
			(3) Superstructure (including bearing)	
			(a) casting of girder	
			(b) casting of segments	
			(c) erection of girder	
			(4) Other ancillary works: wearing coat, expansion joint, hand railing, crash barriers tests on completion etc. completion in all respect.	
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	
			(6) wing walls/return walls upto full height	
			(7) Retaining wall/ Reinforced earth wall etc.	
			(7.a) RE wall Panel casting	
			(7.b) Erection of RE wall panel/ construction of retaining wall	
			<b>C.1 - Widening and repairs of Elevated section/Flyover/Grade Separators</b>	
			(1) Foundation	
			(2) Sub structure	
			(3) Superstructure (including bearing)	
			(4) wearing coat including expansion joint	
			(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	
			(6) wing walls/return walls	
			(7) Approaches (including retaining walls/ Reinforced earth walls, stone pitching, protection works).	
			<b>C.2 - New Elevated section/Flyover/Grade Separators</b>	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage	
	1	2	3	4	
			(1) Foundation	2.27%	
			(2) Sub structure	0.67%	
	Major Bridge works and ROB/RUB/elevated sections/flyovers including viaducts, if any		(3) Superstructure: including girder, deck slab, bearing (excluding wearing coat and expansion joints)		
				(a) casting of girder	1.84%
				(b) casting of segments	
				(c) erection of girder	2.76%
				(4) Other ancillary works: wearing coat, expansion joint, hand railing, crash barriers tests on completion etc. completion in all respect.	0.64%
				(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.16%
				(6) wing walls/return walls upto full height	
				(7) Retaining wall/ Reinforced earth wall etc.	
				(7.a) Panel casting	10.91%
				(7.b) Erection of panel/ construction of retaining wall	10.91%
4	Other works	17.16%	(i) Toll plaza including it's approach	5.96%	
				(ii) Road side drains	17.43%
				(iii) Road signs, markings, km stones, safety devices etc.	25.39%
				(iv) Project facilities	
				(a) Bus Bay with Bus Shelter	7.58%
				(b) Truck laybys	5.89%
				(c) Rest area	4.80%
				(d) others to specified	
				(i) Street light	2.27%
				(iii) Utility ducts	1.56%
				(iv) Advance Traffic management system	3.98%
		(v) Rainwater harvesting			



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

S. no.	Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
	1	2	3	4
			(vi) Junction improvement	6.18%
			(v) Road side plantation	1.35%
			(vi) Repair of Protection works other than approaches to the bridges, elevated sections, flyovers/ grade separators and ROBs/RUBs.	
			(vii) Protection works - - retaining wall / toe wall, breast wall etc.	13.59%
			(viii) Safety and traffic management during construction	0.17%
			(ix) Side Slope Protection works Turfing and stone pitching	3.85%
5	Electrical utilities and public Health Utilities (Water pipe lines and sewage lines)	3.33%	(i) EHT line	
			(ii) EHT crossings	
			(iii) HT/ LT line (including Transformers if any)	49.45%
			(iv) HT/ LT line crossing	40.75%
			(v) Water pipeline	9.80%
			(vi) Water pipeline crossings	
			(vii) Sewage lines	
			(viii) Sewage line crossings	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

1.3 Procedure of estimating the value of work done.

1.3.1 Road works

Procedure for estimating the value of road work done shall be as follows:

**Table 1.3.1**

Stage of Payment	Percentage -weightage	Payment Procedure
<b>A - Widening and strengthening of existing road</b>		
(1) Earthwork upto top of the Subgrade including excavation in Soil, soft rock and hard rock, removal of unserviceable soil etc.	20.62%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m.
(2) Sub-Base course	11.82%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non bituminous base course	9.67%	
(4) Bituminous base course	5.37%	
(5) wearing coat	3.18%	
(6) widening and repair of culverts		
<b>B.1 - Reconstruction/ New 2/4-lane realignment/bypass (Flexible pavement)</b>		
(1) Earthwork upto top of the Subgrade including excavation in Soil, soft rock and hard rock, removal of unserviceable soil etc.	10.62%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m.
(2) Sub-Base course	6.09%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non bituminous base course	4.98%	
(4) Bituminous base course	2.77%	
(5) wearing coat	1.64%	



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of Payment	Percentage -weightage	Payment Procedure
<b>B.2 - Reconstruction/ New 2/4-lane realignment/bypass (Rigid Pavement)</b>		
(1) Earthwork upto top of the Subgrade including excavation in Soil, soft rock and hard rock, removal of unserviceable soil etc.		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m.
(2) Sub-Base course		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Dry lean concrete (DLC)		
(4) Pavement quality concrete (PQC) course		
<b>C.1 - Reconstruction/ New Service road/ Slip Road (flexible Pavement)</b>		
(1) Earthwork upto top of the Subgrade including Shoulder	1.25%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m.
(2) Subbase course	3.22%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(3) Non bituminous base course	4.66%	
(4) Bituminous base course	2.87%	
(5) wearing coat	1.42%	
<b>C.2 - Reconstruction/ New Service road/ Slip road (Rigid Pavement)</b>		
(1) Earthwork upto top of the Subgrade		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500m.
(2) Sub-Base course		Unit of measurement is linear length.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of Payment	Percentage -weightage	Payment Procedure
(3) Dry lean concrete (DLC)		Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 500 m.
(4) Pavement quality concrete (PQC) course		
<b>D. - Reconstruction/ New culverts on existing road, Realignments, bypasses:</b>	9.82%	Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least one culvert.

@. For example, if the total length of bituminous work to be done is 100 km, the cost per km of bituminous work shall be determined as follows:

$$\text{Cost per km} = P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$$

Where P= Contract Price. And L = Total length in km.

Similarly, the rates per km for other stages shall be worked out accordingly.

**Note: The length affected due to law-and-order problems or litigation during execution due to which the Contractor is unable to execute the work, may be deducted from the total project length for payment purposes. The total length calculated here is only for payment purposes and will not affect and referred in other clauses of the Contract Agreement.**

**1.3.2 Minor Bridges and Underpasses/Overpasses.**

Procedure for estimating the value of Minor Bridge and underpasses/Overpasses shall be as stated in table 1.3.2:

**Table1.3.2**

Stage of Payment	Weightage	Payment Procedure
<b>A.1 - Widening and repairs of Minor Bridges</b>		Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair works of a minor bridge.
Widening of existing bridges		
rehabilitation of existing bridges		
<b>A.2 - New of Minor Bridges</b>		
(1) Foundation: on completion of the foundation work including foundation for wing wall, return wall, abutments, piers.	7.47%	(1) Foundation: Payment against foundation shall be made on prorata basis on completion of at least two foundations. In case where load testing is required for foundation, trigger of first payment shall include load testing also where specified.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of Payment	Weightage	Payment Procedure
(2) Sub-structure: on completion of abutments, piers upto abutment/pier cap.	10.64%	(2) Substructure: Payment against substructure shall be made on prorata basis on completion of at least two substructures upto abutment/pier cap level of each bridges.
(3) Super-structure: on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. completion in all respect.	16.73%	(3) Super structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of Stage payment in this sub clause.
(4) Approaches: on completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	6.94%	(4) Approaches: Payment shall be made on prorata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "stage Payment" in this sub clause.
(5) Guide Bunds and River Training works: On completion of Guide Bunds and river training works complete in all respects.		(5) Guide bunds and river training works: Payment shall be made on prorata basis on completion of a stage i.e. completion of guide bunds and river training works in all respect as specified.
<b>B.1 - Widening and repairs of Underpasses/Overpasses</b>		Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length of the underpass/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpasses.
<b>B.2 - New Underpasses/Overpasses</b>		
(1) Foundation: on completion of the foundation work including foundation for wing wall, return wall, abutments, piers.	3.41%	(1) Foundation: Payment against foundation shall be made on prorata basis on completion of at least two foundations. In case where load testing is required for foundation, trigger of first payment shall include load testing also where specified.
(2) Sub-structure: on completion of abutments, piers upto the abutment/pier cap	2.18%	(2) Substructure: Payment against substructure shall be made on prorata basis on completion of at least two substructures upto abutment/pier cap level of each underpass/overpass.
(3) Super-structure: on completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barrier road sign, & marking, tests on completion etc. completion in all respect)	7.96%	(3) Super structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of Stage payment in this sub clause.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of Payment	Weightage	Payment Procedure
(4) Approaches: on completion of approaches including RE wall, retaining walls/ Reinforced earth wall, stone pitching, protection works complete in all respect and fit for use.	44.67%	(4) Approaches: Payment shall be made on prorata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "stage Payment" in this sub clause.

**1.3.3 Major Bridge works, ROB/RUB and Structures**

Procedure for estimating the value of major Bridge works, ROB/RUB and structure work shall be as stated in table 1.3.3

**Table 1.3.3**

Stage of payment	Weightage	Payment procedure
<b>A.1 - Widening and repairs of existing major bridges</b>		
(1) Foundation		(1) Foundation: Cost of each major bridge shall be determined on pro rata basis with respect to the total linear length (m) of the major bridges. Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major bridge subject to completion of at least two foundations of the majorbridge. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure		(2) Sub structure: Payment against sub-structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the major bridge subject to completion of at least two substructures of abutment/piers upto abutment/piers cap level of the major bridge.
(3) Superstructure (including bearing)		(3) Super structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings of at least one span in all respects as specified.
(4) wearing coat (including expansion joint)		(4) wearing coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)		(5) Miscellaneous: Payment shall be made on completion of all miscellaneous works like hand rail, crash barrier, road markings, etc. complete in all respects as specified.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(6) wing walls/return walls upto top		(6) wing wall/ return wall: Payment shall be made on completion of wing wall/return wall complete in all respects as specified.
(7) Guide bunds, river training works etc.		(7) Guide bund, River training works: Payment shall be made on completion of all guide bunds/ river training works etc.complete in all respect as specified.
(8) Approaches (including retaining walls, stone pitching, protection works).		(8) Approaches: Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
<b>A.2 - New/ Reconstruction major bridges</b>		Cost of each structure shall be determined on prorata basis with respect to the total linear length (m) of all the structures. Payments shall be made on completion of each stage of structures as per weightage given in this table.
(1) Foundation: foundation of abutment/piers	20.43%	(1) Foundation: Payment against foundation shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of a bridge as per weightage given in this table, subject to completion of at least two foundations in all respect. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure: Substructure for abutment, piers upto the abutment/pier cap level.	2.04%	(2) Substructure: Payment against sub structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of a bridge as per weightage given in this table,subject to completion of at least two substructure of abutment/piers upto abutment/piers cap level of a bridge.
(3) Superstructure: including girder, deck slab, bearings (excluding wearing coat and expansion joints)		
(3.a) Super Structure: Casting of girder/ fabrication of girders (steel)	17.44%	(a) Super structure (casting of girder): Unit of measurement is number. Payment against casting of girder shall be made on prorata basis with respect to total number of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(3.b) Super structure: casting of segments		(b) Super structure (casting of segment): Unit of measurement is number. Payment against casting of segments shall be made on prorata basis with respect to total number of segments required in the structure on completion of a stage i.e. not less than completion of casting of at least 10 (ten) segments of the structure.
(3.c) Super structure: erection of girder, deck slab and bearings	26.16%	(c) Super structure (erection of girders, deck slab and bearing): Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings at least one span in all respect as specified.
(4) Other ancillary works: wearing coat, including expansion joint, hand rails, crash barriers, tests on completion in all respect.	2.25%	(4) Other ancillary work: Payment shall be made on prorata basis on completion of the stage in all respect as specified, for each structure.
(5) Miscellaneous works: stone pitching, protection works excluding retaining/ reinforced earth wall etc.	0.56%	(5) Miscellaneous works: Payment shall be made on prorata basis on completion of the stage in all respects as specified, for each structure.
(6) wing walls/return walls upto full height	0.11%	(6) Wing wall/ return wall: Payment shall be made on completion of wing wall/return walls for a bridge as per weightage given in this table complete in all respects as specified.
(7) Guide bunds, river training works etc. - for the protection of existing bank of Barak River	0.85%	(7) Guid bund, river training works: Payment shall be made on onprorata basis on completion of the stages in all respect as specified.
(8) Retaining wall/ Reinforced earth wall etc.		Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
(8.a) Panel casting		(a) Panel casting: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of the scope of RE wall panel of each bridge.
(8.b) Erection of panel/ construction of retaining wall		(b) Erection of panel/ Construction of retaining wall: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis on completion of a stage i.e. completion of erection of panels/ construction of retaining wall complete in all respect for at least 25% scope of work for each structure.
<b>B.1 - Widening and repairs of (a) ROB and (b) RUB</b>		



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(1) Foundation		(1) Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUBs. Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB subject to completion of at least two foundations of the ROB/RUB. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure		(2) Substructure: Payment against sub-structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the ROB/RUB subject to completion of at least two substructure of abutment/piers upto abutment/piers cap level of the ROB/RUB.
(3) Superstructure (including bearing)		(3) Super structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings of at least one span in all respects as specified.
(4) wearing coat : (a) in case of ROB - wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB - rigid pavement under RUB including drainage facility complete in all respect as specified.		(4) wearing coat: Payment shall be made on completion of (a) in case of ROB - wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB - rigid pavement under RUB including drainage facility complete in all respect as specified.
(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)		(5) Miscellaneous: Payment shall be made on completion of all miscellaneous works like hand rail, crash barrier, road markings, etc. complete in all respects as specified.
(6) wing walls/return walls		(6) Wing wall/return wall: Payment shall be made on completion of wing wall/return wall complete in all respects as specified.
(7) Approaches (including retaining walls, stone pitching, protection works).		(7) Approaches: Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
<b>B.2 - New ROB / RUB</b>		Cost of each structure shall be determined on prorata basis with respect to the total linear length (m) of all the structures. Payments shall be made on completion of each stage of structures as per weightage given in this table.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(1) Foundation: foundation of abutment/piers		(1) Foundation: Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB as per weightage given in this table, subject to completion of at least two foundations of the ROB/RUB in all respect. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure: Substructure for abutment, piers upto the abutment/pier cap level.		(2) Substructure: Payment against sub-structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the ROB/RUB as per weightage given in tis table, subject to completion of at least two substructures of abutment/piers upto abutment/piers cap level of the ROB/RUB.
(3) Superstructure: including girder, deck slab, bearing (excluding wearing coat and expansion joints)		
(3.a) Super Structure: Casting of girder/ fabrication of girders (steel)		(a) Super structure (casting of girder): Unit of measurement is number. Payment against casting of girder shall be made on prorata basis with respect to total number of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.
(3.b) Super structure: casting of segments		(b) Super structure (casting of segment): Unit of measurement is number. Payment against casting of segments shall be made on prorata basis with respect to total number of segments required in the structure on completion of a stage i.e. not less than completion of casting of at least 10 (ten) segments of the structure.
(3.c) Super structure: erection of girder, deck slab and bearings		(c) Super structure (errection of girders, deck slab and bearing): Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings at least one span in all respect as specified.
(4) Other ancillary works: wearing coat, expansion joint, hand railing, crash barriers tests on completion etc. completion in all respect.		(4) Other ancillary works: Payment shall be made on prorata basis on completion of a stage in all respect as specified, for each structure.
(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)		(5) Miscellaneous: Payment shall be made on completion of all miscellaneous works like hand rail, crash barrier, road markings, etc. complete in all respects as specified.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(6) wing walls/return walls upto full height		(6) wing walls/return walls upto full height: Payment shall be made on completion of wing wall/return wall complete for each ROB/RUB as per weightage given in the table, completion in all respects as specified.
(7) Retaining wall/ Reinforced earth wall etc.		(7) Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
(7.a) Panel casting		(a) Panel casting: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of the scope of RE wall panel of each ROB/RUB.
(7.b) Erection of panel/ construction of retaining wall		(b) Erection of panel/ Construction of retaining wall: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis on completion of a stage i.e. completion of erection of panels/ construction of retaining wall complete in all respect for at least 25% scope of work for each ROB/RUB.
<b>C.1 - Widening and repairs of Elevated section/Flyover/Grade Separators</b>		
(1) Foundation		(1) Foundation: Cost of each structure shall be determined on pro rata basis with respect to the total linear length (m) of the structures. Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure subject to completion of at least two foundations of the structure. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure		(2) Sub structure: Payment against sub-structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the structure subject to completion of at least two substructure of abutment/piers upto abutment/piers cap level of the structure.
(3) Superstructure (including bearing)		(3) Super Structure: Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings of at least one span in all respects as specified.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(4) wearing coat including expansion joint		(4) wearing coat including expansion joint: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)		(5) Miscellaneous: Payment shall be made on completion of all miscellaneous works like hand rail, crash barrier, road markings, etc. complete in all respects as specified.
(6) wing walls/return walls		(6) wing walls/return walls: Payment shall be made on completion of wing wall/return wall complete in all respects as specified.
(7) Approaches (including retaining walls, stone pitching, protection works).		(7) Approaches: Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
<b>C.2 - New Elevated section/Flyover/Grade Separators</b>		Cost of each structure shall be determined on prorata basis with respect to the total linear length (m) of all the structures. Payments shall be made on completion of each stage of structures as per weightage given in this table.
(1) Foundation: foundation of abutment/piers	2.27%	(1) Foundation: Payment against foundation shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each structure as per weightage given in this table, subject to completion of at least two foundations in all respect. In case where load testing is required for foundation, the trigger of the first payment shall include load testing also where specified.
(2) Sub structure: Substructure for abutment, piers upto the abutment/pier cap level.	0.67%	(2) Substructure: Payment against sub-structure shall be made on prorata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of each structure as per weightage given in tis table, subject to completion of at least two substructures of abutment/piers upto abutment/piers cap level.
(3) Superstructure: including girder, deck slab, bearing (excluding wearing coat and expansion joints)		
(3.a) Super Structure: Casting of girder/ fabrication of girders (steel)	1.84%	(a) Super structure (casting of girder): Unit of measurement is number. Payment against casting of girder shall be made on prorata basis with respect to total number of girders required in the structure on completion of a stage i.e. not less than completion of casting of at least five girders of the structure.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of payment	Weightage	Payment procedure
(3.b) Super structure: casting of segments		(b) Super structure (casting of segment): Unit of measurement is number. Payment against casting of segments shall be made on prorata basis with respect to total number of segments required in the structure on completion of a stage i.e. not less than completion of casting of at least 10 (ten) segments of the structure.
(3.c) Super structure: erection of girder, deck slab and bearings	2.76%	(c) Super structure (erection of girders, deck slab and bearing): Payment shall be made on prorata basis on completion of a stage i.e. completion of super structure including bearings at least one span in all respect as specified.
(4) Other ancillary works: wearing coat, expansion joint, hand railing, crash barriers tests on completion etc. completion in all respect.	0.64%	(4) Other ancillary works: Payment shall be made on prorata basis on completion of a stage in all respect as specified, for each structure.
(5) Miscellaneous items (like hand rails, crash barriers, road markings etc.)	0.16%	(5) Miscellaneous: Payment shall be made on completion of all miscellaneous works like hand rail, crash barrier, road markings, etc. complete in all respects as specified.
(6) wing walls/return walls upto full height		(6) wing walls/return walls upto full height: Payment shall be made on completion of wing wall/return wall complete for each ROB/RUB as per weightage given in the table, completion in all respects as specified.
(7) Retaining wall/ Reinforced earth wall etc.		Payment shall be made on prorata basis on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.
(7.a) Panel casting	10.91%	(a) Panel casting: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis with respect to total area panels required for the structure on completion of a stage i.e. not less than completion of casting of 25% of the scope of RE wall panel of each ROB/RUB.
(7.b) Erection of panel/ construction of retaining wall	10.91%	(b) Erection of panel/ Construction of retaining wall: Unit of measurement is area in Sqm. Payment against casting of panels shall be made on prorata basis on completion of a stage i.e. completion of erection of panels/ construction of retaining wall complete in all respect for at least 25% scope of work for each ROB/RUB.

**1.3.4 Other works.**

Procedure for estimating the value of other works done shall be as stated in table

1.3.4:

**Table 1.3.4**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Stage of Payment	Weightage	Payment Procedure
(i) Toll plaza	5.96%	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis as per following completed stages: (i) Rigid pavement upto DLC (LHS) - 12.5% (ii) Rigid pavement upto DLC (RHS) - 12.5% (iii) PQC (LHS) - 25% (iv) PQC (RHS) - 25% (v) Admin Building, Maintenance Building & Misc - 10% (vi) Canopy, Toll Booth, Safety Items & Miscellaneous works - 12.5% (vii) Toll plaza Tunnel/over head bridge - 2.5%
(ii) Road side drains	17.43%	Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5 % (five per cent) of the total length.
(iii) Road signs, markings, km stones, safety devices	25.39%	
(iv) Project Facilities		Payment shall be made on pro rata basis for completed facilities.
a) Bus bays	7.58%	
b) Truck lay-byes	5.89%	
c) Rest areas	4.80%	
d) Others		
- Street light	2.27%	
- Utility ducts	1.56%	
- Advance traffic management system	3.98%	
- Rainwater harvesting		
- Junctions improvement	6.18%	
(v) Roadside Plantation	1.35%	
(vi) Repair of Protection works other than approaches to the bridges, elevated sections, flyovers/ grade separators and ROBs/RUBs.		Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5% (five percent) of the total length.
(a) Protection works - - retaining wall / toe wall, breast wall etc.	13.59%	
(vii) Safety and traffic management during construction	0.17%	Payment shall be made on prorata basis every six months.
(ix) Side Slope Protection works Turfing and stone pitching	3.85%	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 5% (five percent) of the total length.

**1.3.5 Electrical utilities and public Health Utilities (Water pipelines and sewage lines)**



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

Procedure for estimating the value of other works done shall be as stated in table 1.3.5:

**Table 1.3.5**

Stage of Payment	Weightage	Payment Procedure
(i) EHT line	-	Unit measurement is as per completed shall be determined on pro-rata basis as per weightage with reference to total cost of EHT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Pole-20% (ii) Conductor stringing including laying of cable-30% (iii) DTR erection (if involved)-15% and (iv) Charging of line including dismantling and site clearance – 35% (with DTR) and 50% without DTR)
(ii) EHT crossings	-	Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 4 crossings.
(iii) HT/ LT line (incl. Transformers if any)	49.45%	Unit measurement is as per completed shall be determined on pro-rata basis as per weightage with reference to total cost of LT/HT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of Pole-20% (ii) Conductor stringing including laying of cable-30% (iii) DTR erection (if involved)-15% and (iv) Charging of line including dismantling and site clearance – 35% (with DTR) and 50% without DTR)
(iv) HT/ LT line crossing	40.75%	Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 10 crossings.
(v) Water pipeline	9.80%	Unit measurement is as per completed activities. Cost per activities shall be determined on pro-rata basis as per weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous items work and dismantling and site clearance- 50%)



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

Stage of Payment	Weightage	Payment Procedure
(vi) Water pipeline crossings	-	Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 8 crossings.
(vii) Sewage lines	-	Unit measurement is as per completed activities. Cost per activities shall be determined on pro-rata basis as per weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous items work and dismantling and site clearance- 50%)
(viii) Sewage line crossings	-	Cost of each crossing shall be determined on pro-rata basis with reference to total no. of crossings. Payment shall be made for completed activity. (The average weightage of major activities in shifting work is laying of pipe-50%, Charging of line including all miscellaneous items work and dismantling and site clearance- 50%).

## 2 Procedure for payment for Maintenance.

- 2.1 The cost for maintenance shall be as stated in Clause 14.1. (i)
- 2.2 Payment for Maintenance shall be made in quarterly instalments in accordance with the provisions of Clause 19.7.

# ***Schedule-I***



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

## **Schedule - I**

*(See Clause 10.2 (iv))*

### **1 Drawings**

Drawings In compliance of the obligations set forth in Clause 10.2 of this Agreement, the Contractor shall furnish to the Authority's Engineer, free of cost, all Drawings listed in Annex-I of this Schedule-I.

### **2 Additional Drawings**

If the Authority's Engineer determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Contractor to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Contractor shall promptly prepare and furnish such drawings to the Authority's Engineer, as if such drawings formed part of Annex-I of this Schedule-I.



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

## Annex – I

### (Schedule - I)

#### List of Drawings

- 1 A minimum list of the drawings of the various components/elements of the project highway and project facility required to be submitted by the Contractor is given below:
  - a. Drawing of horizontal alignment, vertical profile and typical cross sections.
  - b. Drawings of cross drainage works, i.e., Bridges/Culverts/Flyovers and Other Structures;
  - c. Drawings of interchanges, major intersections and underpasses.
  - d. Drawing of control center.
  - e. Drawings of road furniture items including traffic signage, marking, safety barriers, etc.;
  - f. Drawings of traffic diversions plans and traffic control measures.
  - g. Drawings of road drainage measures.
  - h. Drawings of typical details slope protection measures.
  - i. Drawings of landscaping and horticulture.
  - j. Drawings of pedestrian crossing.
  - k. Drawings of street lighting.
  - l. General Arrangement showing Base Camp and Administrative Block.
  - m. Any other drawings as per instruction of Authority Engineer.

# ***Schedule-J***



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-J

(See Clause 10.3 (ii))

### Project Completion Schedule

#### 1 Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule J for each of the Project Milestones and the **Scheduled Completion Date**. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

#### 2 Project Milestone-I

- (i) Project Milestone-I shall occur on the date falling on the 320<sup>th</sup> (Three Hundred Twentieth) day from the Appointed Date (the “**Project Milestone-I**”).
- (ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

#### 3 Project Milestone-II

- (i) Project Milestone-II shall occur on the date falling on the 548<sup>th</sup> (Five Hundred Forty Eighth) day from the Appointed Date (the “**Project Milestone-II**”).
- (ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price.

#### 4 Project Milestone-III

- (i) Project Milestone-III shall occur on the date falling on the 776<sup>th</sup> (Seven Hundred Seventy-Sixth) day from the Appointed Date (the “**Project Milestone-III**”).
- (ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

#### 5 Schedule Completion Date

- (i) The Scheduled Completion Date shall occur on the 913<sup>th</sup> (Nine Hundred Thirteenth) day from the Appointed Date.



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

- (ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

**6 Extension of time**

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.

***Schedule-K***



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-K

(See Clause 12.1 (ii))

### Tests on Completion

#### 1 Schedule for Tests

- (i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.
- (ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule K.

#### 2 Tests

- (i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include all the tests specified in IRC code, manual and MORTH specifications for the road and Bridge works, 5th revision, 2013.
- (ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometer.
- (iii) Tests for bridges: All major and minor bridges shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Nondestructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) meters or more shall also be subjected to load testing.
- (iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

determining the compliance of the Project Highway with Specifications and Standards.

- (v) Environmental audit: The Authority’s Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- (vi) Safety Audit: The Authority’s Engineer shall carry out or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

**3 Agency for conducting Tests**

All Tests set forth in this Schedule-K shall be conducted by the Authority’s Engineer or such other agency or person as it may specify in consultation with the Authority.

**4 Completion Certificate**

Upon successful completion of Tests, the Authority’s Engineer shall issue the Completion Certificate in accordance with the provisions of Article 12.

**5 The Authority Engineer will carry out tests with following equipment at his own cos in the presence of contractor’s representative**

Sr. No.	Key metrics of Asset		Equipment to be used	Survey	Frequency of condition survey
1	Surface defects of pavement	of	Network Vehicle (NSV)	Survey	At least twice a year (As per survey months defined for the state basis rainy season)
2	Roughness of pavement		Network Vehicle (NSV)	Survey	At least twice a year (As per survey months defined for the state basis rainy season)
3	Strength of pavement	of	Falling Weight Deflectometer (FWD)		At least once a year
4	Bridges		Mobile Bridge Inspection Unit (MBU)		At least twice a year (As per survey months defined for the state basis rainy season)
5	Road signs		Retro-reflectometer		At least twice a year (As per survey months defined for the state basis rainy season)



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

The first testing with the help of NSV shall be conducted at the time of issue of Completion Certificate.

# ***Schedule-L***



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

### Schedule-L

(See Clause 12.2)

### Completion Certificate

- 1 I, .....(Name of the Authority's Engineer), acting as Authority's Engineer, under and in accordance with the Agreement dated .....(the "Agreement"), for construction of the **"Four laning of Silchar - Dhanehari section (Package-1) of NH-37 & NH-306 from Existing Chainage km 263+800 to km 12+920 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode."** through ..... (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in service of the Users thereof.
- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the.....day of..... 20.....

SIGNED, SEALED AND DELIVERED

For and on behalf of

The Authority's Engineer by:

(Signature)

(Name)

(Designation)

(Address)

# ***Schedule-M***



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-M

(See Clauses 14.6., 15.2 and 19.7)

### Payment Reduction for Non-Compliance

#### 1 Payment reduction for non-compliance with the Maintenance Requirements

- (i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.
- (ii) Any deduction made on account of non-compliance with the maintenance Requirements shall not be paid even after compliance subsequently. The deduction shall continue to be made every month until compliance is done.
- (iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.

#### 2 Percentage reductions in lump sum payments

- (i) The following percentages shall govern the payment reduction:

S. No.	Item/Defect/Deficiency	Percentage
<b>(a)</b>	<b>Carriageway/Pavement</b>	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
<b>(b)</b>	<b>Road, Embankment, Cuttings, Shoulders</b>	
(i)	Edge drop, inadequate crossfall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, raincuts, disturbed pitching, vegetation growth, pruning of trees	5%
<b>(c)</b>	<b>Bridges and Culverts</b>	
(i)	Desilting, cleaning, vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%
(ii)	Any Defects in superstructures, bearings and sub-structures	10%
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
<b>(d)</b>	<b>Roadside Drains</b>	
(i)	Cleaning and repair of drains	5%



Four laning of Silchar – Kajidahar section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

<b>(e)</b>	<b>Road Furniture</b>	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m/km/5th km stones	5%
<b>(f)</b>	<b>Miscellaneous Items</b>	
(i)	Removal of dead animals, broken down/accidented vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
<b>(g)</b>	<b>Defects in Other Project Facilities</b>	5%

- (ii) The amount to be deducted from monthly lump-sum payment for non-compliance of particular item shall be calculated as under:

$$R = P/100 \times M \times L1/L$$

Where: P = Percentage of particular item//Defect/deficiency for deduction

M = Monthly lump-sum payment in accordance with the Bid

L1 = Non-complying length

L = Total length of the road,

R = Reduction (the amount to be deducted for noncompliance for a particular item/Defect/deficiency)

The total amount of reduction shall be arrived at by summation of reductions for such items/Defects/deficiency or noncompliance.

For any Defect in a part of one kilometer, the non-conforming length shall be taken as one kilometer.

# ***Schedule-N***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-N

(See Clause 18.1(i))

### Selection of Authority's Engineer

#### 1 Selection of Authority's Engineer

- (i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof or 'Guidelines for Employment of Consultants under Japanese ODA Loans' or a combination of certain provisions thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.
- (ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of above Paragraphs 1.1 to 1.3, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

#### 2 Terms of Reference

The Terms of Reference for the Authority's Engineer (the "TOR") shall substantially conform with Annex 1 to this Schedule N.

#### 3 Appointment of Government entity as Authority's Engineer

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Authority's Engineer; provided that such entity shall be a body corporate having as one of its primary functions the provision of consulting, advisory and supervisory services for engineering projects; provided further that a government-owned entity which is owned or controlled by the Authority shall not be eligible for appointment as Authority's Engineer.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Annex – I

(Schedule - N)

### Terms of Reference for Authority's Engineer

#### 1 Scope

- (i) These Terms of Reference (the “**TOR**”) for the Authority's Engineer are being specified pursuant to the EPC Agreement dated..... (the “**Agreement**”), which has been entered into between the NHIDCL (the “**Authority**”) and ..... (the “**Contractor**”) for “**Four laning of Silchar - Kajidhar section (Package-1) of NH-37 & NH-306 from Existing Chainage km 263+800 to km 12+920 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.**” and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.
- (ii) The TOR shall apply to construction and maintenance of the Project Highway.

#### 2 Definitions and interpretation

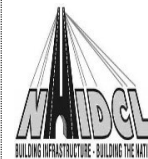
- (i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- (ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- (iii) The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, mutatis mutandis, to this TOR.

#### 3 General

- (i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.
- (ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:
  - (a) any Time extension;
  - (b) any additional cost to be paid by the Authority to the Contractor;



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

- (c) the Termination Payment; or
  - (d) any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding 0.2% of Contract Price.
- (iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.
- iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.
- v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.
- vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the authority's Engineer shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

#### 4 Construction Period

- i) During the Construction Period, the Authority's Engineer shall review the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1.6. The Authority's Engineer shall complete such review and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.
- ii) The Authority's Engineer shall review any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.
- iii) The Authority's Engineer shall review the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty-one) days stating the modifications, if any, required thereto.
- iv) The Authority's Engineer shall complete the review of the methodology proposed to



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

- be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.
- v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.
  - vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.
  - vii) The Authority's Engineer shall inspect the Construction Works and the Project Highway and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.
  - viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.
  - ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 4.9, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.
  - x) The Authority's Engineer shall test check at least 50 (Fifty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.
  - xi) The timing of tests referred to in Paragraph 4.9, and the criteria for acceptance/rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

- xii) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.
- xiii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.
- xiv) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.
- xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.4.
- xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.
- xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 4.18 and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

### 5 Maintenance Period

- i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.
- ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.
- iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Contractor in this behalf.
- iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.
- v) The Authority's Engineer shall examine the request of the Contractor for closure of any lane(s) of the Project Highway for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

### 6 Determination of costs and time

- i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.
- ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.
- iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

### 7 Payments

- i) The Authority's Engineer shall withhold payments for the affected works for which the



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



#### Technical Schedule

Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2.4 (d).

- ii) Authority's Engineer shall -
  - (a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and
  - (b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10.
- iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.
- iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16.

#### 8 Other duties and functions

The Authority's Engineer shall perform all other duties and functions as specified in the Agreement.

#### 9 Miscellaneous

- (i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.
- (ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.
- (iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.

- (iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.
- (v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

# ***Schedule-O***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## SCHEDULE - O

(See Clauses 19.4 (i), 19.6 (i), and 19.8 (i))

### Forms of Payment Statements

#### 1 Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

- (a) The estimated amount for the Works executed in accordance with Clause 19.3.1 subsequent to the last claim;
- (b) Amounts reflecting adjustments in price for the aforesaid claim;
- (c) The estimated amount of each Change of Scope Order executed subsequent to the last claim;
- (d) Amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2.3 (a);
- (e) Total of (a), (b), (c) and (d) above;
- (f) Deductions:
  - (i) Any amount to be deducted in accordance with the provisions of the Agreement except taxes;
  - (ii) Any amount towards deduction of taxes; and
  - (iii) Total of (i) and (ii) above.
- (g) Net claim: (e) – (f) (iii);
- (h) The amounts received by the Contractor upto the last claim:
  - (i) For the Works executed (excluding Change of Scope orders);
  - (ii) For Change of Scope Orders, and
  - (iii) Taxes deducted

#### 2 Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

- (a) the monthly payment admissible in accordance with the provisions of the agreement;
- (b) the deductions for maintenance work not done;
- (c) net payment for maintenance due, (a) minus (b);
- (d) amounts reflecting adjustments in price under Clause 19.12; and



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

(e) amount towards deduction of taxes

**3 Contractor's claim for Damages**

**Note:** The Contractor shall submit its claims in a form acceptable to the Authority.

**Monthly Maintenance Payment Statement**

The monthly Statement for Maintenance Payment shall state:

- (f) the monthly payment admissible in accordance with the provisions of the agreement;
- (g) the deductions for maintenance work not done;
- (h) net payment for maintenance due, (a) minus (b);
- (i) amounts reflecting adjustments in price under Clause 19.12; and
- (j) amount towards deduction of taxes

**4 Contractor's claim for Damages**

**Note:** The Contractor shall submit its claims in a form acceptable to the Authority.

# ***Schedule-P***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

## Schedule-P

(See Clause 20.1)

### INSURANCE

#### 1 Insurance during Construction Period

- i. The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the last Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:
  - (a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and
  - (b) Insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.
- ii. The insurance under paragraph 1.1 (a) and (b) above shall cover the authority and the Contractor against all loss or damage from whatsoever cause arising under paragraph 1.1 other than risks which are not insurable at commercial terms.

#### 2 Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover for the works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and arises from a cause occurring prior to the issue of Completion Certificate. The Contractor shall also maintain other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

#### 3 Insurance against injury to persons and damage to property

- (i) The Contractor shall insure against each Party's liability for any loss, damage, death or bodily injury which may occur to any physical property (except things insured under Paragraph 1 and 2 of this Schedule or to any person (except persons insured under Clause 20.9), which may arise out of the Contractor's performance of this Agreement. This insurance shall be for a limit per occurrence of not less than the amount stated below with no limit on the number of occurrences.

The insurance cover shall be not less than the Contract Price.



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

- (ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:
- (a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and
  - (b) Damage which is and unavoidable result of the Contractor's obligations to execute the Works.

**4 Insurance to be in joint names**

The insurance under paragraphs 1 to 3 above shall be in the joint names of the Contractor and the Authority.

# ***Schedule-Q***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



**Technical Schedule**

**Schedule-Q**  
(See Clause 14.10)

**Tests on Completion of Maintenance Period**

**1 Riding Quality test:**

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be 2,500 (two thousand five hundred) mm for each kilometer.

**2 Visual and physical test:**

**The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include measurement of cracking, rutting, stripping and potholes and shall be as per the requirement of maintenance mentioned in Schedule-E.**

# ***Schedule-R***



Four laning of Silchar – Dhanehari section (Package-1) from Existing Chainage km 263+800 of NH 37 to km 12+920 of NH 306 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode.



Technical Schedule

### Schedule-R

(See Clause 14.10)

### Taking Over Certificate

I, ..... (Name and designation of the Authority's representative) under and in accordance with the Agreement dated ..... (the "Agreement"), for **"Four laning of Silchar - Dhanehari section (Package-1) of NH-37 & NH-306 from Existing Chainage km 263+800 to km 12+920 (Design Chainage km 0+000 to km 20+000) on Silchar - Vairengte - Sairang road in the State of Assam under Bharatmala Pariyojna on EPC mode."**..... (Name of Contractor), hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has Taken over the Project Highway from the Contractor on this day .....

SIGNED, SEALED AND DELIVERED

(Signature)

(Name and designation of Authority's Representative)

(Address)