



National Highway Infrastructure Development Corporation Limited

**(Ministry of Road, Transport & Highways)
Government of India**

**Development, Maintenance, Management and Operation of
Greenfield High-Speed Corridor from Mawlyngkhung (near
Shillong) in Meghalaya to Panchgram (near Silchar) in Assam
by 4-Laning with Paved Shoulders on Hybrid Annuity Basis.
(Package-2: From Km 45+645 to Km 78+600, Design Length
- 32.955 Km)**

TECHNICAL SCHEDULES (A to D)

**MAY 2026
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029**

SCHEDULE-A

(See Clause 2.1 and 8.1)

SITE OF THE PROJECT

1 THE SITE

- 1.1** Site of the Four Lane Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
- 1.2** The dates of handing over the Right of Way to the Concessionaire are specified in Annex-II of this Schedule-A.
- 1.3** An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attach to, the Site shall be prepared jointly by the Authority Representative and the Concessionaire, and such inventory shall form part of the memorandum referred to in Clause 8.2(i) of this Agreement.
- 1.4** The alignment plans of the Project Highway are specified in Annex-III of Schedule-A. The proposed profile of the Project Highways shall be followed by the Concessionaire with minimum FRL as indicated in the alignment plan. The Concessionaire, however, improve/upgrade the Road Profile as indicated in Annex-III based on site/design requirement.
- 1.5** The status of the environment clearances obtained or awaited is given in Annex-IV of Schedule-A.

Annex – I
(Schedule-A)
Site for Four Laning

1 Site

The Site of the [Four-Lane] Project Highway starts from Design Chainage 45+645 near Wahiajer Village in West Jaintia Hills District and terminates at Design Chainage 78+600 near Dkhiah West Village in East Jaintia Hills District. The total design length of the project alignment is 32.955 km in the State of Meghalaya. The land, carriageway and structures comprising the Site are described below.

The land, carriageway and structures comprising the Site are described below.

S. No.	Existing Chainage (km)		Design Chainage (km)		Remarks
	Start	End	Start	End	
1	-	-	45.645	78.600	Proposed alignment for PKG-2 (Entirely Greenfield)

2 Land

The site of the project highway comprises the land (existing right of way) as described below. An Index map showing the features of Project Highway is given in Appendix A-I.

The Proposed Right of Way Coordinates are given in Appendix A-II.

The Index Map/location plan of the project highway is given at **Appendix A-I of Schedule-A.**

Sl. No.	Existing Chainage (km)		EROW (m)	Remarks
	From	To		
Proposed alignment for High-Speed Corridor PKG-2 (Entire Length Greenfield)				

3 Carriageway

The carriageway width and type of the existing pavement shown in table below.

S. No.	Existing Chainage (km)		Length (km)	Carriageway Width (m)	Pavement Type	Remarks
	From	To				
Proposed alignment for High-Speed Corridor PKG-2 (Entire Length Greenfield)						

4 Major Bridges-

The site includes the following major bridge:

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Span arrangement (No. x Span) (m)	Width (m)
Nil					

5 Railway Over Bridges / Road under Bridges

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

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	No. of Spans	Width (m)	No. of Tracks	Remarks
Nil							

6 Grade Separators

The site includes the following Grade Separators:

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

7 Minor Bridges

The Site includes the following Minor Bridges:

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Span arrangement (No. x Span) (m)	Width (m)
1	-	0+470 on Existing SH-09 near 1 st Proposed Access Point	Slab	1X7m	7.5
2	-	0+229 on Existing NH-06 near 3 rd Proposed Access Point	Girder + Slab	1 X 15	8.5

8 Railway Line / Level Crossings

The Site includes the following Railway Line / Level Crossing:

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

S. No.	Existing Chainage (km)	Design Chainage (km)	Railway Crossing Type	No. of Tracks
		Nil		

9 Vehicular Underpasses

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Clear Span arrangement (No. x Span) (m)	Width(m)
		Nil			

10 Culverts

The Site has the following culverts:

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Culvert	Span /Opening with span length (m)	Width (m)
		NIL			

11 Toll Plaza:

S. No.	Existing Chainage (km)	Type of Structure	Remarks
		Nil	

12 Total Number of Structures

The total number of structures on the Site indicated below:

- (a) No. of Major Bridges – Nil
- (b) No. of Railway Over Bridges – Nil
- (c) No. of Grade Separators – Nil
- (d) No. of Underpasses – Nil
- (e) No. of Minor Bridges – 02
- (f) No. of Culverts – Nil
- (g) Toll Plaza – Nil

13 Bus bays/Bus shelters and Truck lay-byes**13.1 Truck Lay-byes**

The location of existing truck lay-byes are given below:

S. No.	Existing Chainage (km)	Side	Village
		Nil	

14 Road Side Drains (Lined)

S. No.	Existing Chainage (km)		Side
	From	To	
		Nil	

15 Major Junction

The details of major junctions are as follows:

S. No.	Existing Chainage (km)	Design Chainage (km)	Side (Left/	Type of Junction	Category of Road	Remarks
--------	------------------------	----------------------	-------------	------------------	------------------	---------

			Right/ Both)			
Nil						

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

16 Minor Junction

The details of minor junctions are as follows:

S. No.	Existing Chainage (km)	Design Chainage (km)	Side (Left/ Right/ Both)	Type of Junction	Remarks
Nil					

17 Built up Area

The existing highway passes through the following built-up areas:

S. No.	Existing Chainage (km)		Length (km)	Side	Village name
	From	To		(LHS / RHS / Both)	
Nil					

18 Bypasses under consideration

S. No.	Name of Bypass	Existing Chainage (km)		Design Length (km)	Remarks
		Start	End		
Nil					

19 Electrical Utilities

The site includes the following electrical utilities:

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

Sl. No.	Design Chainage	Crossings						Remarks	Authority
		765KV	400KV	500KV	230KV	132KV	110KV		
1	63+240	-	-	-	-	1	-	Shifting to be done with appropriate vertical clearance	MePTCL
2	67+900	-	-	-	-	1	-		
3	71+180	-	-	-	-	1	-		
4	72+060	-	-	-	-	1	-	Height Raising required for requisite vertical clearance	
5	73+620	-	-	-	-	1	-		
6	76+440	-	-	-	-	1	-	Shifting to be done with appropriate vertical clearance	
7	76+940	-	-	-	-	1	-		
8	77+080	-	-	-	-	1	-		
9	45+880	-	1	-	-	-	-	Towers outside ROW. Requisite	NETCL
10	49+300	-	1	-	-	-	-		
11	54+280	-	1	-	-	-	-		
12	55+080	-	1	-	-	-	-		

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

13	60+780	-	1	-	-	-	-	vertical clearance available	
14	61+200	-	1	-	-	-	-		
15	62+440	-	1	-	-	-	-		
16	72+180	-	1	-	-	-	-		

- SC – Single Circuit, DC – Double Circuit

(b) Low Tension Lines (LT Lines)

S. No.	Design Chainage		Length (in Km)			LT (UG)	Crossings			Transformer (25 kVA/63 kVA/100 kVA/200kVA)
	From	To	33 KV	11 KV	LT		33 KV	11 KV	L T	No.
1	45+600	45+700	-	0.20		-	-	1		
2	47+000	47+200	0.30				1			
3	51+800	52+000		0.20	0.16			1	1	
4	54+500			0.10				1		
5	55+ 430			0.21				1		
6	59+620			0.055				2		
7	63+860				0.05				1	
8	64+660			0.28				1		
9	64+870				0.12				1	
10	65+000		0.16				1			
11	67+690							1		
12	68+010			0.07				1		
13	71+250		0.12				1			
14	72+250		0.19				1			
15	73+580		0.18				1			
16	72+500				0.001			1		
17	70+650				0.06				1	
18	70+800			0.06					1	
19	74+600			0.4				1	1	
20	76+100			0.4					2	
21	76+200			0.2					1	
22	77+000				0.1				1	
23	76+760				0.075				1	
24	77+620			0.15	0.9			1	1	63kVA, 25kVA

20 Water Pipeline Utilities

The site includes the following water pipeline utilities:

Sl.No.	Design Chainage		Length (m)	Dia (mm)	Type of Pipe	Crossings (Nos.)
	From	To				
1	47+100 to 47+400		320	150	D.I	-
2	54+500		300	80	G.I	1
3	63+680		210	50	G.I	1
4	63+770		340	15		2
5	64+020					2
6			150	250		

Sl.No.	Design Chainage		Length (m)	Dia (mm)	Type of Pipe	Crossings (Nos.)
	From	To				
7	62+940 to 76+950		80	200	D.I.	20
8			90	150		
9			100	100		
10			220	80		
11			80	100		
12			220	80	G.I.	
13			200	65		
14			240	50		
15			400	40		
16			180	25		
17	76+950		6000 L capacity RCC water tank (square)			1

21 IGGL

The site includes the following Gas pipeline utilities:

Sl.No.	Design Chainage		Length (m)	Dia (mm)	Type of Pipe	Crossings (Nos.)
	From	To				
1	50+650			458	Cast Steel	1

Annex - II

(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 Concessionaire on different stretches of the Site are stated below:

Sl. No	From km to km	Length (km)	Width (m)	Date of providing Right of Way*
-1	-2	-3	-4	-5
(i) Full Right of Way (full width)	Table Mentioned below	Table Mentioned below	Table Mentioned below	80% on appointed date and remaining within 150 days from appointed date.
(ii) Part Right of Way (part width)	—	—	—	—
(a) Stretch				
(b) Stretch				
(c) Stretch				
(iii) Balance Right of Way (width)	—	—	—	—
(a) Stretch				
(b) Stretch				
(c) Stretch				

For Main Carriageway

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
45645	30.00	38.00	68.00
45650	30.00	38.00	68.00
45700	30.00	38.00	68.00
45750	30.00	38.00	68.00
45800	30.00	38.00	68.00
45850	30.00	38.00	68.00
45900	35.00	30.00	65.00
45950	35.00	30.00	65.00
46000	30.00	30.00	60.00
46050	30.00	30.00	60.00
46100	30.00	30.00	60.00
46150	30.00	42.00	72.00
46200	40.00	42.00	82.00
46250	40.00	42.00	82.00
46300	40.00	42.00	82.00
46350	40.00	42.00	82.00
46400	40.00	42.00	82.00
46450	22.50	22.50	45.00
46500	22.50	22.50	45.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
46550	22.50	22.50	45.00
46600	74.00	47.00	121.00
46650	74.00	47.00	121.00
46700	74.00	47.00	121.00
46750	74.00	37.00	111.00
46800	74.00	37.00	111.00
46850	59.00	27.00	86.00
46900	59.00	27.00	86.00
46950	45.00	27.00	72.00
47000	45.00	27.00	72.00
47050	45.00	38.00	83.00
47100	35.00	38.00	73.00
47150	35.00	83.00	118.00
47200	35.00	83.00	118.00
47250	29.00	43.00	72.00
47300	29.00	43.00	72.00
47350	29.00	25.00	54.00
47400	54.00	82.00	136.00
47450	54.00	82.00	136.00
47500	37.00	82.00	119.00
47550	37.00	64.00	101.00
47600	37.00	64.00	101.00
47650	37.00	30.00	67.00
47700	47.00	30.00	77.00
47750	47.00	52.00	99.00
47800	38.00	52.00	90.00
47850	38.00	52.00	90.00
47900	38.00	27.00	65.00
47950	35.00	27.00	62.00
48000	35.00	27.00	62.00
48050	35.00	27.00	62.00
48100	27.50	27.00	54.50
48150	27.50	49.00	76.50
48200	27.50	49.00	76.50
48250	27.50	49.00	76.50
48300	22.50	22.50	45.00
48350	22.50	22.50	45.00
48400	27.50	39.00	66.50
48450	27.50	39.00	66.50
48500	27.50	39.00	66.50
48550	27.50	39.00	66.50
48600	27.50	39.00	66.50
48650	36.00	25.00	61.00
48700	30.00	25.00	55.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
48750	30.00	25.00	55.00
48800	30.00	30.00	60.00
48850	38.00	30.00	68.00
48900	38.00	38.00	76.00
48950	38.00	38.00	76.00
49000	38.00	38.00	76.00
49050	24.00	38.00	62.00
49100	24.00	38.00	62.00
49150	24.00	38.00	62.00
49200	24.00	49.00	73.00
49250	29.00	49.00	78.00
49300	29.00	49.00	78.00
49350	29.00	32.00	61.00
49400	29.00	32.00	61.00
49450	36.00	32.00	68.00
49500	36.00	32.00	68.00
49550	56.00	39.00	95.00
49600	56.00	39.00	95.00
49650	56.00	64.00	120.00
49700	56.00	64.00	120.00
49750	56.00	64.00	120.00
49800	56.00	64.00	120.00
49850	56.00	64.00	120.00
49900	35.00	49.00	84.00
49950	35.00	49.00	84.00
50000	35.00	49.00	84.00
50050	24.00	27.00	51.00
50100	24.00	27.00	51.00
50150	24.00	27.00	51.00
50200	28.00	34.00	62.00
50250	38.00	34.00	72.00
50300	38.00	34.00	72.00
50350	38.00	30.00	68.00
50400	40.00	26.00	66.00
50450	40.00	33.00	73.00
50500	40.00	33.00	73.00
50550	40.00	33.00	73.00
50600	50.00	26.00	76.00
50650	35.00	39.00	74.00
50700	35.00	39.00	74.00
50750	55.00	39.00	94.00
50800	55.00	39.00	94.00
50850	55.00	39.00	94.00
50900	30.00	27.00	57.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
50950	30.00	27.00	57.00
51000	39.00	33.00	72.00
51050	39.00	33.00	72.00
51100	36.00	36.00	72.00
51150	36.00	36.00	72.00
51200	25.00	36.00	61.00
51250	25.00	36.00	61.00
51300	33.00	36.00	69.00
51350	33.00	36.00	69.00
51400	33.00	26.00	59.00
51450	33.00	26.00	59.00
51500	24.00	34.00	58.00
51550	24.00	34.00	58.00
51600	24.00	30.00	54.00
51650	24.00	30.00	54.00
51700	31.00	30.00	61.00
51750	31.00	22.00	53.00
51800	31.00	22.00	53.00
51850	31.00	50.00	81.00
51900	35.00	50.00	85.00
51950	35.00	50.00	85.00
52000	46.00	64.00	110.00
52050	46.00	64.00	110.00
52100	37.00	64.00	101.00
52150	37.00	64.00	101.00
52200	25.00	46.00	71.00
52250	25.00	46.00	71.00
52300	25.00	28.00	53.00
52350	25.00	28.00	53.00
52400	25.00	28.00	53.00
52450	25.00	28.00	53.00
52500	25.00	30.00	55.00
52550	25.00	30.00	55.00
52600	70.00	40.00	110.00
52650	70.00	40.00	110.00
52700	22.00	33.00	55.00
52750	22.00	33.00	55.00
52800	22.00	27.00	49.00
52850	22.00	27.00	49.00
52900	29.00	27.00	56.00
52950	29.00	29.00	58.00
53000	45.00	29.00	74.00
53050	45.00	29.00	74.00
53100	45.00	44.00	89.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
53150	45.00	44.00	89.00
53200	27.00	36.00	63.00
53250	27.00	36.00	63.00
53300	27.00	26.00	53.00
53350	27.00	26.00	53.00
53400	27.00	26.00	53.00
53450	27.00	26.00	53.00
53500	27.00	26.00	53.00
53550	27.00	26.00	53.00
53600	20.00	26.00	46.00
53650	20.00	26.00	46.00
53700	20.00	26.00	46.00
53750	27.00	34.00	61.00
53800	27.00	24.00	51.00
53850	27.00	24.00	51.00
53900	23.00	24.00	47.00
53950	23.00	24.00	47.00
54000	23.00	27.00	50.00
54050	28.00	27.00	55.00
54100	28.00	27.00	55.00
54150	40.00	27.00	67.00
54200	55.00	45.00	100.00
54250	55.00	45.00	100.00
54300	55.00	45.00	100.00
54350	55.00	60.00	115.00
54400	55.00	60.00	115.00
54450	62.00	60.00	122.00
54500	62.00	60.00	122.00
54550	73.00	60.00	133.00
54600	73.00	80.00	153.00
54650	73.00	80.00	153.00
54700	73.00	80.00	153.00
54750	73.00	80.00	153.00
54800	73.00	80.00	153.00
54850	73.00	80.00	153.00
54900	54.00	85.00	139.00
54950	54.00	85.00	139.00
55000	54.00	67.00	121.00
55050	54.00	67.00	121.00
55100	54.00	53.00	107.00
55150	54.00	53.00	107.00
55200	36.00	46.00	82.00
55250	36.00	46.00	82.00
55300	36.00	40.00	76.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
55350	36.00	22.00	58.00
55400	32.00	22.00	54.00
55450	32.00	25.00	57.00
55500	26.00	25.00	51.00
55550	26.00	25.00	51.00
55600	32.00	25.00	57.00
55650	32.00	25.00	57.00
55700	24.00	33.00	57.00
55750	24.00	33.00	57.00
55800	24.00	28.00	52.00
55850	24.00	28.00	52.00
55900	28.00	28.00	56.00
55950	28.00	23.00	51.00
56000	28.00	23.00	51.00
56050	28.00	27.00	55.00
56100	28.00	27.00	55.00
56150	28.00	27.00	55.00
56200	28.00	27.00	55.00
56250	28.00	27.00	55.00
56300	28.00	27.00	55.00
56350	28.00	38.00	66.00
56400	44.00	38.00	82.00
56450	44.00	27.00	71.00
56500	44.00	27.00	71.00
56550	24.00	27.00	51.00
56600	24.00	27.00	51.00
56650	24.00	27.00	51.00
56700	30.00	27.00	57.00
56750	30.00	27.00	57.00
56800	25.00	27.00	52.00
56850	25.00	27.00	52.00
56900	25.00	27.00	52.00
56950	25.00	27.00	52.00
57000	25.00	27.00	52.00
57050	25.00	27.00	52.00
57100	32.00	27.00	59.00
57150	32.00	27.00	59.00
57200	26.00	22.00	48.00
57250	26.00	22.00	48.00
57300	26.00	40.00	66.00
57350	40.00	40.00	80.00
57400	40.00	40.00	80.00
57450	28.00	24.00	52.00
57500	28.00	24.00	52.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
57550	28.00	27.00	55.00
57600	28.00	27.00	55.00
57650	28.00	27.00	55.00
57700	28.00	27.00	55.00
57750	28.00	27.00	55.00
57800	28.00	27.00	55.00
57850	28.00	27.00	55.00
57900	28.00	27.00	55.00
57950	28.00	27.00	55.00
58000	23.00	27.00	50.00
58050	23.00	27.00	50.00
58100	23.00	27.00	50.00
58150	23.00	27.00	50.00
58200	29.00	27.00	56.00
58250	29.00	27.00	56.00
58300	29.00	27.00	56.00
58350	37.00	24.00	61.00
58400	37.00	24.00	61.00
58450	22.00	24.00	46.00
58500	22.00	28.00	50.00
58550	30.00	28.00	58.00
58600	30.00	28.00	58.00
58650	30.00	30.00	60.00
58700	30.00	30.00	60.00
58750	30.00	28.00	58.00
58800	30.00	28.00	58.00
58850	26.00	28.00	54.00
58900	26.00	31.00	57.00
58950	26.00	31.00	57.00
59000	29.00	31.00	60.00
59050	29.00	31.00	60.00
59100	29.00	64.00	93.00
59150	29.00	64.00	93.00
59200	29.00	64.00	93.00
59250	29.00	28.00	57.00
59300	29.00	28.00	57.00
59350	29.00	22.00	51.00
59400	46.00	22.00	68.00
59450	46.00	22.00	68.00
59500	46.00	37.00	83.00
59550	46.00	37.00	83.00
59600	46.00	37.00	83.00
59650	30.00	37.00	67.00
59700	30.00	37.00	67.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
59750	30.00	29.00	59.00
59800	40.00	29.00	69.00
59850	40.00	29.00	69.00
59900	40.00	29.00	69.00
59950	29.00	26.00	55.00
60000	29.00	26.00	55.00
60050	27.00	26.00	53.00
60100	27.00	26.00	53.00
60150	27.00	26.00	53.00
60200	22.00	45.00	67.00
60250	22.00	45.00	67.00
60300	22.00	24.00	46.00
60350	26.00	24.00	50.00
60400	26.00	24.00	50.00
60450	26.00	27.00	53.00
60500	26.00	27.00	53.00
60550	26.00	27.00	53.00
60600	21.00	27.00	48.00
60650	21.00	27.00	48.00
60700	25.00	23.00	48.00
60750	25.00	23.00	48.00
60800	25.00	23.00	48.00
60850	44.00	37.00	81.00
60900	44.00	37.00	81.00
60950	44.00	28.00	72.00
61000	28.00	28.00	56.00
61050	28.00	28.00	56.00
61100	28.00	36.00	64.00
61150	28.00	36.00	64.00
61200	44.00	36.00	80.00
61250	44.00	36.00	80.00
61300	44.00	46.00	90.00
61350	44.00	46.00	90.00
61400	35.00	49.00	84.00
61450	35.00	49.00	84.00
61500	35.00	61.00	96.00
61550	30.00	61.00	91.00
61600	30.00	37.00	67.00
61650	30.00	37.00	67.00
61700	30.00	37.00	67.00
61750	48.00	37.00	85.00
61800	48.00	30.00	78.00
61850	48.00	30.00	78.00
61900	48.00	30.00	78.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
61950	45.00	43.00	88.00
62000	45.00	43.00	88.00
62050	45.00	43.00	88.00
62100	30.00	43.00	73.00
62150	30.00	37.00	67.00
62200	22.00	37.00	59.00
62250	22.00	27.00	49.00
62300	22.00	27.00	49.00
62350	22.00	27.00	49.00
62400	34.00	30.00	64.00
62450	34.00	30.00	64.00
62500	30.00	30.00	60.00
62550	30.00	28.00	58.00
62600	30.00	28.00	58.00
62650	36.00	28.00	64.00
62700	36.00	34.00	70.00
62750	36.00	34.00	70.00
62800	28.00	30.00	58.00
62850	28.00	30.00	58.00
62900	28.00	30.00	58.00
62950	28.00	30.00	58.00
63000	28.00	30.00	58.00
63050	34.00	25.00	59.00
63100	34.00	25.00	59.00
63150	34.00	33.00	67.00
63200	28.00	24.00	52.00
63250	28.00	24.00	52.00
63300	28.00	24.00	52.00
63350	28.00	32.00	60.00
63400	30.00	32.00	62.00
63450	30.00	32.00	62.00
63500	30.00	36.00	66.00
63550	30.00	36.00	66.00
63600	24.00	36.00	60.00
63650	24.00	28.00	52.00
63700	28.00	28.00	56.00
63750	28.00	28.00	56.00
63800	28.00	39.00	67.00
63850	28.00	39.00	67.00
63900	22.00	39.00	61.00
63950	22.00	24.00	46.00
64000	22.00	24.00	46.00
64050	27.00	24.00	51.00
64100	27.00	24.00	51.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
64150	27.00	24.00	51.00
64200	27.00	29.00	56.00
64250	27.00	29.00	56.00
64300	42.00	40.00	82.00
64350	42.00	40.00	82.00
64400	47.00	40.00	87.00
64450	47.00	47.00	94.00
64500	47.00	47.00	94.00
64550	42.00	40.00	82.00
64600	42.00	40.00	82.00
64650	48.00	40.00	88.00
64700	48.00	49.00	97.00
64750	72.00	49.00	121.00
64800	72.00	74.00	146.00
64850	78.00	74.00	152.00
64900	78.00	74.00	152.00
64950	78.00	74.00	152.00
65000	78.00	74.00	152.00
65050	78.00	74.00	152.00
65100	78.00	74.00	152.00
65150	68.00	62.00	130.00
65200	68.00	62.00	130.00
65250	55.00	57.00	112.00
65300	40.00	57.00	97.00
65350	40.00	54.00	94.00
65400	40.00	54.00	94.00
65450	40.00	54.00	94.00
65500	40.00	54.00	94.00
65550	40.00	54.00	94.00
65600	40.00	54.00	94.00
65650	40.00	54.00	94.00
65700	40.00	54.00	94.00
65750	40.00	54.00	94.00
65800	40.00	30.00	70.00
65850	40.00	30.00	70.00
65900	40.00	30.00	70.00
65950	40.00	22.00	62.00
66000	36.00	22.00	58.00
66050	36.00	22.00	58.00
66100	30.00	30.00	60.00
66150	30.00	30.00	60.00
66200	30.00	30.00	60.00
66250	30.00	24.00	54.00
66300	30.00	24.00	54.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
66350	30.00	35.00	65.00
66400	50.00	35.00	85.00
66450	50.00	35.00	85.00
66500	50.00	35.00	85.00
66550	63.00	48.00	111.00
66600	63.00	48.00	111.00
66650	63.00	29.00	92.00
66700	46.00	29.00	75.00
66750	46.00	24.00	70.00
66800	23.00	24.00	47.00
66850	23.00	24.00	47.00
66900	23.00	30.00	53.00
66950	23.00	30.00	53.00
67000	28.00	30.00	58.00
67050	28.00	30.00	58.00
67100	40.00	38.00	78.00
67150	40.00	38.00	78.00
67200	32.00	44.00	76.00
67250	32.00	30.00	62.00
67300	32.00	30.00	62.00
67350	37.00	30.00	67.00
67400	37.00	30.00	67.00
67450	37.00	39.00	76.00
67500	37.00	39.00	76.00
67550	44.00	39.00	83.00
67600	44.00	44.00	88.00
67650	46.00	44.00	90.00
67700	46.00	44.00	90.00
67750	46.00	30.00	76.00
67800	40.00	30.00	70.00
67850	40.00	30.00	70.00
67900	40.00	30.00	70.00
67950	40.00	38.00	78.00
68000	38.00	30.00	68.00
68050	38.00	30.00	68.00
68100	38.00	30.00	68.00
68150	34.00	35.00	69.00
68200	34.00	35.00	69.00
68250	39.00	35.00	74.00
68300	39.00	35.00	74.00
68350	39.00	35.00	74.00
68400	27.00	45.00	72.00
68450	27.00	45.00	72.00
68500	38.00	36.00	74.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
68550	38.00	36.00	74.00
68600	38.00	36.00	74.00
68650	38.00	40.00	78.00
68700	63.00	40.00	103.00
68750	63.00	40.00	103.00
68800	48.00	40.00	88.00
68850	48.00	40.00	88.00
68900	24.00	30.00	54.00
68950	24.00	30.00	54.00
69000	34.00	30.00	64.00
69050	34.00	30.00	64.00
69100	22.50	22.50	45.00
69150	22.50	22.50	45.00
69200	22.50	22.50	45.00
69250	22.50	22.50	45.00
69300	22.50	22.50	45.00
69350	56.00	35.00	91.00
69400	56.00	28.00	84.00
69450	56.00	28.00	84.00
69500	56.00	42.00	98.00
69550	56.00	42.00	98.00
69600	33.00	30.00	63.00
69650	33.00	30.00	63.00
69700	28.00	48.00	76.00
69750	28.00	48.00	76.00
69800	28.00	31.00	59.00
69850	28.00	31.00	59.00
69900	40.00	31.00	71.00
69950	40.00	39.00	79.00
70000	40.00	39.00	79.00
70050	22.50	22.50	45.00
70100	22.500	22.500	45.00
70150	40.000	44.000	84.00
70200	40.000	44.000	84.00
70250	40.000	44.000	84.00
70300	33.000	34.000	67.00
70350	33.000	34.000	67.00
70400	33.000	30.000	63.00
70450	33.000	30.000	63.00
70500	35.000	30.000	65.00
70550	35.000	27.000	62.00
70600	35.000	27.000	62.00
70650	35.000	27.000	62.00
70700	31.000	31.000	62.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
70750	31.000	31.000	62.00
70800	31.000	28.000	59.00
70850	31.000	28.000	59.00
70900	31.000	28.000	59.00
70950	31.000	28.000	59.00
71000	31.000	28.000	59.00
71050	34.000	36.000	70.00
71100	34.000	36.000	70.00
71150	34.000	36.000	70.00
71200	30.000	30.000	60.00
71250	30.000	30.000	60.00
71300	30.000	27.000	57.00
71350	30.000	27.000	57.00
71400	27.000	27.000	54.00
71450	27.000	27.000	54.00
71500	27.000	21.000	48.00
71550	27.000	21.000	48.00
71600	29.000	21.000	50.00
71650	29.000	21.000	50.00
71700	29.000	28.000	57.00
71750	29.000	28.000	57.00
71800	29.000	28.000	57.00
71850	29.000	28.000	57.00
71900	25.000	28.000	53.00
71950	25.000	28.000	53.00
72000	30.000	28.000	58.00
72050	30.000	28.000	58.00
72100	30.000	32.000	62.00
72150	22.000	32.000	54.00
72200	22.000	25.000	47.00
72250	28.000	25.000	53.00
72300	28.000	37.000	65.00
72350	28.000	26.000	54.00
72400	28.000	26.000	54.00
72450	28.000	30.000	58.00
72500	23.000	30.000	53.00
72550	23.000	30.000	53.00
72600	23.000	30.000	53.00
72650	23.000	32.000	55.00
72700	29.000	32.000	61.00
72750	29.000	32.000	61.00
72800	29.000	32.000	61.00
72850	26.000	32.000	58.00
72900	26.000	23.000	49.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
72950	26.000	23.000	49.00
73000	26.000	23.000	49.00
73050	26.000	23.000	49.00
73100	39.000	23.000	62.00
73150	30.000	28.000	58.00
73200	30.000	28.000	58.00
73250	30.000	35.000	65.00
73300	35.000	35.000	70.00
73350	35.000	35.000	70.00
73400	21.000	30.000	51.00
73450	21.000	30.000	51.00
73500	21.000	30.000	51.00
73550	21.000	30.000	51.00
73600	21.000	30.000	51.00
73650	21.000	30.000	51.00
73700	21.000	30.000	51.00
73750	21.000	30.000	51.00
73800	21.000	27.000	48.00
73850	21.000	27.000	48.00
73900	21.000	27.000	48.00
73950	30.000	27.000	57.00
74000	30.000	27.000	57.00
74050	40.000	27.000	67.00
74100	40.000	38.000	78.00
74150	40.000	38.000	78.00
74200	40.000	38.000	78.00
74250	40.000	28.000	68.00
74300	46.000	28.000	74.00
74350	46.000	28.000	74.00
74400	30.000	28.000	58.00
74450	30.000	28.000	58.00
74500	34.000	28.000	62.00
74550	34.000	28.000	62.00
74600	34.000	28.000	62.00
74650	28.000	28.000	56.00
74700	28.000	28.000	56.00
74750	28.000	28.000	56.00
74800	28.000	28.000	56.00
74850	28.000	28.000	56.00
74900	28.000	28.000	56.00
74950	28.000	28.000	56.00
75000	28.000	28.000	56.00
75050	40.000	28.000	68.00
75100	40.000	34.000	74.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
75150	40.000	34.000	74.00
75200	40.000	34.000	74.00
75250	28.000	43.000	71.00
75300	28.000	43.000	71.00
75350	28.000	43.000	71.00
75400	28.000	36.000	64.00
75450	28.000	36.000	64.00
75500	28.000	32.000	60.00
75550	38.000	32.000	70.00
75600	38.000	32.000	70.00
75650	38.000	32.000	70.00
75700	30.000	32.000	62.00
75750	30.000	32.000	62.00
75800	30.000	32.000	62.00
75850	30.000	32.000	62.00
75900	30.000	26.000	56.00
75950	30.000	26.000	56.00
76000	30.000	26.000	56.00
76050	30.000	26.000	56.00
76100	30.000	37.000	67.00
76150	30.000	37.000	67.00
76200	30.000	29.000	59.00
76250	30.000	29.000	59.00
76300	40.000	29.000	69.00
76350	40.000	29.000	69.00
76400	28.000	25.000	53.00
76450	28.000	25.000	53.00
76500	28.000	25.000	53.00
76550	28.000	25.000	53.00
76600	33.000	37.000	70.00
76650	33.000	37.000	70.00
76700	33.000	37.000	70.00
76750	38.000	37.000	75.00
76800	38.000	37.000	75.00
76850	38.000	37.000	75.00
76900	31.000	37.000	68.00
76950	31.000	37.000	68.00
77000	31.000	37.000	68.00
77050	31.000	37.000	68.00
77100	31.000	37.000	68.00
77150	41.000	45.000	86.00
77200	41.000	45.000	86.00
77250	41.000	45.000	86.00
77300	41.000	45.000	86.00

DESIGN CHAINAGE (M)	ROW WIDTH		TOTAL WIDTH (m)
	LHS ROW	RHS ROW	
77350	41.000	45.000	86.00
77400	41.000	52.000	93.00
77450	53.000	52.000	105.00
77500	53.000	70.000	123.00
77550	80.000	70.000	150.00
77600	80.000	70.000	150.00
77650	80.000	70.000	150.00
77700	80.000	88.000	168.00
77750	80.000	88.000	168.00
77800	80.000	88.000	168.00
77850	80.000	88.000	168.00
77900	80.000	88.000	168.00
77950	70.000	76.000	146.00
78000	70.000	76.000	146.00
78050	56.000	60.000	116.00
78100	56.000	60.000	116.00
78150	43.000	37.000	80.00
78200	43.000	37.000	80.00
78250	43.000	37.000	80.00
78300	43.000	37.000	80.00
78350	32.000	31.000	63.00
78400	32.000	31.000	63.00
78450	32.000	31.000	63.00
78500	32.000	31.000	63.00
78550	24.000	31.000	55.00
78600	24.000	31.000	55.00

1. Interchange At Ch. 54+750 Km (SH -09 Crossing)

S. No.	Chainage (m)		Length (m)	RoW Width (m)		Total Width (m)
	From	To		Left	Right	
1	0	100	100	25	25	50
2	230	350	120	25	25	50
3	350	530	180	17	17	34

2. Interchange At Ch. 64+970 Km (SH-07 Crossing)

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
1	0	110	110	15	15	30
2	110	200	90	29	29	58
3	360	460	100	29	29	58
4	460	570	110	20	20	40

3. Interchange At Ch. 77+750 Km (NH-06 Crossing)

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
1	100	170	70	20	20	40
2	170	220	50	27	34	61
3	390	470	80	28	39	67
4	470	585	115	20	24	44

ANNEX-III

(Schedule-A)

ALIGNMENT PLAN

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 enclosed in alignment plan (Plan & Profile given with Drawing Volume). Finished road level indicated in the alignment plan shall be minimum requirement. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The Concessionaire shall, however, improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.
- (ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed, which is minimum requirement. The Concessionaire shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III of Schedule-A based on site/design requirement as per IRC: SP: 84 & IRC: 67 and other project facilities/road furniture as per IRC standards/Manual.

ANNEX-IV

(Schedule-A)

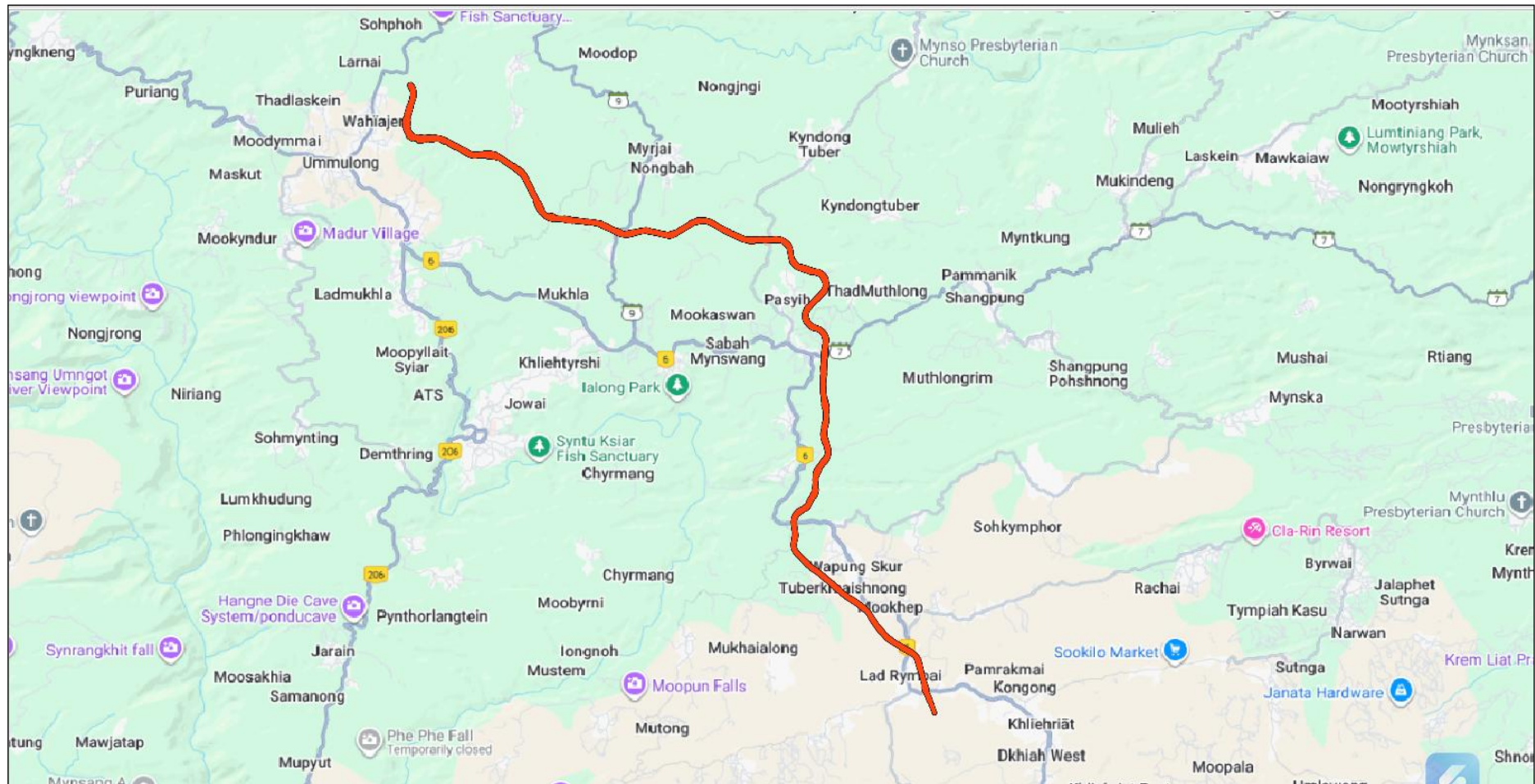
ENVIRONMENTAL CLEARANCES

Environmental Clearance : Not Applicable
Forest Clearance : **Deemed Forest Area – 52 Ha**
Wildlife Clearance : **Required for a length of about 110m (0.56 Ha) pertaining to Community Reserve**

-

Appendix A-I (Schedule-A)
INDEX MAP/LOCATION

PLAN OF THE PROJECT HIGHWAY



Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Appendix A-II (Schedule-A)
Proposed ROW Co-ordinates

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
1	45645	417067.48	2825088.15	417095.90	2825096.79	417030.86	2825076.95
2	45650	417068.93	2825083.36	417097.78	2825090.52	417032.47	2825071.58
3	45700	417080.08	2825034.66	417109.61	2825038.06	417042.43	2825027.55
4	45750	417085.07	2824984.94	417114.81	2824984.52	417046.83	2824982.64
5	45800	417083.82	2824934.99	417113.31	2824931.18	417045.56	2824936.98
6	45850	417076.36	2824885.58	417105.14	2824878.01	417038.67	2824892.39
7	45900	417063.69	2824837.22	417096.96	2824826.33	417034.47	2824844.20
8	45950	417049.80	2824789.19	417083.06	2824778.19	417020.62	2824796.25
9	46000	417035.91	2824741.16	417064.36	2824731.55	417006.73	2824748.22
10	46050	417022.02	2824693.13	417050.47	2824683.52	416992.84	2824700.19
11	46100	417008.13	2824645.09	417036.58	2824635.49	416978.94	2824652.16
12	46150	416994.24	2824597.06	417022.69	2824587.46	416953.53	2824607.46
13	46200	416980.35	2824549.03	417018.41	2824536.65	416939.63	2824559.43
14	46250	416966.46	2824501.00	417004.52	2824488.62	416925.74	2824511.40
15	46300	416952.57	2824452.97	416990.62	2824440.58	416911.85	2824463.37
16	46350	416938.68	2824404.94	416976.73	2824392.55	416897.96	2824415.33
17	46400	416924.78	2824356.90	416962.84	2824344.52	416884.07	2824367.30
18	46450	416910.89	2824308.87	416932.44	2824302.39	416889.21	2824314.89
19	46500	416897.00	2824260.84	416918.55	2824254.36	416875.32	2824266.86
20	46550	416883.11	2824212.81	416904.66	2824206.33	416861.43	2824218.83
21	46600	416869.22	2824164.78	416940.24	2824143.99	416824.00	2824177.61
22	46650	416855.64	2824116.66	416926.96	2824096.90	416809.80	2824127.11
23	46700	416845.31	2824067.76	416918.23	2824055.04	416798.68	2824073.70
24	46750	416840.40	2824018.03	416914.31	2824014.13	416803.38	2824017.99
25	46800	416841.04	2823968.06	416914.95	2823972.05	416804.23	2823964.08
26	46850	416847.21	2823918.47	416905.51	2823927.64	416820.88	2823912.37
27	46900	416858.84	2823869.86	416915.62	2823885.95	416833.42	2823860.66
28	46950	416875.79	2823822.85	416917.67	2823839.37	416851.50	2823811.00
29	47000	416897.85	2823778.01	416937.74	2823798.90	416874.96	2823763.63
30	47050	416924.74	2823735.89	416961.83	2823761.39	416894.85	2823712.37
31	47100	416956.14	2823697.01	416982.92	2823719.59	416928.93	2823670.45
32	47150	416991.65	2823661.85	417015.88	2823687.16	416937.57	2823598.89
33	47200	417030.85	2823630.85	417051.86	2823658.86	416984.68	2823561.85
34	47250	417073.24	2823604.38	417088.29	2823629.22	417053.83	2823566.00
35	47300	417118.30	2823582.78	417130.62	2823609.08	417103.09	2823542.55
36	47350	417165.49	2823566.31	417174.56	2823593.88	417160.04	2823541.87
37	47400	417214.20	2823555.17	417224.42	2823608.22	417200.39	2823474.34
38	47450	417263.85	2823549.50	417268.29	2823603.34	417260.46	2823467.56
39	47500	417313.83	2823548.38	417315.23	2823585.38	417315.02	2823466.38
40	47550	417363.83	2823548.31	417365.21	2823585.31	417365.08	2823484.31
41	47600	417413.83	2823548.25	417415.21	2823585.24	417415.08	2823484.25

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
42	47650	417463.83	2823548.18	417465.21	2823585.18	417465.12	2823518.18
43	47700	417513.83	2823548.12	417515.22	2823595.11	417515.12	2823518.11
44	47750	417563.83	2823548.05	417565.22	2823595.05	417565.10	2823496.05
45	47800	417613.83	2823547.99	417615.21	2823585.98	417615.10	2823495.98
46	47850	417663.83	2823547.92	417665.21	2823585.92	417665.10	2823495.92
47	47900	417713.83	2823547.86	417715.21	2823585.85	417715.13	2823520.85
48	47950	417763.83	2823547.65	417765.70	2823582.63	417764.74	2823520.63
49	48000	417813.77	2823545.31	417818.30	2823580.04	417812.62	2823518.30
50	48050	417863.34	2823538.93	417870.66	2823573.18	417860.02	2823512.10
51	48100	417912.22	2823528.45	417920.40	2823554.73	417906.73	2823501.97
52	48150	417960.05	2823513.93	417970.32	2823539.47	417945.23	2823467.20
53	48200	418006.51	2823495.49	418019.10	2823519.98	417987.45	2823450.33
54	48250	418051.30	2823473.30	418065.54	2823496.87	418029.18	2823429.56
55	48300	418095.01	2823449.01	418106.22	2823468.52	418084.20	2823429.27
56	48350	418138.61	2823424.55	418149.83	2823444.05	418127.81	2823404.81
57	48400	418182.22	2823400.08	418196.83	2823423.42	418164.29	2823365.42
58	48450	418225.82	2823375.62	418240.44	2823398.95	418207.90	2823340.96
59	48500	418269.43	2823351.15	418284.04	2823374.49	418251.51	2823316.49
60	48550	418313.03	2823326.69	418327.65	2823350.02	418295.11	2823292.03
61	48600	418356.64	2823302.22	418371.26	2823325.56	418338.72	2823267.56
62	48650	418400.25	2823277.76	418419.02	2823308.50	418389.17	2823255.30
63	48700	418443.85	2823253.29	418459.69	2823278.81	418432.78	2823230.84
64	48750	418487.46	2823228.83	418503.30	2823254.34	418476.38	2823206.38
65	48800	418531.06	2823204.36	418546.90	2823229.88	418517.54	2823177.55
66	48850	418574.67	2823179.90	418594.42	2823212.39	418561.15	2823153.08
67	48900	418618.28	2823155.43	418638.03	2823187.92	418600.84	2823121.64
68	48950	418661.88	2823130.97	418681.63	2823163.46	418644.45	2823097.18
69	49000	418705.49	2823106.50	418725.24	2823138.99	418688.05	2823072.71
70	49050	418749.11	2823082.07	418761.87	2823102.44	418731.91	2823048.15
71	49100	418793.65	2823059.38	418804.54	2823080.81	418779.54	2823024.07
72	49150	418840.45	2823041.89	418848.54	2823064.52	418830.94	2823005.07
73	49200	418889.07	2823030.37	418894.22	2823053.84	418882.56	2822981.78
74	49250	418938.75	2823025.00	418941.41	2823053.91	418937.83	2822975.99
75	49300	418988.74	2823024.37	418989.93	2823053.38	418990.31	2822975.38
76	49350	419038.74	2823024.62	419039.93	2823053.62	419040.23	2822992.62
77	49400	419088.74	2823024.86	419089.93	2823053.87	419090.23	2822992.87
78	49450	419138.74	2823025.10	419139.90	2823061.11	419140.23	2822993.11
79	49500	419188.74	2823025.34	419189.90	2823061.35	419190.23	2822993.35
80	49550	419238.74	2823025.59	419239.80	2823081.59	419240.26	2822986.59
81	49600	419288.74	2823025.83	419289.80	2823081.83	419290.26	2822986.83
82	49650	419338.74	2823026.03	419340.26	2823082.02	419339.86	2822962.02
83	49700	419388.71	2823024.49	419393.33	2823080.30	419386.27	2822960.51
84	49750	419438.48	2823019.84	419447.00	2823075.20	419431.58	2822956.20

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
85	49800	419487.87	2823012.09	419499.69	2823066.84	419477.16	2822948.97
86	49850	419536.68	2823001.27	419551.76	2823055.21	419522.20	2822938.91
87	49900	419584.71	2822987.43	419596.62	2823020.36	419571.08	2822940.34
88	49950	419631.79	2822970.61	419645.98	2823002.63	419614.90	2822924.59
89	50000	419677.73	2822950.88	419693.60	2822981.92	419658.20	2822905.91
90	50050	419722.34	2822928.33	419734.05	2822949.28	419709.62	2822904.51
91	50100	419765.46	2822903.03	419778.45	2822923.21	419751.27	2822880.05
92	50150	419806.92	2822875.10	419821.09	2822894.47	419791.40	2822853.00
93	50200	419847.42	2822845.78	419864.05	2822868.31	419827.66	2822818.11
94	50250	419887.90	2822816.43	419910.21	2822847.20	419868.14	2822788.76
95	50300	419928.38	2822787.08	419950.69	2822817.85	419908.62	2822759.41
96	50350	419968.87	2822757.73	419991.17	2822788.50	419951.45	2822733.30
97	50400	420009.35	2822728.39	420032.83	2822760.77	419994.28	2822707.20
98	50450	420049.83	2822699.04	420073.31	2822731.42	420030.46	2822672.32
99	50500	420090.31	2822669.69	420113.79	2822702.08	420070.94	2822642.97
100	50550	420130.79	2822640.34	420154.27	2822672.73	420111.42	2822613.63
101	50600	420171.27	2822611.00	420200.81	2822651.34	420156.20	2822589.80
102	50650	420211.75	2822581.65	420232.49	2822609.84	420189.05	2822549.93
103	50700	420252.23	2822552.30	420272.97	2822580.50	420229.54	2822520.58
104	50750	420292.71	2822522.95	420325.19	2822567.34	420270.02	2822491.24
105	50800	420332.63	2822492.84	420366.32	2822537.32	420309.88	2822462.15
106	50850	420370.44	2822460.14	420408.54	2822502.83	420346.11	2822432.56
107	50900	420405.82	2822424.83	420428.24	2822446.30	420386.24	2822406.30
108	50950	420438.58	2822387.08	420462.71	2822406.94	420417.53	2822370.58
109	51000	420468.58	2822347.08	420500.41	2822369.33	420440.76	2822329.02
110	51050	420495.64	2822305.05	420528.23	2822324.24	420465.43	2822289.03
111	51100	420519.63	2822261.20	420552.08	2822277.48	420486.99	2822246.72
112	51150	420541.15	2822216.07	420573.38	2822232.13	420508.20	2822201.55
113	51200	420562.39	2822170.80	420584.66	2822182.20	420529.44	2822156.28
114	51250	420583.63	2822125.54	420605.90	2822136.93	420550.68	2822111.02
115	51300	420604.88	2822080.28	420634.39	2822095.07	420571.92	2822065.76
116	51350	420626.12	2822035.01	420655.63	2822049.81	420593.17	2822020.49
117	51400	420647.36	2821989.75	420676.87	2822004.54	420623.46	2821979.48
118	51450	420668.60	2821944.49	420698.11	2821959.28	420644.70	2821934.21
119	51500	420689.84	2821899.22	420711.21	2821910.19	420658.70	2821885.55
120	51550	420711.09	2821853.96	420732.45	2821864.93	420679.94	2821840.29
121	51600	420732.33	2821808.70	420753.69	2821819.66	420704.81	2821796.72
122	51650	420753.57	2821763.43	420774.93	2821774.40	420726.05	2821751.46
123	51700	420774.81	2821718.17	420802.51	2821732.11	420747.29	2821706.20
124	51750	420796.05	2821672.90	420823.75	2821686.85	420775.77	2821664.33
125	51800	420817.29	2821627.64	420845.00	2821641.58	420797.02	2821619.07
126	51850	420838.54	2821582.38	420866.24	2821596.32	420792.91	2821561.91
127	51900	420859.78	2821537.11	420891.10	2821552.76	420814.15	2821516.65

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
128	51950	420881.02	2821491.85	420912.34	2821507.49	420835.39	2821471.38
129	52000	420902.26	2821446.59	420943.54	2821466.90	420843.96	2821420.17
130	52050	420923.50	2821401.32	420964.78	2821421.64	420865.20	2821374.91
131	52100	420944.75	2821356.06	420977.88	2821372.55	420886.45	2821329.64
132	52150	420965.99	2821310.80	420999.12	2821327.29	420907.69	2821284.38
133	52200	420987.23	2821265.53	421009.50	2821276.93	420945.22	2821246.76
134	52250	421009.38	2821220.72	421030.95	2821233.39	420968.54	2821199.54
135	52300	421035.95	2821178.40	421055.79	2821193.64	421012.68	2821162.80
136	52350	421067.59	2821139.72	421085.37	2821157.31	421046.44	2821121.35
137	52400	421103.80	2821105.29	421119.25	2821124.96	421085.11	2821084.42
138	52450	421144.02	2821075.64	421156.89	2821097.09	421128.08	2821052.61
139	52500	421187.62	2821051.24	421197.72	2821074.12	421173.81	2821024.59
140	52550	421233.93	2821032.46	421241.10	2821056.43	421223.54	2821004.30
141	52600	421282.21	2821019.61	421295.27	2821088.38	421273.43	2820980.57
142	52650	421331.64	2821012.13	421339.29	2821081.71	421325.93	2820972.53
143	52700	421381.28	2821006.15	421383.06	2821028.10	421376.49	2820973.49
144	52750	421430.92	2821000.19	421432.70	2821022.13	421426.14	2820967.53
145	52800	421480.56	2820994.22	421482.34	2821016.17	421476.50	2820967.52
146	52850	421530.21	2820988.26	421531.98	2821010.20	421526.14	2820961.55
147	52900	421579.85	2820982.29	421582.46	2821011.18	421575.78	2820955.58
148	52950	421629.49	2820976.32	421632.11	2821005.22	421625.18	2820947.63
149	53000	421679.14	2820970.36	421683.66	2821015.14	421674.83	2820941.67
150	53050	421728.78	2820964.39	421733.30	2821009.17	421724.47	2820935.70
151	53100	421778.42	2820958.42	421782.94	2821003.20	421772.32	2820914.84
152	53150	421828.06	2820952.46	421832.59	2820997.24	421821.97	2820908.87
153	53200	421877.71	2820946.49	421880.08	2820973.40	421872.56	2820910.85
154	53250	421927.35	2820940.53	421929.72	2820967.43	421922.21	2820904.88
155	53300	421976.99	2820934.56	421979.37	2820961.47	421973.04	2820908.85
156	53350	422026.63	2820928.59	422029.01	2820955.50	422022.68	2820902.88
157	53400	422076.28	2820922.63	422078.65	2820949.54	422072.33	2820896.91
158	53450	422125.92	2820916.66	422128.29	2820943.57	422121.97	2820890.95
159	53500	422175.56	2820910.69	422177.94	2820937.60	422171.61	2820884.98
160	53550	422225.21	2820904.73	422227.58	2820931.64	422221.26	2820879.02
161	53600	422274.85	2820898.76	422276.39	2820918.72	422270.90	2820873.05
162	53650	422324.49	2820892.79	422326.03	2820912.75	422320.54	2820867.08
163	53700	422374.13	2820886.83	422376.76	2820906.66	422371.27	2820860.99
164	53750	422423.78	2820880.86	422427.24	2820907.64	422419.96	2820847.08
165	53800	422473.42	2820874.90	422476.88	2820901.67	422470.79	2820851.04
166	53850	422523.06	2820868.93	422526.52	2820895.71	422520.44	2820845.07
167	53900	422572.71	2820862.96	422575.69	2820885.77	422570.08	2820839.11
168	53950	422622.35	2820856.99	422625.37	2820879.79	422619.68	2820833.14
169	54000	422671.78	2820849.57	422676.34	2820872.11	422667.50	2820825.95
170	54050	422720.46	2820838.21	422728.16	2820865.13	422713.49	2820812.12

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
171	54100	422768.02	2820822.84	422777.87	2820849.05	422758.97	2820797.40
172	54150	422814.15	2820803.58	422829.80	2820840.41	422803.59	2820778.71
173	54200	422859.26	2820782.02	422875.39	2820818.65	422841.13	2820740.80
174	54250	422904.33	2820760.36	422926.50	2820810.73	422886.20	2820719.15
175	54300	422949.40	2820738.71	422971.57	2820789.08	422931.26	2820697.50
176	54350	422994.46	2820717.05	423016.63	2820767.42	422970.29	2820662.10
177	54400	423039.53	2820695.40	423061.70	2820745.77	423015.35	2820640.45
178	54450	423084.60	2820673.74	423109.59	2820730.52	423060.42	2820618.80
179	54500	423129.67	2820652.09	423154.66	2820708.87	423105.49	2820597.14
180	54550	423174.73	2820630.44	423199.73	2820687.21	423150.56	2820575.49
181	54600	423219.80	2820608.78	423249.23	2820675.63	423187.56	2820535.52
182	54650	423264.87	2820587.13	423294.29	2820653.98	423232.63	2820513.86
183	54700	423309.94	2820565.47	423339.36	2820632.32	423277.70	2820492.21
184	54750	423355.00	2820543.82	423384.43	2820610.67	423322.77	2820470.55
185	54800	423400.16	2820522.36	423428.12	2820589.85	423369.54	2820448.41
186	54850	423446.65	2820504.03	423466.99	2820574.21	423424.39	2820427.18
187	54900	423495.03	2820491.53	423503.49	2820544.92	423481.75	2820407.56
188	54950	423544.59	2820485.16	423546.32	2820539.19	423541.88	2820400.19
189	55000	423594.56	2820485.02	423589.54	2820538.84	423600.79	2820418.30
190	55050	423644.16	2820491.08	423632.81	2820543.90	423658.25	2820425.54
191	55100	423693.13	2820501.16	423680.04	2820553.58	423705.99	2820449.71
192	55150	423742.02	2820511.65	423728.93	2820564.07	423754.87	2820460.20
193	55200	423790.90	2820522.14	423782.18	2820557.09	423802.06	2820477.49
194	55250	423839.79	2820532.64	423831.06	2820567.59	423850.95	2820487.99
195	55300	423888.68	2820543.13	423879.95	2820578.08	423898.38	2820504.30
196	55350	423937.56	2820553.63	423928.84	2820588.57	423942.90	2820532.27
197	55400	423986.45	2820564.12	423979.97	2820595.46	423991.30	2820542.66
198	55450	424035.34	2820574.61	424028.85	2820605.95	424040.82	2820550.22
199	55500	424084.22	2820585.10	424079.08	2820610.59	424089.63	2820560.69
200	55550	424133.42	2820593.96	424130.32	2820619.78	424136.86	2820569.20
201	55600	424183.27	2820597.29	424183.42	2820623.29	424183.60	2820572.29
202	55650	424233.16	2820594.38	424237.27	2820626.11	424230.37	2820569.53
203	55700	424282.34	2820585.51	424287.89	2820608.86	424275.26	2820553.28
204	55750	424330.99	2820573.98	424336.80	2820597.27	424323.55	2820541.83
205	55800	424379.62	2820562.36	424385.43	2820585.64	424373.35	2820535.07
206	55850	424428.25	2820550.73	424434.06	2820574.02	424421.98	2820523.45
207	55900	424476.88	2820539.11	424483.62	2820566.29	424470.61	2820511.82
208	55950	424525.51	2820527.49	424532.25	2820554.67	424520.40	2820505.06
209	56000	424574.14	2820515.87	424580.89	2820543.04	424569.03	2820493.44
210	56050	424622.78	2820504.25	424629.52	2820531.42	424616.73	2820477.93
211	56100	424671.41	2820492.62	424678.15	2820519.80	424665.36	2820466.31
212	56150	424720.04	2820481.00	424726.78	2820508.18	424713.99	2820454.68
213	56200	424768.67	2820469.38	424775.41	2820496.56	424762.62	2820443.06

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
214	56250	424817.39	2820458.17	424823.24	2820485.55	424812.21	2820431.67
215	56300	424866.82	2820450.83	424869.45	2820478.71	424864.75	2820423.91
216	56350	424916.77	2820449.65	424915.91	2820477.64	424918.51	2820411.69
217	56400	424966.48	2820454.70	424962.14	2820482.37	424972.94	2820417.26
218	56450	425015.18	2820465.92	425002.85	2820508.16	425023.11	2820440.11
219	56500	425062.09	2820483.11	425044.59	2820523.49	425073.18	2820458.50
220	56550	425106.56	2820505.91	425094.78	2820526.82	425120.26	2820482.64
221	56600	425149.40	2820531.70	425137.12	2820552.32	425163.65	2820508.76
222	56650	425192.10	2820557.71	425179.82	2820578.33	425206.35	2820534.77
223	56700	425234.80	2820583.72	425222.52	2820604.34	425249.05	2820560.78
224	56750	425277.51	2820609.73	425262.10	2820635.47	425291.75	2820586.79
225	56800	425320.21	2820635.74	425307.41	2820657.21	425334.46	2820612.80
226	56850	425362.91	2820661.75	425350.11	2820683.22	425377.16	2820638.81
227	56900	425405.61	2820687.75	425392.81	2820709.23	425419.86	2820664.82
228	56950	425448.32	2820713.76	425435.52	2820735.24	425462.57	2820690.83
229	57000	425491.02	2820739.77	425478.22	2820761.25	425505.27	2820716.84
230	57050	425533.72	2820765.78	425520.92	2820787.26	425547.97	2820742.85
231	57100	425576.43	2820791.79	425563.62	2820813.27	425590.67	2820768.85
232	57150	425619.18	2820817.72	425603.06	2820845.36	425633.16	2820794.61
233	57200	425662.99	2820841.78	425651.62	2820865.16	425673.01	2820822.19
234	57250	425708.62	2820862.19	425699.24	2820886.43	425716.97	2820841.83
235	57300	425755.79	2820878.72	425748.46	2820903.67	425767.66	2820840.52
236	57350	425804.18	2820891.27	425796.01	2820930.43	425812.82	2820852.22
237	57400	425853.44	2820899.75	425848.55	2820939.45	425858.80	2820860.11
238	57450	425903.24	2820904.11	425902.21	2820932.09	425904.56	2820880.14
239	57500	425953.22	2820904.30	425954.53	2820932.27	425952.54	2820880.30
240	57550	426003.05	2820900.33	426006.68	2820928.09	426000.01	2820873.50
241	57600	426052.37	2820892.22	426058.30	2820919.59	426047.11	2820865.74
242	57650	426100.85	2820880.04	426109.04	2820906.82	426093.40	2820854.09
243	57700	426148.15	2820863.87	426158.54	2820889.87	426138.57	2820838.62
244	57750	426193.93	2820843.81	426206.45	2820868.86	426182.28	2820819.45
245	57800	426237.93	2820820.09	426252.25	2820844.15	426224.53	2820796.65
246	57850	426280.90	2820794.51	426295.47	2820818.42	426267.25	2820771.21
247	57900	426323.81	2820768.86	426338.38	2820792.77	426310.17	2820745.56
248	57950	426366.73	2820743.21	426381.30	2820767.12	426353.08	2820719.91
249	58000	426409.65	2820717.55	426421.65	2820737.17	426396.00	2820694.25
250	58050	426452.57	2820691.90	426464.57	2820711.52	426438.92	2820668.60
251	58100	426495.48	2820666.25	426507.49	2820685.86	426481.84	2820642.95
252	58150	426538.40	2820640.59	426550.41	2820660.21	426524.75	2820617.29
253	58200	426581.32	2820614.94	426596.40	2820639.71	426567.67	2820591.64
254	58250	426624.24	2820589.28	426639.31	2820614.06	426610.59	2820565.98
255	58300	426667.48	2820564.20	426681.75	2820589.45	426654.60	2820540.47
256	58350	426711.70	2820540.86	426728.49	2820573.84	426701.16	2820519.30

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
257	58400	426756.76	2820519.20	426772.75	2820552.57	426746.74	2820497.39
258	58450	426801.99	2820497.88	426811.59	2820517.68	426791.97	2820476.07
259	58500	426847.22	2820476.56	426856.81	2820496.36	426835.50	2820451.13
260	58550	426892.44	2820455.25	426905.45	2820482.28	426880.72	2820429.82
261	58600	426937.67	2820433.93	426950.68	2820460.96	426925.95	2820408.50
262	58650	426982.90	2820412.61	426995.91	2820439.64	426970.33	2820385.37
263	58700	427028.13	2820391.29	427041.13	2820418.33	427015.55	2820364.05
264	58750	427073.36	2820369.97	427086.36	2820397.01	427061.63	2820344.54
265	58800	427118.58	2820348.66	427131.59	2820375.69	427106.86	2820323.23
266	58850	427164.16	2820328.10	427174.26	2820352.06	427153.74	2820302.11
267	58900	427211.44	2820311.94	427218.51	2820336.96	427203.51	2820281.97
268	58950	427260.36	2820301.79	427264.27	2820327.50	427256.23	2820271.06
269	59000	427310.15	2820297.44	427311.77	2820326.39	427308.92	2820266.46
270	59050	427360.12	2820295.50	427361.43	2820324.47	427359.20	2820264.52
271	59100	427410.08	2820293.65	427411.40	2820322.62	427407.94	2820229.68
272	59150	427460.05	2820291.79	427461.36	2820320.76	427457.91	2820227.82
273	59200	427510.01	2820289.93	427511.33	2820318.90	427507.87	2820225.97
274	59250	427559.98	2820288.07	427561.29	2820317.04	427559.18	2820260.08
275	59300	427609.94	2820286.21	427611.26	2820315.18	427609.14	2820258.22
276	59350	427659.91	2820284.36	427661.23	2820313.33	427659.33	2820262.36
277	59400	427709.87	2820282.50	427711.82	2820328.46	427709.30	2820260.50
278	59450	427759.84	2820280.69	427761.47	2820326.66	427759.42	2820258.69
279	59500	427809.83	2820279.74	427810.42	2820325.74	427809.91	2820257.74
280	59550	427859.83	2820279.93	427859.37	2820325.93	427860.63	2820242.93
281	59600	427909.81	2820281.18	427908.67	2820327.17	427911.16	2820244.21
282	59650	427959.79	2820282.69	427959.13	2820312.68	427961.14	2820245.71
283	59700	428009.77	2820284.19	428009.11	2820314.18	428011.12	2820247.21
284	59750	428059.75	2820285.69	428059.08	2820315.68	428060.86	2820256.71
285	59800	428109.72	2820287.19	428109.06	2820317.19	428110.83	2820258.21
286	59850	428159.70	2820288.70	428158.74	2820328.68	428160.81	2820259.72
287	59900	428209.68	2820290.18	428208.89	2820330.17	428210.66	2820261.20
288	59950	428259.66	2820289.92	428261.48	2820318.86	428258.49	2820263.94
289	60000	428309.29	2820284.12	428314.71	2820312.61	428304.89	2820258.49
290	60050	428357.81	2820272.17	428366.13	2820297.86	428350.25	2820247.30
291	60100	428404.46	2820254.27	428415.92	2820278.72	428393.86	2820230.53
292	60150	428448.52	2820230.70	428462.94	2820253.53	428435.03	2820208.47
293	60200	428489.29	2820201.81	428503.30	2820218.78	428461.20	2820166.66
294	60250	428526.15	2820168.07	428542.16	2820183.15	428493.89	2820136.69
295	60300	428558.51	2820130.00	428576.28	2820142.97	428539.42	2820115.45
296	60350	428585.87	2820088.18	428608.59	2820100.81	428565.11	2820076.13
297	60400	428607.80	2820043.29	428631.92	2820052.98	428585.70	2820033.91
298	60450	428623.96	2819996.01	428649.11	2820002.62	428597.98	2819988.67
299	60500	428634.28	2819947.11	428659.99	2819950.98	428607.65	2819942.61

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
300	60550	428641.45	2819897.63	428667.23	2819901.01	428614.75	2819893.63
301	60600	428648.42	2819848.11	428669.24	2819850.81	428621.71	2819844.12
302	60650	428655.38	2819798.60	428676.21	2819801.29	428628.68	2819794.60
303	60700	428662.36	2819749.09	428687.14	2819752.40	428639.63	2819745.60
304	60750	428670.81	2819699.82	428695.28	2819704.94	428648.39	2819694.67
305	60800	428684.50	2819651.77	428708.14	2819659.89	428662.90	2819643.86
306	60850	428704.07	2819605.79	428743.50	2819625.34	428671.12	2819588.97
307	60900	428729.23	2819562.62	428765.91	2819586.92	428698.63	2819541.82
308	60950	428759.57	2819522.92	428792.93	2819551.60	428738.59	2819504.37
309	61000	428794.62	2819487.31	428813.47	2819508.01	428776.12	2819466.29
310	61050	428833.84	2819456.35	428849.96	2819479.24	428818.11	2819433.18
311	61100	428876.61	2819430.52	428889.76	2819455.24	428860.19	2819398.48
312	61150	428922.27	2819410.22	428932.28	2819436.37	428909.91	2819376.41
313	61200	428969.81	2819394.76	428982.63	2819436.85	428959.74	2819360.20
314	61250	429017.73	2819380.50	429030.51	2819422.60	429007.70	2819345.93
315	61300	429065.66	2819366.24	429078.43	2819408.34	429052.77	2819322.08
316	61350	429113.58	2819351.98	429126.36	2819394.08	429100.69	2819307.82
317	61400	429161.50	2819337.72	429171.72	2819371.20	429147.76	2819290.69
318	61450	429209.43	2819323.46	429219.64	2819356.94	429195.68	2819276.43
319	61500	429257.35	2819309.20	429267.56	2819342.68	429240.18	2819250.67
320	61550	429305.27	2819294.94	429314.06	2819323.63	429288.11	2819236.41
321	61600	429353.20	2819280.68	429361.98	2819309.37	429342.87	2819245.15
322	61650	429401.12	2819266.42	429409.91	2819295.11	429390.80	2819230.89
323	61700	429448.93	2819251.78	429458.56	2819280.20	429437.56	2819216.57
324	61750	429495.44	2819233.52	429515.93	2819276.93	429480.04	2819199.88
325	61800	429539.34	2819209.66	429565.08	2819250.17	429523.59	2819184.13
326	61850	429579.93	2819180.51	429610.52	2819217.50	429561.11	2819157.14
327	61900	429616.56	2819146.53	429651.52	2819179.42	429594.98	2819125.69
328	61950	429648.68	2819108.25	429685.05	2819134.74	429614.20	2819082.55
329	62000	429675.77	2819066.26	429715.16	2819088.02	429638.35	2819045.07
330	62050	429697.41	2819021.22	429739.21	2819037.90	429657.64	2819004.86
331	62100	429713.27	2818973.84	429742.28	2818981.46	429677.62	2818963.93
332	62150	429723.10	2818924.85	429752.84	2818928.72	429686.47	2818919.54
333	62200	429726.74	2818875.02	429748.73	2818875.00	429689.74	2818874.40
334	62250	429724.14	2818825.12	429745.95	2818822.31	429697.29	2818828.03
335	62300	429715.34	2818775.93	429736.63	2818770.37	429689.08	2818782.23
336	62350	429700.48	2818728.22	429720.88	2818720.00	429675.24	2818737.80
337	62400	429679.78	2818682.74	429709.75	2818666.69	429653.13	2818696.51
338	62450	429653.58	2818640.20	429681.26	2818620.47	429628.88	2818657.24
339	62500	429622.32	2818601.22	429644.45	2818580.97	429599.86	2818621.11
340	62550	429588.00	2818564.85	429609.46	2818543.89	429567.65	2818584.08
341	62600	429553.35	2818528.81	429574.81	2818507.84	429533.00	2818548.04
342	62650	429518.70	2818492.76	429544.48	2818467.64	429498.34	2818511.99

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
343	62700	429484.05	2818456.72	429509.83	2818431.59	429459.37	2818480.11
344	62750	429449.40	2818420.67	429475.28	2818395.65	429424.72	2818444.06
345	62800	429414.74	2818384.63	429434.76	2818365.05	429392.95	2818405.24
346	62850	429380.09	2818348.58	429400.11	2818329.00	429358.30	2818369.20
347	62900	429345.44	2818312.54	429365.46	2818292.96	429323.65	2818333.15
348	62950	429310.79	2818276.49	429330.81	2818256.91	429288.99	2818297.11
349	63000	429276.14	2818240.44	429296.16	2818220.86	429254.34	2818261.06
350	63050	429241.49	2818204.40	429265.83	2818180.66	429223.30	2818221.55
351	63100	429206.91	2818168.29	429231.54	2818144.85	429188.51	2818185.21
352	63150	429174.27	2818130.43	429196.33	2818113.17	429147.97	2818150.35
353	63200	429146.35	2818089.00	429170.42	2818074.67	429125.50	2818100.87
354	63250	429123.81	2818044.40	429149.50	2818033.25	429101.62	2818053.54
355	63300	429107.01	2817997.34	429133.90	2817989.54	429083.83	2818003.59
356	63350	429096.20	2817948.56	429123.81	2817943.84	429064.58	2817953.42
357	63400	429091.57	2817898.80	429121.55	2817897.57	429059.59	2817899.62
358	63450	429093.17	2817848.86	429123.07	2817851.44	429057.36	2817845.23
359	63500	429100.98	2817799.51	429130.31	2817805.86	429065.93	2817791.36
360	63550	429114.89	2817751.52	429137.53	2817759.49	429081.15	2817738.99
361	63600	429134.67	2817705.63	429156.12	2817716.41	429102.79	2817688.92
362	63650	429160.02	2817662.57	429180.11	2817675.71	429136.88	2817646.81
363	63700	429190.54	2817623.01	429211.82	2817641.21	429169.59	2817604.44
364	63750	429225.75	2817587.56	429244.55	2817608.32	429200.02	2817558.26
365	63800	429265.11	2817556.77	429281.13	2817579.75	429243.31	2817524.45
366	63850	429308.00	2817531.14	429320.97	2817555.96	429290.48	2817496.30
367	63900	429353.51	2817510.47	429362.16	2817530.70	429338.82	2817474.34
368	63950	429399.78	2817491.52	429408.34	2817511.79	429390.93	2817469.21
369	64000	429446.06	2817472.58	429454.65	2817492.84	429437.17	2817450.29
370	64050	429491.80	2817452.41	429504.03	2817476.48	429481.35	2817430.80
371	64100	429535.13	2817427.54	429550.21	2817449.92	429522.11	2817407.36
372	64150	429575.03	2817397.46	429592.83	2817417.75	429559.56	2817379.10
373	64200	429610.87	2817362.64	429631.10	2817380.51	429589.48	2817343.05
374	64250	429642.09	2817323.62	429664.43	2817338.78	429618.38	2817306.91
375	64300	429668.20	2817281.02	429705.31	2817300.68	429632.85	2817262.29
376	64350	429688.79	2817235.49	429728.06	2817250.38	429651.39	2817221.32
377	64400	429703.55	2817187.75	429749.23	2817198.80	429664.67	2817178.35
378	64450	429712.24	2817138.55	429758.94	2817143.81	429665.53	2817133.28
379	64500	429714.72	2817088.64	429761.72	2817088.05	429667.73	2817089.24
380	64550	429711.80	2817038.74	429753.64	2817035.09	429671.95	2817042.21
381	64600	429707.35	2816988.94	429749.18	2816985.19	429667.51	2816992.51
382	64650	429702.89	2816939.14	429750.70	2816934.86	429663.05	2816942.71
383	64700	429698.43	2816889.34	429746.24	2816885.05	429649.62	2816893.71
384	64750	429693.97	2816839.54	429765.68	2816833.11	429645.16	2816843.91
385	64800	429689.50	2816789.74	429761.22	2816783.31	429615.80	2816796.34

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
386	64850	429685.04	2816739.93	429762.73	2816732.98	429611.34	2816746.54
387	64900	429680.58	2816690.13	429758.27	2816683.18	429606.88	2816696.74
388	64950	429676.12	2816640.33	429753.81	2816633.37	429602.42	2816646.94
389	65000	429671.66	2816590.53	429749.35	2816583.57	429597.96	2816597.14
390	65050	429667.20	2816540.73	429744.89	2816533.77	429593.50	2816547.33
391	65100	429662.74	2816490.93	429740.43	2816483.97	429589.03	2816497.53
392	65150	429658.34	2816441.13	429726.11	2816435.54	429596.55	2816446.22
393	65200	429654.73	2816391.26	429709.63	2816387.84	429592.85	2816395.11
394	65250	429652.09	2816341.33	429707.03	2816338.74	429595.16	2816344.01
395	65300	429649.74	2816291.38	429704.68	2816288.80	429592.81	2816294.06
396	65350	429647.39	2816241.44	429687.35	2816239.56	429593.45	2816243.98
397	65400	429645.04	2816191.49	429685.00	2816189.61	429591.11	2816194.03
398	65450	429642.70	2816141.55	429682.65	2816139.67	429588.76	2816144.09
399	65500	429640.35	2816091.60	429680.30	2816089.72	429586.41	2816094.14
400	65550	429638.00	2816041.66	429677.95	2816039.78	429584.06	2816044.20
401	65600	429635.65	2815991.71	429675.60	2815989.83	429581.71	2815994.25
402	65650	429633.30	2815941.77	429673.26	2815939.89	429579.36	2815944.31
403	65700	429630.95	2815891.82	429670.91	2815889.95	429577.01	2815894.36
404	65750	429628.60	2815841.88	429668.56	2815840.00	429574.66	2815844.42
405	65800	429626.25	2815791.93	429666.21	2815790.06	429572.31	2815794.47
406	65850	429623.90	2815741.99	429663.85	2815739.87	429593.92	2815743.16
407	65900	429621.55	2815692.05	429661.50	2815689.93	429591.58	2815693.22
408	65950	429619.20	2815642.10	429659.15	2815639.98	429597.22	2815642.90
409	66000	429616.90	2815592.15	429652.86	2815590.49	429594.90	2815592.79
410	66050	429616.55	2815542.17	429652.54	2815543.14	429594.57	2815541.19
411	66100	429620.28	2815492.32	429650.11	2815495.51	429590.51	2815488.65
412	66150	429626.70	2815442.73	429656.47	2815446.45	429596.99	2815438.54
413	66200	429633.29	2815393.17	429663.06	2815396.89	429603.58	2815388.98
414	66250	429639.88	2815343.61	429669.65	2815347.32	429616.12	2815340.21
415	66300	429646.47	2815294.04	429676.24	2815297.76	429622.71	2815290.64
416	66350	429653.06	2815244.48	429682.83	2815248.20	429618.39	2815239.63
417	66400	429659.65	2815194.92	429709.24	2815201.27	429624.98	2815190.07
418	66450	429666.24	2815145.35	429715.83	2815151.70	429631.57	2815140.50
419	66500	429672.83	2815095.79	429722.42	2815102.14	429638.16	2815090.94
420	66550	429679.42	2815046.22	429741.90	2815054.29	429631.87	2815039.66
421	66600	429686.01	2814996.66	429748.49	2815004.73	429638.46	2814990.10
422	66650	429692.60	2814947.10	429755.08	2814955.16	429663.88	2814943.04
423	66700	429698.93	2814897.50	429744.66	2814902.42	429670.14	2814894.01
424	66750	429703.51	2814847.71	429749.41	2814850.72	429679.58	2814845.78
425	66800	429706.01	2814797.78	429729.01	2814798.21	429682.03	2814796.84
426	66850	429706.61	2814747.78	429729.61	2814747.62	429682.61	2814747.47
427	66900	429706.78	2814697.79	429729.78	2814697.62	429676.78	2814697.45
428	66950	429706.92	2814647.79	429729.92	2814647.50	429676.92	2814647.61

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
429	67000	429705.44	2814597.81	429733.37	2814595.88	429675.48	2814599.40
430	67050	429700.86	2814548.03	429728.62	2814544.35	429671.06	2814551.48
431	67100	429693.21	2814498.63	429732.51	2814491.18	429655.79	2814505.25
432	67150	429683.96	2814449.49	429723.22	2814441.84	429646.57	2814456.31
433	67200	429674.68	2814400.36	429706.08	2814394.19	429631.40	2814408.29
434	67250	429665.41	2814351.23	429696.81	2814345.06	429635.88	2814356.56
435	67300	429656.13	2814302.10	429687.53	2814295.93	429626.61	2814307.43
436	67350	429646.86	2814252.96	429683.17	2814245.87	429617.33	2814258.30
437	67400	429638.37	2814203.70	429675.00	2814198.45	429608.62	2814207.52
438	67450	429634.07	2814153.90	429671.03	2814152.34	429595.08	2814155.06
439	67500	429634.75	2814103.93	429671.69	2814106.06	429595.85	2814101.19
440	67550	429640.43	2814054.27	429683.87	2814061.23	429601.99	2814047.66
441	67600	429651.02	2814005.43	429693.59	2814016.58	429608.58	2813993.82
442	67650	429665.07	2813957.44	429709.19	2813970.46	429623.00	2813944.55
443	67700	429679.46	2813909.56	429723.59	2813922.58	429637.40	2813896.66
444	67750	429693.86	2813861.68	429737.98	2813874.69	429665.20	2813852.81
445	67800	429708.26	2813813.79	429746.56	2813825.31	429679.59	2813804.93
446	67850	429722.65	2813765.91	429760.96	2813777.43	429693.99	2813757.05
447	67900	429737.05	2813718.03	429775.35	2813729.54	429708.38	2813709.16
448	67950	429750.94	2813670.00	429789.66	2813680.04	429714.15	2813660.46
449	68000	429760.63	2813620.98	429798.33	2813625.77	429730.92	2813616.78
450	68050	429764.15	2813571.14	429802.16	2813571.19	429734.16	2813570.67
451	68100	429761.44	2813521.24	429799.15	2813516.55	429731.62	2813524.52
452	68150	429752.52	2813472.08	429785.47	2813463.68	429718.49	2813480.25
453	68200	429737.55	2813424.41	429769.19	2813411.97	429704.80	2813436.76
454	68250	429716.74	2813378.98	429751.00	2813360.33	429685.79	2813395.31
455	68300	429690.45	2813336.49	429722.20	2813313.85	429661.69	2813356.44
456	68350	429660.34	2813296.58	429691.01	2813272.48	429632.54	2813317.84
457	68400	429629.69	2813257.07	429650.88	2813240.33	429593.99	2813284.47
458	68450	429599.05	2813217.56	429620.23	2813200.83	429563.34	2813244.96
459	68500	429568.40	2813178.06	429598.27	2813154.58	429539.80	2813199.94
460	68550	429537.75	2813138.55	429567.62	2813115.07	429509.16	2813160.43
461	68600	429507.10	2813099.04	429536.98	2813075.57	429478.51	2813120.93
462	68650	429476.76	2813059.30	429507.33	2813036.75	429444.28	2813082.66
463	68700	429449.37	2813017.50	429503.60	2812985.47	429414.72	2813037.52
464	68750	429426.28	2812973.18	429483.44	2812946.72	429389.81	2812989.63
465	68800	429407.73	2812926.77	429453.06	2812911.01	429369.89	2812939.74
466	68850	429393.90	2812878.74	429440.58	2812867.58	429354.96	2812887.87
467	68900	429384.94	2812829.57	429408.71	2812826.23	429355.16	2812833.22
468	68950	429380.63	2812779.77	429404.58	2812778.17	429350.67	2812781.23
469	69000	429377.92	2812729.84	429411.86	2812727.77	429347.95	2812731.23
470	69050	429375.22	2812679.91	429409.16	2812677.84	429345.25	2812681.30
471	69100	429372.52	2812629.99	429394.97	2812628.54	429350.04	2812630.97

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
472	69150	429369.82	2812580.06	429392.27	2812578.61	429347.34	2812581.04
473	69200	429367.11	2812530.13	429389.57	2812528.68	429344.63	2812531.12
474	69250	429364.41	2812480.21	429386.87	2812478.76	429341.93	2812481.19
475	69300	429361.66	2812430.28	429384.10	2812428.65	429339.19	2812431.45
476	69350	429356.77	2812380.54	429412.20	2812372.53	429322.08	2812385.16
477	69400	429347.80	2812331.36	429402.37	2812318.77	429320.44	2812337.31
478	69450	429334.77	2812283.11	429388.10	2812266.02	429308.00	2812291.31
479	69500	429317.76	2812236.10	429369.48	2812214.64	429278.81	2812251.82
480	69550	429297.03	2812190.61	429347.22	2812165.76	429259.21	2812208.88
481	69600	429274.96	2812145.75	429304.46	2812130.97	429247.94	2812158.79
482	69650	429252.88	2812100.89	429282.38	2812086.11	429225.86	2812113.92
483	69700	429230.80	2812056.03	429255.82	2812043.45	429187.63	2812077.01
484	69750	429208.72	2812011.17	429233.74	2811998.59	429165.55	2812032.15
485	69800	429186.64	2811966.31	429211.63	2811953.68	429158.75	2811979.85
486	69850	429163.13	2811922.19	429187.04	2811907.63	429136.40	2811937.90
487	69900	429134.89	2811880.97	429166.25	2811856.14	429110.33	2811899.88
488	69950	429101.73	2811843.59	429129.75	2811815.05	429074.08	2811871.10
489	70000	429064.17	2811810.64	429088.42	2811778.82	429040.16	2811841.38
490	70050	429022.92	2811782.42	429034.59	2811763.19	429010.85	2811801.41
491	70100	428980.1563	2811756.514	428991.654	2811737.173	428968.4103	2811775.705
492	70150	428937.3428	2811730.687	428957.8797	2811696.362	428914.4914	2811768.289
493	70200	428894.5584	2811704.813	428915.3957	2811670.669	428871.378	2811742.212
494	70250	428853.0862	2811676.92	428877.1194	2811644.945	428826.407	2811711.91
495	70300	428815.2025	2811644.339	428838.1459	2811620.619	428791.3531	2811668.572
496	70350	428781.6764	2811607.288	428807.398	2811586.614	428754.9919	2811628.359
497	70400	428753.0312	2811566.347	428781.1297	2811549.041	428727.343	2811581.843
498	70450	428729.7138	2811522.153	428759.7507	2811508.486	428702.2941	2811534.326
499	70500	428712.0882	2811475.398	428745.5068	2811464.995	428683.3647	2811484.057
500	70550	428700.4293	2811426.81	428734.8841	2811420.654	428673.8058	2811431.305
501	70600	428694.9192	2811377.147	428729.8725	2811375.335	428667.9429	2811378.288
502	70650	428695.6428	2811327.185	428730.5507	2811329.726	428668.7335	2811324.968
503	70700	428701.3585	2811277.52	428732.101	2811281.51	428670.6547	2811273.242
504	70750	428708.0258	2811227.966	428738.7683	2811231.956	428677.322	2811223.689
505	70800	428714.6931	2811178.413	428745.4356	2811182.403	428686.9625	2811174.535
506	70850	428721.3604	2811128.859	428752.1029	2811132.849	428693.6298	2811124.982
507	70900	428728.0277	2811079.306	428758.7702	2811083.296	428700.2971	2811075.428
508	70950	428734.3354	2811029.707	428765.1857	2811032.753	428706.499	2811026.682
509	71000	428737.4161	2810979.817	428768.4129	2810980.284	428709.4244	2810979.119
510	71050	428736.3333	2810929.843	428770.2554	2810927.538	428700.3968	2810931.985
511	71100	428731.0947	2810880.133	428764.7072	2810875.013	428695.4612	2810885.259
512	71150	428721.8117	2810831.014	428754.9662	2810823.478	428686.642	2810838.703
513	71200	428710.7438	2810782.255	428739.9647	2810775.461	428681.4585	2810788.766
514	71250	428699.702	2810733.489	428728.975	2810726.923	428670.3669	2810739.772

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
515	71300	428690.927	2810684.285	428720.6898	2810680.518	428664.107	2810687.402
516	71350	428687.9842	2810634.405	428717.9845	2810634.378	428660.9849	2810634.154
517	71400	428691.2832	2810584.546	428718.0777	2810587.874	428664.5259	2810580.931
518	71450	428700.7726	2810535.488	428726.9432	2810542.131	428674.6749	2810528.565
519	71500	428716.3043	2810487.996	428741.4425	2810497.849	428696.8476	2810480.093
520	71550	428737.6358	2810442.811	428761.3494	2810455.721	428719.3163	2810432.543
521	71600	428764.4344	2810400.637	428787.9707	2810417.58	428747.5379	2810388.166
522	71650	428796.268	2810362.122	428817.5921	2810381.776	428780.9968	2810347.706
523	71700	428831.3472	2810326.497	428851.8927	2810346.964	428811.7123	2810306.535
524	71750	428866.8116	2810291.251	428887.3571	2810311.718	428847.1767	2810271.289
525	71800	428902.276	2810256.005	428922.8215	2810276.472	428882.6411	2810236.043
526	71850	428937.7404	2810220.759	428958.2859	2810241.226	428918.1055	2810200.797
527	71900	428973.1907	2810185.499	428990.9924	2810203.052	428953.4698	2810165.622
528	71950	429007.6511	2810149.278	429026.1681	2810166.075	428987.1198	2810130.238
529	72000	429041.4542	2810112.435	429063.6576	2810132.61	429020.9205	2810093.399
530	72050	429075.2572	2810075.593	429097.4606	2810095.768	429054.7235	2810056.556
531	72100	429109.0602	2810038.751	429131.2636	2810058.926	429085.5792	2810017.01
532	72150	429143.1738	2810002.198	429159.0629	2810017.415	429120.3101	2809979.809
533	72200	429178.8715	2809967.196	429193.9803	2809983.188	429161.929	2809948.812
534	72250	429216.274	2809934.022	429234.4318	2809955.337	429200.2715	2809914.814
535	72300	429255.2878	2809902.758	429272.3576	2809924.954	429232.9991	2809873.225
536	72350	429295.7647	2809873.411	429311.9486	2809896.261	429280.9658	2809852.034
537	72400	429336.7262	2809844.738	429352.9017	2809867.594	429321.9351	2809823.355
538	72450	429377.6881	2809816.065	429393.8636	2809838.921	429360.6032	2809791.405
539	72500	429418.6379	2809787.376	429432.0545	2809806.057	429401.4104	2809762.815
540	72550	429458.8703	2809757.693	429472.9954	2809775.845	429440.7112	2809733.813
541	72600	429497.9316	2809726.486	429512.7443	2809744.081	429478.8677	2809703.321
542	72650	429535.7641	2809693.799	429551.2424	2809710.812	429514.487	2809669.897
543	72700	429572.7578	2809660.162	429592.3872	2809681.51	429551.3232	2809636.401
544	72750	429609.7317	2809626.503	429629.3611	2809647.851	429588.2972	2809602.742
545	72800	429646.7057	2809592.844	429666.3351	2809614.192	429625.2712	2809569.083
546	72850	429683.6797	2809559.185	429701.2896	2809578.314	429662.2452	2809535.424
547	72900	429720.6537	2809525.526	429738.2635	2809544.655	429705.2778	2809508.421
548	72950	429757.6276	2809491.867	429775.2375	2809510.996	429742.2517	2809474.762
549	73000	429794.6016	2809458.208	429812.2115	2809477.337	429779.2257	2809441.103
550	73050	429831.5756	2809424.55	429849.1855	2809443.678	429816.1997	2809407.444
551	73100	429868.5496	2809390.891	429894.9108	2809419.633	429853.1737	2809373.785
552	73150	429905.5235	2809357.232	429925.8261	2809379.318	429886.7817	2809336.429
553	73200	429942.4975	2809323.573	429962.8001	2809345.659	429923.7557	2809302.77
554	73250	429979.4715	2809289.914	429999.7741	2809312.001	429956.0174	2809263.934
555	73300	430016.4455	2809256.255	430040.1139	2809282.039	429992.9914	2809230.275
556	73350	430053.4194	2809222.596	430077.0879	2809248.38	430029.9654	2809196.616
557	73400	430090.3934	2809188.937	430104.6374	2809204.368	430070.3053	2809166.655

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
558	73450	430127.3674	2809155.278	430141.5022	2809170.809	430107.1701	2809133.095
559	73500	430164.3414	2809121.619	430178.4762	2809137.15	430144.1441	2809099.436
560	73550	430201.3153	2809087.96	430215.4502	2809103.491	430181.1181	2809065.777
561	73600	430238.2893	2809054.301	430252.4242	2809069.832	430218.092	2809032.118
562	73650	430275.2633	2809020.642	430289.3981	2809036.173	430255.066	2808998.459
563	73700	430312.2373	2808986.983	430326.3721	2809002.514	430292.04	2808964.801
564	73750	430349.2112	2808953.324	430363.3461	2808968.855	430329.014	2808931.142
565	73800	430386.1841	2808919.664	430400.3317	2808935.183	430367.9898	2808899.715
566	73850	430422.3982	2808885.198	430437.3147	2808899.979	430403.2156	2808866.197
567	73900	430456.4556	2808848.602	430472.2662	2808862.423	430436.1237	2808830.836
568	73950	430488.1607	2808809.95	430511.9371	2808828.244	430466.7589	2808793.489
569	74000	430517.3898	2808769.393	430542.2624	2808786.166	430495.0016	2808754.301
570	74050	430544.0286	2808727.09	430578.5247	2808747.339	430520.7415	2808713.425
571	74100	430567.9732	2808683.205	430603.6667	2808701.26	430534.0621	2808666.058
572	74150	430589.285	2808637.98	430625.7535	2808654.413	430554.6378	2808622.373
573	74200	430609.8213	2808592.392	430646.2906	2808608.824	430575.1735	2808576.787
574	74250	430630.3828	2808546.816	430666.7643	2808563.441	430604.914	2808535.182
575	74300	430652.3943	2808501.93	430693.0498	2808523.45	430627.6454	2808488.834
576	74350	430677.1489	2808458.497	430716.3809	2808482.515	430653.2663	2808443.881
577	74400	430704.5679	2808416.696	430729.1252	2808433.927	430681.6449	2808400.617
578	74450	430734.5443	2808376.688	430757.9774	2808395.42	430712.6703	2808359.209
579	74500	430766.961	2808338.631	430792.1409	2808361.478	430746.2215	2808319.82
580	74550	430801.6915	2808302.673	430825.3952	2808327.048	430782.1674	2808282.603
581	74600	430838.6001	2808268.954	430860.7351	2808294.762	430820.3676	2808247.704
582	74650	430877.2365	2808237.221	430894.8386	2808258.996	430859.6303	2808215.448
583	74700	430916.1181	2808205.785	430933.7202	2808227.56	430898.512	2808184.013
584	74750	430954.9998	2808174.349	430972.6019	2808196.124	430937.3937	2808152.577
585	74800	430993.8815	2808142.913	431011.4835	2808164.688	430976.2753	2808121.141
586	74850	431032.7631	2808111.477	431050.3652	2808133.252	431015.157	2808089.705
587	74900	431071.6448	2808080.041	431089.2469	2808101.816	431054.0386	2808058.269
588	74950	431110.5264	2808048.605	431128.1285	2808070.38	431092.9203	2808026.833
589	75000	431149.4081	2808017.169	431167.0102	2808038.945	431131.802	2807995.397
590	75050	431188.2897	2807985.733	431213.4365	2808016.84	431170.6836	2807963.961
591	75100	431227.1714	2807954.297	431252.3181	2807985.404	431205.793	2807927.859
592	75150	431266.0531	2807922.861	431291.1998	2807953.968	431244.6746	2807896.424
593	75200	431304.9347	2807891.426	431330.0814	2807922.532	431283.5563	2807864.988
594	75250	431343.8164	2807859.99	431361.4185	2807881.765	431316.7795	2807826.553
595	75300	431382.698	2807828.554	431400.3001	2807850.329	431355.6611	2807795.117
596	75350	431421.5797	2807797.118	431439.1818	2807818.893	431394.5428	2807763.681
597	75400	431460.4614	2807765.682	431478.0634	2807787.457	431437.8255	2807737.689
598	75450	431499.343	2807734.246	431516.9451	2807756.021	431476.7071	2807706.253
599	75500	431538.2247	2807702.81	431555.8268	2807724.585	431518.1037	2807677.927
600	75550	431577.1063	2807671.374	431600.9956	2807700.926	431556.9853	2807646.492

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
601	75600	431616.2944	2807640.324	431639.355	2807670.527	431596.8712	2807614.893
602	75650	431656.6536	2807610.815	431678.4361	2807641.952	431638.3065	2807584.597
603	75700	431698.2061	2807583.012	431714.3851	2807608.275	431680.944	2807556.067
604	75750	431740.4873	2807556.323	431756.4685	2807581.712	431723.4362	2807529.244
605	75800	431782.8	2807529.684	431798.7812	2807555.073	431765.7488	2807502.605
606	75850	431825.1127	2807503.045	431841.0939	2807528.434	431808.0615	2807475.966
607	75900	431867.4254	2807476.406	431883.5307	2807501.717	431853.695	2807454.327
608	75950	431909.7381	2807449.767	431925.8434	2807475.078	431896.0077	2807427.688
609	76000	431952.0507	2807423.128	431968.1561	2807448.439	431938.3204	2807401.049
610	76050	431994.3634	2807396.489	432010.4688	2807421.8	431980.6331	2807374.41
611	76100	432036.6761	2807369.85	432052.7815	2807395.161	432017.0852	2807338.462
612	76150	432078.9888	2807343.211	432095.0942	2807368.522	432059.3979	2807311.823
613	76200	432121.3015	2807316.572	432137.4068	2807341.883	432105.9728	2807291.954
614	76250	432163.6142	2807289.933	432179.7195	2807315.244	432148.2855	2807265.315
615	76300	432205.9269	2807263.294	432227.36	2807297.067	432190.5982	2807238.676
616	76350	432248.2395	2807236.655	432269.6727	2807270.428	432232.9109	2807212.037
617	76400	432290.5522	2807210.016	432305.592	2807233.634	432277.3547	2807188.783
618	76450	432332.6924	2807183.108	432348.3822	2807206.3	432318.9103	2807162.25
619	76500	432372.6565	2807153.109	432390.9223	2807174.332	432356.5554	2807133.984
620	76550	432408.6098	2807118.409	432429.379	2807137.188	432390.2499	2807101.441
621	76600	432439.9564	2807079.497	432466.9879	2807098.427	432409.7493	2807058.131
622	76650	432466.2071	2807036.981	432495.3877	2807052.392	432433.5718	2807019.547
623	76700	432486.9522	2806991.523	432517.8266	2807003.176	432452.398	2806978.294
624	76750	432502.1491	2806943.912	432538.8466	2806953.777	432466.4479	2806934.194
625	76800	432514.8938	2806895.563	432551.6891	2806905.057	432479.1023	2806886.184
626	76850	432527.5683	2806847.196	432564.3637	2806856.69	432491.7769	2806837.817
627	76900	432540.2429	2806798.83	432570.2669	2806806.548	432504.4514	2806789.45
628	76950	432552.9175	2806750.463	432582.9415	2806758.182	432517.126	2806741.084
629	77000	432565.5921	2806702.096	432595.5795	2806709.954	432529.8006	2806692.717
630	77050	432578.2666	2806653.729	432608.2541	2806661.587	432542.4751	2806644.35
631	77100	432590.9412	2806605.362	432620.9287	2806613.22	432555.1497	2806595.983
632	77150	432603.6158	2806556.995	432643.2766	2806567.388	432560.0856	2806545.588
633	77200	432616.2903	2806508.628	432655.9512	2806519.021	432572.7601	2806497.221
634	77250	432628.9649	2806460.261	432668.6257	2806470.655	432585.4347	2806448.854
635	77300	432641.6395	2806411.895	432681.3003	2806422.288	432598.1093	2806400.487
636	77350	432654.314	2806363.528	432693.9749	2806373.921	432610.7838	2806352.121
637	77400	432666.9886	2806315.161	432706.6494	2806325.554	432616.687	2806301.979
638	77450	432679.475	2806266.746	432730.9923	2806279.194	432628.9297	2806254.532
639	77500	432690.4057	2806217.956	432742.1758	2806229.307	432622.03	2806202.964
640	77550	432701.1145	2806169.116	432779.2581	2806186.251	432632.7389	2806154.124
641	77600	432711.8233	2806120.277	432789.9669	2806137.411	432643.4477	2806105.284
642	77650	432722.5322	2806071.437	432800.6758	2806088.571	432654.1565	2806056.445
643	77700	432733.2508	2806022.599	432811.3475	2806039.946	432647.3444	2806003.518

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design	CENTRELINE		LEFT SIDE		RIGHT SIDE	
	Chainage	Easting	Northing	Northing	Easting	Easting	Northing
644	77750	432745.5578	2805974.151	432822.1491	2805997.254	432661.3073	2805948.737
645	77800	432762.2195	2805927.025	432836.6306	2805956.402	432680.3674	2805894.711
646	77850	432780.8556	2805880.628	432855.0679	2805910.503	432699.222	2805847.765
647	77900	432799.5276	2805834.245	432873.7399	2805864.121	432717.8941	2805801.382
648	77950	432818.1997	2805787.863	432883.1355	2805814.004	432747.698	2805759.481
649	78000	432836.8718	2805741.48	432901.8076	2805767.621	432766.3701	2805713.098
650	78050	432855.5439	2805695.097	432907.4925	2805716.01	432799.8847	2805672.691
651	78100	432874.216	2805648.715	432926.1646	2805669.627	432818.5568	2805626.308
652	78150	432892.8881	2805602.332	432932.7772	2805618.39	432858.5649	2805588.515
653	78200	432911.298	2805555.846	432951.5645	2805570.933	432876.65	2805542.864
654	78250	432927.9088	2805508.687	432968.5579	2805522.711	432892.9317	2805496.621
655	78300	432944.2151	2805461.421	432984.8641	2805475.444	432909.238	2805449.354
656	78350	432960.5213	2805414.155	432990.7718	2805424.591	432931.2162	2805404.045
657	78400	432976.8275	2805366.888	433007.078	2805377.324	432947.5224	2805356.779
658	78450	432993.1338	2805319.622	433023.3842	2805330.058	432963.8286	2805309.512
659	78500	433009.44	2805272.356	433039.6905	2805282.792	432980.1349	2805262.246
660	78550	433025.7462	2805225.089	433048.4341	2805232.916	432996.4411	2805214.98
661	78600	433042.7163	2805178.063	433065.0163	2805186.937	433013.9138	2805166.601

1. Interchange At Ch. 54+750 km (Existing SH -09 Crossing)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
1	0	423299.67	2820395.90	423275.38	2820401.83	423323.96	2820389.97
2	10	423302.04	2820405.61	423277.76	2820411.54	423326.33	2820399.68
3	20	423304.42	2820415.33	423280.13	2820421.26	423328.70	2820409.40
4	30	423306.79	2820425.04	423282.50	2820430.98	423331.07	2820419.10
5	40	423309.20	2820434.74	423284.99	2820440.96	423333.42	2820428.53
6	50	423311.81	2820444.40	423287.78	2820451.28	423335.85	2820437.52
7	60	423314.72	2820453.97	423290.93	2820461.64	423338.51	2820446.29
8	70	423317.95	2820463.43	423294.43	2820471.89	423341.47	2820454.97
9	80	423321.49	2820472.78	423298.26	2820482.02	423344.72	2820463.54
10	90	423325.34	2820482.01	423302.44	2820492.02	423348.25	2820472.00
11	100	423329.50	2820491.10	423306.94	2820501.87	423352.06	2820480.33
ROW from Chainage 100 to 230 already considered in ROW of Main carriageway above							
12	230	423397.62	2820601.60	423379.07	2820618.36	423416.18	2820584.84
13	240	423404.68	2820608.68	423387.87	2820627.18	423421.49	2820590.17
14	250	423412.40	2820615.02	423397.52	2820635.11	423427.28	2820594.93

15	260	423420.72	2820620.56	423407.92	2820642.04	423433.52	2820599.09
16	270	423429.56	2820625.24	423418.96	2820647.89	423440.15	2820602.60
17	280	423438.81	2820629.02	423430.53	2820652.61	423447.09	2820605.43
18	290	423448.40	2820631.86	423442.51	2820656.15	423454.28	2820607.56
19	300	423458.22	2820633.72	423454.79	2820658.48	423461.64	2820608.95
20	310	423468.17	2820634.60	423467.16	2820659.58	423469.19	2820609.62
21	320	423478.17	2820634.60	423479.09	2820659.58	423477.26	2820609.62
22	330	423488.15	2820633.94	423490.43	2820658.83	423485.86	2820609.04
23	340	423498.09	2820632.84	423501.19	2820657.65	423494.99	2820608.04
24	350	423508.00	2820631.53	423510.29	2820648.38	423505.72	2820614.69
25	360	423517.91	2820630.19	423520.20	2820647.04	423515.63	2820613.34
26	370	423527.82	2820628.85	423530.10	2820645.69	423525.54	2820612.00
27	380	423537.73	2820627.50	423540.01	2820644.35	423535.44	2820610.66
28	390	423547.64	2820626.20	423549.73	2820643.07	423545.56	2820609.33
29	400	423557.59	2820625.12	423559.10	2820642.05	423556.07	2820608.19
30	410	423567.56	2820624.49	423568.12	2820641.48	423567.00	2820607.50
31	420	423577.56	2820624.53	423576.79	2820641.52	423578.33	2820607.55
32	430	423587.51	2820625.47	423585.09	2820642.29	423589.94	2820608.64
33	440	423597.32	2820627.38	423593.24	2820643.88	423601.41	2820610.88
34	450	423606.89	2820630.27	423601.18	2820646.28	423612.61	2820614.26
35	460	423616.13	2820634.10	423608.84	2820649.46	423623.41	2820618.74
36	470	423624.93	2820638.83	423616.15	2820653.38	423633.72	2820624.27
37	480	423633.22	2820644.41	423623.03	2820658.02	423643.42	2820630.81
38	490	423640.93	2820650.78	423629.51	2820663.38	423652.34	2820638.19
39	500	423648.07	2820657.78	423635.78	2820669.52	423660.37	2820646.04
40	510	423654.78	2820665.19	423641.92	2820676.30	423667.65	2820654.08
41	520	423661.20	2820672.86	423648.03	2820683.61	423674.37	2820662.10
42	530	423667.49	2820680.63	423654.33	2820691.38	423680.69	2820669.85

2. Interchange At Ch. 64+970 km (Existing SH-07 Crossing)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
1	0	429425.21	2816610.48	429438.27	2816617.85	429412.14	2816603.11
2	10	429430.14	2816601.78	429443.14	2816609.26	429417.14	2816594.29
3	20	429435.32	2816593.23	429447.90	2816601.41	429422.75	2816585.05
4	30	429441.17	2816585.12	429452.82	2816594.56	429429.51	2816575.68
5	40	429448.01	2816577.84	429458.07	2816588.96	429437.94	2816566.71
6	50	429456.02	2816571.88	429463.73	2816584.75	429448.31	2816559.01
7	60	429465.05	2816567.63	429470.05	2816581.78	429460.05	2816553.49
8	70	429474.75	2816565.26	429476.84	2816580.12	429472.66	2816550.41
9	80	429484.73	2816564.82	429484.06	2816579.81	429485.39	2816549.84
10	90	429494.65	2816565.98	429491.97	2816580.74	429497.33	2816551.22
11	100	429504.39	2816568.23	429500.47	2816582.70	429508.32	2816553.75

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
12	110	429513.98	2816571.06	429505.41	2816598.76	429522.56	2816543.35
13	120	429523.53	2816574.02	429514.93	2816601.72	429532.14	2816546.33
14	130	429533.08	2816576.99	429524.48	2816604.68	429541.69	2816549.29
15	140	429542.63	2816579.96	429534.03	2816607.65	429551.24	2816552.26
16	150	429552.18	2816582.92	429543.58	2816610.62	429560.79	2816555.23
17	160	429561.73	2816585.89	429553.13	2816613.58	429570.34	2816558.20
18	170	429571.28	2816588.86	429562.68	2816616.55	429579.89	2816561.16
19	180	429580.83	2816591.82	429572.23	2816619.52	429589.44	2816564.13
20	190	429590.38	2816594.79	429581.78	2816622.48	429598.99	2816567.10
21	200	429599.93	2816597.76	429591.33	2816625.45	429608.54	2816570.06
ROW from Chainage 200 to 360 already considered in ROW of Main carriageway above							
22	360	429752.73	2816645.23	429744.12	2816672.92	429761.33	2816617.53
23	370	429762.28	2816648.19	429753.67	2816675.89	429770.88	2816620.50
24	380	429771.83	2816651.16	429763.22	2816678.85	429780.43	2816623.47
25	390	429781.38	2816654.13	429772.77	2816681.82	429789.98	2816626.43
26	400	429790.93	2816657.09	429782.32	2816684.79	429799.53	2816629.40
27	410	429800.48	2816660.06	429791.87	2816687.75	429809.08	2816632.37
28	420	429810.03	2816663.03	429801.42	2816690.72	429818.63	2816635.33
29	430	429819.58	2816665.99	429810.97	2816693.69	429828.18	2816638.30
30	440	429829.13	2816668.96	429820.52	2816696.66	429837.73	2816641.27
31	450	429838.68	2816671.93	429830.07	2816699.62	429847.28	2816644.23
32	460	429848.23	2816674.89	429842.29	2816702.59	429856.83	2816647.19
33	470	429857.78	2816677.86	429851.84	2816705.56	429866.38	2816650.16
34	480	429867.33	2816680.83	429861.39	2816708.53	429875.93	2816653.13
35	490	429876.88	2816683.79	429870.94	2816711.50	429885.48	2816656.10
36	500	429886.43	2816686.76	429880.49	2816714.47	429895.03	2816659.07
37	510	429895.98	2816689.73	429890.04	2816717.44	429904.58	2816662.04
38	520	429905.52	2816692.70	429899.59	2816720.41	429914.13	2816665.01
39	530	429915.07	2816695.66	429909.14	2816723.38	429923.68	2816668.00
40	540	429924.62	2816698.63	429918.69	2816726.35	429933.23	2816670.97
41	550	429934.17	2816701.60	429928.24	2816729.32	429942.78	2816673.94
42	560	429943.72	2816704.56	429937.79	2816732.29	429952.33	2816676.91
43	570	429953.27	2816707.53	429947.34	2816735.26	429961.88	2816679.88

3. Interchange At Ch. 77+750 km (Existing NH-06 Crossing)

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
1	100	432540.17	2805926.84	432543.68	2805946.53	432536.66	2805907.15
2	110	432550.08	2805925.58	432551.61	2805945.52	432548.55	2805905.64
3	120	432560.07	2805925.32	432559.60	2805945.31	432560.55	2805905.32
4	130	432570.04	2805926.04	432567.69	2805945.90	432572.40	2805906.18

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
5	140	432579.92	2805927.59	432576.12	2805947.23	432583.72	2805907.96
6	150	432589.68	2805929.76	432584.89	2805949.18	432594.48	2805910.34
7	160	432599.35	2805932.31	432594.00	2805951.59	432604.70	2805913.04
8	170	432608.97	2805935.04	432601.57	2805961.00	432618.29	2805902.34
9	180	432618.59	2805937.78	432611.19	2805963.75	432627.91	2805905.08
10	190	432628.21	2805940.52	432620.80	2805966.49	432637.53	2805907.82
11	200	432637.82	2805943.26	432630.42	2805969.23	432647.14	2805910.57
12	210	432647.44	2805946.01	432640.04	2805971.97	432656.76	2805913.31
13	220	432657.06	2805948.75	432649.65	2805974.71	432666.38	2805916.05
ROW from Chainage 220 to 390 already considered in ROW of Main carriageway above							
14	390	432820.54	2805995.35	432812.87	2806022.28	432831.23	2805957.85
15	400	432830.16	2805998.10	432822.48	2806025.02	432840.85	2805960.59
16	410	432839.78	2806000.84	432832.10	2806027.76	432850.47	2805963.33
17	420	432849.39	2806003.58	432841.72	2806030.51	432860.08	2805966.07
18	430	432859.01	2806006.32	432851.33	2806033.25	432869.70	2805968.81
19	440	432868.63	2806009.05	432861.10	2806036.02	432879.12	2805971.49
20	450	432878.29	2806011.64	432871.40	2806038.78	432887.89	2805973.84
21	460	432888.03	2806013.91	432882.30	2806041.32	432896.00	2805975.73
22	470	432897.87	2806015.67	432894.99	2806035.46	432901.33	2805991.92
23	480	432907.81	2806016.78	432906.25	2806036.72	432909.68	2805992.85
24	490	432917.79	2806017.23	432917.49	2806037.23	432918.16	2805993.24
25	500	432927.79	2806017.14	432928.39	2806037.13	432927.07	2805993.15
26	510	432937.78	2806016.70	432938.90	2806036.66	432936.44	2805992.73
27	520	432947.76	2806016.08	432949.03	2806036.04	432946.24	2805992.13
28	530	432957.74	2806015.45	432959.01	2806035.41	432956.22	2805991.50
29	540	432967.72	2806014.82	432968.99	2806034.78	432966.20	2805990.87
30	550	432977.70	2806014.19	432978.97	2806034.15	432976.18	2805990.23
31	560	432987.68	2806013.55	432988.95	2806033.51	432986.16	2805989.60
32	570	432997.66	2806012.92	432998.93	2806032.88	432996.14	2805988.97
33	580	433007.64	2806012.29	433008.91	2806032.25	433006.12	2805988.34
34	585	433012.63	2806011.97	433013.90	2806031.93	433011.11	2805988.02

SCHEDULE – B

(See Clause 2.1)

DEVELOPMENT OF THE PROJECT HIGHWAY

1 Development of the Project Highway

The Project Highway shall generally follow the alignment plan specified in Annex-III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC: SP:84, the proposed plan & profile, locations of different structures/drains/service & slip road/RE walls, Chainage of different structures/drains/service & slip road/RE walls, length of different structures/drains/service & slip road/RE walls etc. of the project highway as indicated in the Schedule A, Schedule B, Schedule C and their Annexures shall be treated as minimum requirement. Based on site/design requirement, the Concessionaire shall finalize their Detailed Designs (Development stage) including plan & profile of the project highway as described in this **Schedule-B** and in **Schedule-C** and submit the same to Authority & Independent Engineer for its Consent/Approval and Safety Audit by Safety Auditor, before the start of the execution of project.

The Concessionaire shall, at its own cost and expense, deploy grading, paving and compaction equipment fitted with Machine Guidance & Control System (MGCS) for finishing of all grades including Embankment, Subgrade, GSB, WMM, DBM/DLC & BC/SMA/PQC. The Machine Guidance & Control System used by the Concessionaire shall be capable of delivering accuracy as per the applicable IRC specifications. During the construction period, the concessionaire shall furnish all the physical Progress Data (All types of Surface Grading Data, Compaction, Temperature Data, etc.) obtained through Machine Control and Guidance System/CMS to Authority & Independent Engineer for monitoring of construction on daily basis. These digital data and desired output shall be made available at the location (Server/Cloud) finalised by Authority'.

NHIDCL reserves the right to check/verify design calculations and drawings of all components of the stretch of National Highway including the structures falling within the scope of work. The Concessionaire shall be required to furnish all data pertaining to detailed designs, drawings, calculations, Design Basis Report, input files of Design Software used in the project, etc. to the Authority and/or the Independent Engineer free of cost within a time as specified by the Authority and/or the Independent Engineer.

2 Rehabilitation and Augmentation

Rehabilitation and augmentation shall include Four lane road with Paved shoulders configuration & Six Lane structures including approaches as described in Annex-I of this Schedule-B and in Schedule-C.

3 Specifications & Standards

The Project Highway shall be designed and constructed in conformity with the specifications and standards set forth in **Annex-I** of **Schedule-D**.

ANNEX – I
(Schedule-B)
Description of the Project

1 DEVELOPMENT OF THE PROJECT HIGHWAY

The Project Highway shall generally follow the alignment plan specified in Annex-III of Schedule-A, unless otherwise specified by the Authority. Notwithstanding anything to the contrary contained in this Agreement or IRC: SP:84, the proposed plan & profile, locations of different structures/drains/service & slip road/RE walls, Chainage of different structures/drains/service & slip road/RE walls, length of different structures/drains/service & slip road/RE walls etc. of the project highway as indicated in the Schedule A, Schedule B, Schedule C and their Annexures shall be treated as minimum requirement. Based on site/design requirement, the Concessionaire shall finalize their Detailed Designs (Development stage) including plan & profile of the project highway as described in this **Schedule-B** and in **Schedule-C** and submit the same to Authority & Independent Engineer for its Consent/Approval and Safety Audit by Safety Auditor, before the start of the execution of project.

The concessionaire/contractor shall, at its own cost and expense adopt Automated & Intelligent Machine aided Construction (AI-MC) for execution of the project in line with MoRTH circular No. RW/NH-33044/31/2024-S&R(P&B)(Computer No. 245397) dt. 23.06.2025 The Concessionaire shall, at its own cost and expense, deploy grading, paving and compaction equipment fitted with Machine Guidance & Control System (MGCS) for finishing of all grades including Embankment, Subgrade, GSB/CTSB, WMM/CTB, DBM/DLC & BC/SMA/PQC. The Machine Guidance & Control System used by the Concessionaire shall be capable of delivering accuracy as per the applicable IRC specifications and MoRTH circular No. RW/NH-33044/31/2024-S&R(P&B)(Computer No. 245397) dt. 23.06.2025. During the construction period, the Concessionaire shall furnish all the physical Progress Data (All types of Surface Grading Data, Compaction, Temperature Data, etc.) obtained through Machine Control and Guidance System/CMS to Authority & Independent Engineer for monitoring of construction on daily basis. These digital data and desired output shall be made available at the location (Server/Cloud) finalised by Authority.

NHIDCL reserves the right to check/verify design calculations and drawings of all components of the stretch of National Highway including the structures falling within the scope of work. The Concessionaire shall be required to furnish all data pertaining to detailed designs, drawings, calculations, Design Basis Report, input files of Design Software used in the project, etc. to the Authority and/or the Independent Engineer free of cost within a time as specified by the Authority and/or the Independent Engineer.

1.1 Width of Carriageway

- 1.1.1 Four lane road with paved shoulders configuration & four/six Lane structures including approaches shall be undertaken. The paved carriageway shall be 18.0 metre for four laning (including paved shoulder of 1.5m and kerb shyness) and 25m for Six laning (including paved shoulder of 1.5m and kerb shyness). The earthen shoulder shall be 2.0 metre on valley side for main carriageway and 1.0 m on both sides for ramps/loops in case of embankment.
- 1.1.2 In built-up sections/areas the width of paved carriageway shall be 18.0 metre for four laning (including paved shoulder of 1.5m and kerb shyness).

The project road is passing through the built-up areas as given below:

S. No.	Existing Chainage (km)		Design Chainage (km)		Length (km)	Side	Village name
	From	To	From	To		(LHS / RHS / Both)	
Nil							

- 1.1.3 Except as otherwise provided in this Agreement, the width shall be adjusted to fit into appropriate plans and cross sections developed in accordance with TCS enclosed.
- 1.1.4 The entire cross-sectional elements shall be accommodated in the available/proposed ROW. If required, suitable retaining structures shall be provided to accommodate the highway cross-section within the available/proposed ROW. The details of such section are mentioned in Schedule-B. Retaining structures over and above the quantities mentioned in Sch-B shall not constitute a Change of Scope up to the positive variation of 10% of the Scope.

1.2 Width of Median

- 1.2.1 The width of median including kerb shyness shall be 5.0 metre with Flushed median (With turfing on either side) for all the sections including built up section.
- 1.2.2 The metal beam (Thrie-beam) crash barrier shall be provided on either side of median side as shown in TCS. Thrie beam crash barrier shall also be provided in at all places as shown in all TCS drawings.
- 1.2.3 Deleted
- 1.2.4 A suitable anti-glare measures shall be proposed. (Clause No. 2.5.6 IRC:SP:84)

2 GEOMETRIC DESIGN & GENERAL FEATURES OF PROJECT HIGHWAY

- 2.1 **General:** Geometric design and general features of the Project Highway shall be in accordance with Section 2 of the Manual. Intermediate sight distance (desirable minimum sight distance) shall be followed for design of all summit vertical curves and Headlight Sight Distance for all Valley curves including structures as well as highways.
- 2.2 **Design Speed:** The project road shall be designed for 80 Kmph considering High Speed Corridor.

2.3 Improvement of the existing road geometrics

- 2.3.1** The existing road geometrics shall be improved as per the codal provisions. In the following sections, where improvement of the existing road geometrics to the prescribed standards is not possible, the existing road geometrics shall be improved to the extent possible within the given right of way and appropriate safety measures shall be provided in form of road signs, pavement markings etc.

The deficient stretches are as follows.

Sr. No.	Stretch (Design Chainage) (km)		Type of deficiency	Remarks
	From	To		
Nil				

- 2.3.2** The entire cross-sectional elements shall be accommodated in the available/proposed ROW. If required, suitable full height retaining structures shall be provided to accommodate the highway cross section within the available/ proposed ROW. The details of such sections are mentioned in Schedule-B. Retaining structures over and above the quantities mentioned in Sch-B shall not constitute a Change of Scope up to the positive variation of 10% of the Scope.

2.3.3 Realignments

The existing road shall improve to the standards as specified in the Manual at the following locations:

Sr. No.	Existing Chainage (km)		Design Chainage (km)		Length (km)
	From	To	From	To	
	Nil				

2.3.4 Bypasses

The existing road shall be bypassed to the standards as specified in the Manual at the following locations:

Sr. No.	Name of Bypass	Existing Chainage(km)		Design Chainage (km)		Length (km)
		From	To	From	To	
Nil						

2.4 Right of Way

Details of the Right of Way along Project Highways are given in Annex-II of Schedule-A.

2.5 Type of shoulders

- 2.5.1** The Design Specification of paved shoulder shall conform to the requirements specified in Paragraph 5.10 of the Manual.
- 2.5.2** Paved shoulders and the edge strip on median side shall be of same specification and pavement composition as of main carriageway.
- 2.5.3** Deleted
- 2.5.4** Deleted

2.5.5 In open country, paved shoulders of 1.5m width shall be provided.

2.5.6 The Design Specification of earthen shoulder shall conform to the requirements specified in Paragraph 5.11 of the Manual.

2.5.7 The earthen shoulder of 2.0m width on Main Carriageway and 1.0m width on Ramps of Interchanges shall be provided with top 150 mm with well graded naturals or moorum gravel crust stones or combination thereof, confirming to Clause 401 of MoRTH specification.

2.6 Lateral and Vertical Clearance at Underpasses

2.6.1 In case of VUP/ LVUP/ SVUP, the proposed structure, the finish road level in VUP/ LVUP/ SVUP shall be kept 150 mm above the ground level/service road/ cross road (whichever is higher) to ensure that these VUP/ LVUP/ SVUP don't become water accumulation points. (Clause No. 2.10 IRC: SP:84)

2.6.2 The vertical and horizontal clearance at the underpasses shall be as per Clause 2.10.2 of the Manual. The provision of guardrails/crash barriers shall be as per clause 2.10.1 of the Manual.

2.7 Lateral and vertical clearances at Overpasses

2.7.1 Lateral and vertical clearances for overpasses shall be as per paragraph 2.11 of the Manual.

2.7.2 Lateral Clearance: The width of the opening at the Overpasses shall be as follows:

Sr. No.	Location Chainage(km)	No. of Spans	Span/opening (m)	Remarks
1	48+790	2	18.50	Overpass
2	49+735	1	20.0	VOP
		1	40.0	
		1	20.0	
3	50+200	2	18.50	Overpass
4	51+825	2	18.50	Overpass
5	51+890	1	40.00	VOP
6	52+600	1	40.00	VOP
7	53+020	2	18.50	Overpass
8	53+765	2	18.50	Overpass
9	54+060	2	18.50	Overpass
10	54+560	2	16.00	VOP
11	55+360	2	18.50	Overpass
12	56+160	2	18.50	Overpass
13	57+800	2	18.50	Overpass
14	59+595	1	40.00	VOP
15	59+930	2	18.50	Overpass
16	62+003	2	18.50	Overpass
17	62+890	2	18.50	Overpass
18	63+725	2	18.50	VOP

Sr. No.	Location Chainage(km)	No. of Spans	Span/opening (m)	Remarks
19	64+295	2	18.50	VOP
20	66+585	2	18.50	Overpass
21	67+460	2	18.50	Overpass
22	67+937	1	15.0	VOP
		1	40.0	
		1	15.0	
23	71+240	2	18.50	Overpass
24	72+900	2	18.50	Overpass
25	74+445	2	18.50	VOP
26	74+810	2	18.50	Overpass
27	75+835	2	18.50	Overpass
28	76+260	1	40.00	VOP
29	76+770	2	18.50	Overpass
30	76+960	1	40.00	VOP
31	77+380	2	16.00	Overpass

2.8 Service Roads/Slip Roads/Connecting Roads:

2.8.1 Service Road: The height of embankment of service road shall confirm to clause 4.2.1 of the Manual.

2.8.2 The Service Roads shall be constructed at the locations and for the lengths indicated below:

S. No.	Design Chainage (Km)		Length		Paved Carriageway width including shyness (m)	Total Length (m)	Remarks
	From	To	LHS	RHS			
1	Nil						

(MCW – main carriageway, LHS – Left Hand Side and RHS – Right Hand Side)

2.8.3 The Parking bays shall be provided along service road.

Sr. No.	Design Chainage of Parking Bay		Remarks
	LHS Service Road	RHS Service Road	
1	Nil		

2.8.4 Slip Road: The height of embankment of slip road shall confirm to clause 4.2.1 of the Manual.

The Slip roads shall be constructed at the locations and for the lengths indicated below:

Sr. No.	Design Chainage (km)		Length (km)		Paved Carriageway Width including shyness (m)	Total (Km)	Remarks
	From	To	LHS	RHS			
Nil							

(MCW – main carriageway, LHS – Left Hand Side and RHS – Right Hand Side)

2.8.5 A Separator Between Main Carriageway and Service/Slip Road

A separator along with pedestrian railing between main carriageway and service/slip road shall be provided to prevent the pedestrians, local vehicles and animals entering the highway.

Sr. No.	Design Chainage (Km)		Length of Separator (km)		Total	Remarks
	From	To	LHS	RHS		
Nil						

(MCW – main carriageway, LHS – Left Hand Side and RHS – Right Hand Side)

Note:

- Above length of the service/slip roads is minimum specified. The actual length of the service/slip/connecting roads shall be determined by the Concessionaire in accordance with the approved plan & profile and design approved from the Independent Engineer. Any increase/ decrease up to 5 percent length from the length specified in this Clause of Schedule-B shall not constitute a CoS.
- The Acceleration, deceleration lane, right turning storage lane, entry/exit lanes shall be constructed in addition to length given in above table and shall be deemed to be part of the scope and no Change of Scope shall be considered for the same.
- Any structures falling within acceleration/deceleration lane /taper shall be constructed to the required width. This increase in width shall not be treated as change of scope.

2.9 Grade Separated Structures

Grade separated structures shall be constructed as per Clause 2.13 of the Manual. Proposed levels at structure locations as shown in plan & profile specified in Annex-III of Schedule-A are minimum requirement and only for guidance and any increase in levels shall not constitute any change of scope. Entry/Exit arrangement from main carriageway shall be 50m before/after the start/end of approach road to grade separator i.e., start/end of valley curve (Clause No. 2.12.2.2 IRC:SP:84). RCC barrier shall start from start of valley curve and end after grade separator at end of valley curve.

The sub-structure shall be continued in the median portion with RCC barrier wherever superstructure has not been proposed in median portion. (Clause 7 .1 (vii) IRC: SP: 84). Where, crash barrier on the median side is not continuous along the project highway, 50m long MBCB Safety barriers on median side shall be provided on both sides approaches of the structures. MBCB provided towards median side of each of the structure shall be joined on ends in semi-circular shape. (Clause No. 4.3.5 and 4.9, IRC 119).

Where crash barrier on the shoulder sides are not continuous along the project highway, 50m long MBCB Safety barriers on shoulder side shall be provided on both sides approaches of the bridge/ structures or till 3m embankment height whichever is more.

2.5m/1.5m/0.75m wide footpaths with guard rail shall be provided at grade intersection below structures for each direction of pedestrian movement (refer fig 3.1 to 3.6 IRC: SP:84).

The requisite particulars are given below:

2.9.1 Vehicle Overpass (VOP) For Main Carriageway

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	48+790	As per GAD		Yes	2 x 18.50	5.5		
2	49+735			Yes	1 x 20+1 x 40+1 x 20	5.5		
3	50+200			Yes	2 x 18.50	5.5		
4	51+825			Yes	2 x 18.50	5.5		
5	51+890			Yes	1 x 40	5.5	18	
6	52+600			Yes	1 x 40	5.5		
7	53+020			Yes	2 x 18.50	5.5		
8	53+765			Yes	2 x 18.50	5.5		
9	54+060			Yes	2 x 18.50	5.5		
10	54+560			Yes	2 x 16.00	5.5		
11	55+360			Yes	2 x 18.50	5.5		
12	56+160			Yes	2 x 18.50	5.5		
13	57+800			Yes	2 x 18.50	5.5		
14	59+595			Yes	1 x 40	5.5		
15	59+930			Yes	2 x 18.50	5.5		
16	62+003			Yes	2 x 18.50	5.5		
17	62+890			Yes	2 x 18.50	5.5		
18	63+725			Yes	2 x 18.50	5.5	22	
19	64+295			Yes	2 x 18.50	5.5		
20	66+585			Yes	2 x 18.50	5.5		
21	67+460			Yes	2 x 18.50	5.5		
22	67+937			Yes	1 x 15 + 1 x 40 + 1 x 15	5.5	28	
23	71+240			Yes	2 x 18.50	5.5		
24	72+900			Yes	2 x 18.50	5.5		
25	74+445			Yes	2 x 18.50	5.5	25	
26	74+810			Yes	2 x 18.50	5.5		
27	75+835			Yes	2 x 18.50	5.5		
28	76+260			Yes	1 X 40	5.5	28	
29	76+770			Yes	2 x 18.50	5.5		

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
30	76+960			Yes	1 x 40	5.5		
31	77+380			Yes	2 x 16	5.5		

For Interchanges

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Interchange At Ch 54+760								
1	0+335	As per GAD	-		1X15	5.5		Ramp-01
2	0+275	As per GAD	-		1X15	5.5	21	Ramp-04
Interchange At Ch 64+970								
3	0+015	As per GAD	Yes		1X40	5.5		Rotary
4	0+230	As per GAD	Yes		1X20+2X35+1X16+1X28+1X40+1X28+1X18	5.5		Rotary
Interchange At Ch 77+750								
5	0+450	As per GAD	-		1X15	5.5		Ramp-01
6	0+380	As per GAD	-		1X15	5.5		Ramp-02

Note: The connecting spans between viaducts and Overpasses in the Ramps of Interchanges is in the scope of the Concessionaire

2.9.2 Vehicular Underpasses (VUP)

For Main Carriageway

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	70+670	14.50	14.50	No	1X33.40	5.5	-	

For Interchanges

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Interchange At Ch 54+760								
1	0+015 (Rotary)	14.50	14.50	No	1X20.00	5.5	-	Rotary
2	0+280 (Rotary)	14.50	14.50	No	1X20.00	5.5	-	Rotary
Interchange At Ch 77+750								
3	0+285 (Rotary)	14.50	14.50	No	1X20.00	5.5	-	Rotary

2.9.3 Light Vehicular Underpasses (LVUP)

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Nil								

2.9.4 Small Vehicular Underpasses (SVUP)

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	46+965	14.50	14.50	-	1X7	4	-	SVUP
2	50+560	14.50	14.50	-	1X30	4	-	Utility Underpass
3	51+100	14.50	14.50	-	1X7	4	-	Underpass
4	56+620	14.50	14.50	-	1X7	4	-	Underpass
5	57+260	14.50	14.50	-	1X7	4	-	Underpass
6	72+315	14.50	14.50	-	1X7	4	-	SVUP
7	73+785	14.50	14.50	-	1X7	4	-	Underpass
8	76+680	14.50	14.50	-	1X7	4	-	SVUP
9	78+240	14.50	14.50	-	1X7	4	-	Underpass

2.9.5 Cattle and Pedestrian underpasses

Sr. No.	Design Chainage (Km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Nil								

2.9.6 Interchanges (IC)

Sr. No.	Design Chainage (km)	Name of Structure	Span Arrangement (m)	Total Width (m)	Typical Cross Section	Remarks
1	54+760	Elongated Elevated Rotary	As Per GAD			Interchange-01
2	64+970	Elongated Elevated Rotary	As Per GAD			Interchange-02
3	77+750	Elongated Elevated Rotary	As Per GAD			Interchange-03

Note: Layout, Geometric Design and Typical Cross Sections of Interchange are included in Annexure to Schedule-B.

2.9.7 Details of Ramps, Crossroads and Connecting Roads at Interchanges (IC)

Sr.No.	Carriageway Widths including Kerb Shyness (m)	Length (m)	Description of Ramps, Crossroads and Connecting Roads	Remarks
1	9.5	660	Ramp-01	Interchange-01
2	9.5	543	Ramp-02	
3	9.5	684	Ramp-03	
4	9.5	632	Ramp-04	
5	10	529	Existing Road SH-09 including Rotary	
6	12	541	Rotary	
7	12	541	Rotary	
8	9.5	780	Ramp-01	Interchange-02
9	9.5	960	Ramp-02	
10	9.5	879	Ramp-03	
11	9.5	819	Ramp-04	
12	10	572	Existing Road SH-07 including Rotary	
13	12	541	Rotary	Interchange-03
14	9.5	842	Ramp-01	
15	9.5	813	Ramp-02	
16	9.5	595	Ramp-03	
17	9.5	629	Ramp-04	
18	10	585	Existing Road NH-06 including Rotary	

Note: Layout, Geometric Design and Typical Cross Sections of Interchange are included in Annexure to Schedule-B.

2.10 Typical Cross Section (TCS) of the Project Highway

The Project Highway shall involve the new construction of a four-lane configuration with paved shoulders in greenfield alignment. It will be a controlled-access facility, with entry and exit points strategically limited to prevent congestion and ensure a high-speed corridor. Service roads will be provided at selected locations. Typical cross sections required to be developed in different sections of the Project Highway are given below:

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
1	45+645	45+960	315	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
2	45+960	45+980	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
3	45+980	46+400	420	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
4	46+400	46+420	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
5	46+420	46+440	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
6	46+440	46+560	120	Viaduct	Viaduct
7	46+560	46+580	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
8	46+580	46+600	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
9	46+600	46+640	40	TCS-15A	6 - Lane Divided Highway (One side Cutting <3m, one side Cutting 3m to 7m) New Construction
10	46+640	46+840	200	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
11	46+840	46+955	115	TCS-15A	6 - Lane Divided Highway (One side Cutting <3m, one side Cutting 3m to 7m) New Construction
12	46+955	46+961	6	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
13	46+961	46+969	8	SVUP	SVUP
14	46+969	47+040	71	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
15	47+040	47+080	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
16	47+080	47+100	20	TCS-15A	6 - Lane Divided Highway (One side Cutting <3m, One side Cutting 3m to 7m) New Construction
17	47+100	47+120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
18	47+120	47+240	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
19	47+240	47+260	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
20	47+260	47+280	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
21	47+280	47+320	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
22	47+320	47+340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
23	47+340	47+360	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
24	47+360	47+400	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
25	47+400	47+500	100	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
26	47+500	47+660	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
27	47+660	47+680	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
28	47+680	47+700	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
29	47+700	47+740	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
30	47+740	47+900	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
31	47+900	47+920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
32	47+920	47+940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
33	47+940	47+980	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
34	47+980	48+000	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
35	48+000	48+020	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
36	48+020	48+060	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
37	48+060	48+080	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
38	48+080	48+100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
39	48+100	48+120	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
40	48+120	48+140	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
41	48+140	48+160	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
42	48+160	48+180	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
43	48+180	48+220	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
44	48+220	48+240	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
45	48+240	48+260	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
46	48+260	48+274	14	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
47	48+274	48+386	112	MJB	Major Bridge
48	48+386	48+570	184	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
49	48+570	48+590	20	MNB	Minor Bridge
50	48+590	48+640	50	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
51	48+640	48+700	60	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
52	48+700	48+720	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
53	48+720	48+740	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
54	48+740	48+780	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
55	48+780	48+800	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
56	48+800	48+820	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
57	48+820	48+880	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
58	48+880	49+020	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
59	49+020	49+040	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
60	49+040	49+060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
61	49+060	49+100	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
62	49+100	49+140	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
63	49+140	49+160	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
64	49+160	49+214	54	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
65	49+214	49+226	12	Viaduct	Viaduct
66	49+226	49+340	114	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
67	49+340	49+360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
68	49+360	49+380	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
69	49+380	50+000	620	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
70	50+000	50+040	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
71	50+040	50+060	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
72	50+060	50+080	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
73	50+080	50+100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
74	50+100	50+120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
75	50+120	50+140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
76	50+140	50+160	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
77	50+160	50+180	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
78	50+180	50+200	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
79	50+200	50+440	240	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
80	50+440	50+500	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
81	50+500	50+520	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
82	50+520	50+542	22	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
83	50+542	50+572	30	Utility Underpass	Utility Underpass
84	50+572	50+600	28	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
85	50+600	50+620	20	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
86	50+620	50+640	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
87	50+640	50+860	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
88	50+860	50+880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
89	50+880	50+900	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
90	50+900	50+920	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
91	50+920	50+980	60	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
92	50+980	51+060	80	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
93	51+060	51+096	36	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
94	51+096	51+104	8	Underpass	Underpass
95	51+104	51+140	36	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
96	51+140	51+160	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
97	51+160	51+180	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
98	51+180	51+220	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
99	51+220	51+240	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
100	51+240	51+360	120	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
101	51+360	51+380	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
102	51+380	51+400	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
103	51+400	51+420	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
104	51+420	51+450	30	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
105	51+450	51+490	40	MNB	Minor Bridge
106	51+490	51+520	30	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
107	51+520	51+620	100	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
108	51+620	51+640	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
109	51+640	51+660	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
110	51+660	51+680	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
111	51+680	51+720	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
112	51+720	51+740	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
113	51+740	51+780	40	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
114	51+780	51+800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
115	51+800	51+820	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
116	51+820	51+860	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
117	51+860	52+220	360	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
118	52+220	52+240	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
119	52+240	52+280	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
120	52+280	52+300	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
121	52+300	52+320	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
122	52+320	52+340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
123	52+340	52+360	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
124	52+360	52+380	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
125	52+380	52+420	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
126	52+420	52+440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
127	52+440	52+460	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
128	52+460	52+480	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
129	52+480	52+500	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
130	52+500	52+520	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
131	52+520	52+680	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
132	52+680	52+740	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
133	52+740	52+760	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
134	52+760	52+780	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
135	52+780	52+800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
136	52+800	52+840	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
137	52+840	52+860	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
138	52+860	52+880	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
139	52+880	52+900	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
140	52+900	52+960	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
141	52+960	52+980	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
142	52+980	53+000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
143	53+000	53+220	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
144	53+220	53+260	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
145	53+260	53+280	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
146	53+280	53+340	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
147	53+340	53+400	60	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
148	53+400	53+450	50	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
149	53+450	53+475	25	MNB	Minor Bridge
150	53+475	53+520	45	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
151	53+520	53+540	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
152	53+540	53+560	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
153	53+560	53+600	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
154	53+600	53+640	40	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
155	53+640	53+700	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
156	53+700	53+720	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
157	53+720	53+740	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
158	53+740	53+780	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
159	53+780	53+800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
160	53+800	53+820	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
161	53+820	53+840	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
162	53+840	53+860	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
163	53+860	53+880	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
164	53+880	53+900	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
165	53+900	53+920	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
166	53+920	53+980	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
167	53+980	54+000	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
168	54+000	54+040	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
169	54+040	54+100	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
170	54+100	54+120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
171	54+120	54+140	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
172	54+140	54+160	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
173	54+160	54+200	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
174	54+200	54+220	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
175	54+220	54+240	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
176	54+240	54+260	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
177	54+260	54+280	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
178	54+280	54+320	40	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
179	54+320	54+340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
180	54+340	54+360	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
181	54+360	54+380	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
182	54+380	54+420	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
183	54+420	54+460	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
184	54+460	54+480	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
185	54+480	54+500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
186	54+500	54+540	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
187	54+540	54+560	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
188	54+560	54+625	65	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
189	54+625	55+024	399	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
190	55+024	55+036	12	Viaduct	Viaduct
191	55+036	55+080	44	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
192	55+080	55+160	80	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
193	55+160	55+180	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
194	55+180	55+280	100	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
195	55+280	55+300	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
196	55+300	55+340	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
197	55+340	55+360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
198	55+360	55+420	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
199	55+420	55+440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
200	55+440	55+460	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
201	55+460	55+480	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
202	55+480	55+500	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
203	55+500	55+540	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
204	55+540	55+560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
205	55+560	55+580	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
206	55+580	55+620	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
207	55+620	55+640	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
208	55+640	55+660	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
209	55+660	55+720	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
210	55+720	55+760	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
211	55+760	55+780	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
212	55+780	55+800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
213	55+800	55+820	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
214	55+820	55+840	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
215	55+840	55+860	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
216	55+860	55+880	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
217	55+880	55+920	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
218	55+920	55+980	60	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
219	55+980	56+000	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
220	56+000	56+010	10	MNB	Minor Bridge
221	56+010	56+060	50	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
222	56+060	56+080	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
223	56+080	56+100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
224	56+100	56+120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
225	56+120	56+260	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
226	56+260	56+300	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
227	56+300	56+320	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
228	56+320	56+500	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
229	56+500	56+520	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
230	56+520	56+540	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
231	56+540	56+560	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
232	56+560	56+616	56	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
233	56+616	56+624	8	Underpass	Underpass
234	56+624	56+720	96	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
235	56+720	56+740	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
236	56+740	56+780	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
237	56+780	56+820	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
238	56+820	56+840	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
239	56+840	56+900	60	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
240	56+900	56+940	40	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
241	56+940	56+975	35	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
242	56+975	57+000	25	MNB	Minor Bridge
243	57+000	57+040	40	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
244	57+040	57+100	60	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
245	57+100	57+120	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
246	57+120	57+160	40	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
247	57+160	57+180	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
248	57+180	57+256	76	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
249	57+256	57+264	8	Underpass	Underpass
250	57+264	57+320	56	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
251	57+320	57+340	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
252	57+340	57+380	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
253	57+380	57+400	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
254	57+400	57+420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
255	57+420	57+440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
256	57+440	57+480	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
257	57+480	57+520	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
258	57+520	57+540	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
259	57+540	57+580	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
260	57+580	57+600	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
261	57+600	57+640	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
262	57+640	57+660	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
263	57+660	57+700	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
264	57+700	57+720	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
265	57+720	57+740	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
266	57+740	57+860	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
267	57+860	57+880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
268	57+880	57+940	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
269	57+940	58+000	60	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
270	58+000	58+020	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
271	58+020	58+140	120	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
272	58+140	58+200	60	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
273	58+200	58+260	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
274	58+260	58+280	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
275	58+280	58+300	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
276	58+300	58+400	100	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
277	58+400	58+420	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
278	58+420	58+520	100	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
279	58+520	58+640	120	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
280	58+640	58+680	40	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
281	58+680	58+700	20	MNB	Minor Bridge
282	58+700	58+860	160	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
283	58+860	58+880	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
284	58+880	58+900	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
285	58+900	58+920	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
286	58+920	58+940	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
287	58+940	58+960	20	MNB	Minor Bridge
288	58+960	58+980	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
289	58+980	59+020	40	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
290	59+020	59+040	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
291	59+040	59+220	180	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
292	59+220	59+260	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
293	59+260	59+320	60	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
294	59+320	59+340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
295	59+340	59+360	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
296	59+360	59+420	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
297	59+420	59+480	60	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
298	59+480	59+500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
299	59+500	59+620	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
300	59+620	59+640	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
301	59+640	59+660	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
302	59+660	59+680	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
303	59+680	59+700	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
304	59+700	59+720	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
305	59+720	59+740	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
306	59+740	59+760	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
307	59+760	59+780	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
308	59+780	59+800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
309	59+800	59+940	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
310	59+940	60+000	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
311	60+000	60+020	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
312	60+020	60+040	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
313	60+040	60+060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
314	60+060	60+080	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
315	60+080	60+100	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
316	60+100	60+120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
317	60+120	60+140	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
318	60+140	60+160	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
319	60+160	60+180	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
320	60+180	60+200	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
321	60+200	60+240	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
322	60+240	60+280	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
323	60+280	60+300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
324	60+300	60+320	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
325	60+320	60+340	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
326	60+340	60+400	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
327	60+400	60+420	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
328	60+420	60+435	15	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
329	60+435	60+445	10	MNB	Minor Bridge
330	60+445	60+480	35	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
331	60+480	60+500	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
332	60+500	60+520	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
333	60+520	60+540	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
334	60+540	60+580	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
335	60+580	60+620	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
336	60+620	60+660	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
337	60+660	60+680	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
338	60+680	60+700	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m,One side Filling 3m to 7m) New Construction
339	60+700	60+760	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
340	60+760	60+780	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
341	60+780	60+820	40	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
342	60+820	60+840	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
343	60+840	60+880	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m,One side Filling 3m to 7m) New Construction
344	60+880	60+920	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
345	60+920	60+940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
346	60+940	60+960	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
347	60+960	61+000	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
348	61+000	61+020	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
349	61+020	61+040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
350	61+040	61+060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m,One side Filling 3m to 7m) New Construction
351	61+060	61+080	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
352	61+080	61+140	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
353	61+140	61+200	60	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
354	61+200	61+215	15	MNB	Minor Bridge
355	61+215	61+300	85	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
356	61+300	61+310	10	MNB	Minor Bridge
357	61+310	61+340	30	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
358	61+340	61+360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
359	61+360	61+380	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
360	61+380	61+400	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
361	61+400	61+420	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
362	61+420	61+620	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
363	61+620	61+640	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
364	61+640	61+660	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
365	61+660	61+680	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
366	61+680	62+180	500	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
367	62+180	62+240	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
368	62+240	62+260	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
369	62+260	62+280	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
370	62+280	62+320	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
371	62+320	62+360	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
372	62+360	62+400	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
373	62+400	62+420	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
374	62+420	62+460	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
375	62+460	62+480	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
376	62+480	62+540	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
377	62+540	62+560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
378	62+560	62+580	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
379	62+580	62+640	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
380	62+640	62+660	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
381	62+660	62+680	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
382	62+680	62+700	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
383	62+700	62+720	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
384	62+720	62+740	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
385	62+740	62+800	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
386	62+800	62+820	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
387	62+820	62+840	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
388	62+840	62+860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
389	62+860	62+880	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
390	62+880	62+900	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
391	62+900	62+920	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
392	62+920	62+940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
393	62+940	62+960	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
394	62+960	63+020	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
395	63+020	63+040	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
396	63+040	63+060	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
397	63+060	63+080	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
398	63+080	63+100	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
399	63+100	63+120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
400	63+120	63+140	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
401	63+140	63+180	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
402	63+180	63+200	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
403	63+200	63+220	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
404	63+220	63+240	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
405	63+240	63+260	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
406	63+260	63+280	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
407	63+280	63+300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
408	63+300	63+320	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
409	63+320	63+340	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
410	63+340	63+360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
411	63+360	63+380	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
412	63+380	63+400	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
413	63+400	63+420	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
414	63+420	63+440	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
415	63+440	63+460	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
416	63+460	63+560	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
417	63+560	63+580	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
418	63+580	63+600	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
419	63+600	63+620	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
420	63+620	63+680	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
421	63+680	63+700	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
422	63+700	63+900	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
423	63+900	63+920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
424	63+920	63+940	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
425	63+940	64+020	80	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
426	64+020	64+060	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
427	64+060	64+080	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
428	64+080	64+100	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
429	64+100	64+140	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
430	64+140	64+180	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
431	64+180	64+200	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
432	64+200	64+220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
433	64+220	64+240	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
434	64+240	64+320	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
435	64+320	64+340	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
436	64+340	64+500	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
437	64+500	64+520	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
438	64+520	64+540	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
439	64+540	64+560	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
440	64+560	64+580	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
441	64+580	64+594	14	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
442	64+594	64+606	12	MNB	Minor Bridge
443	64+606	64+640	34	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
444	64+640	64+680	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
445	64+680	64+700	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
446	64+700	64+740	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
447	64+740	64+780	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
448	64+780	65+060	280	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
449	65+060	65+100	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
450	65+100	65+120	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
451	65+120	65+160	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
452	65+160	65+180	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
453	65+180	65+200	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
454	65+200	65+220	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
455	65+220	65+240	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
456	65+240	65+260	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
457	65+260	65+280	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
458	65+280	65+300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
459	65+300	65+320	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
460	65+320	65+340	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
461	65+340	65+360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
462	65+360	65+380	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
463	65+380	65+400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
464	65+400	65+420	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
465	65+420	65+440	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
466	65+440	65+460	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
467	65+460	65+480	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
468	65+480	65+500	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
469	65+500	65+520	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
470	65+520	65+620	100	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
471	65+620	65+680	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
472	65+680	65+700	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
473	65+700	65+840	140	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
474	65+840	65+860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
475	65+860	65+900	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
476	65+900	65+960	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
477	65+960	65+980	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
478	65+980	66+020	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
479	66+020	66+040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
480	66+040	66+100	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
481	66+100	66+120	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
482	66+120	66+180	60	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
483	66+180	66+200	20	MNB	Minor Bridge
484	66+200	66+260	60	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
485	66+260	66+280	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
486	66+280	66+300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
487	66+300	66+360	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
488	66+360	66+380	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
489	66+380	66+760	380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
490	66+760	66+780	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
491	66+780	66+800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
492	66+800	66+820	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
493	66+820	66+840	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
494	66+840	66+860	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
495	66+860	66+900	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
496	66+900	66+940	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
497	66+940	67+000	60	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
498	67+000	67+010	10	Viaduct	Viaduct
499	67+010	67+040	30	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
500	67+040	67+060	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
501	67+060	67+280	220	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
502	67+280	67+300	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
503	67+300	67+379	79	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
504	67+379	67+391	12	MNB	Minor Bridge
505	67+391	67+420	29	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
506	67+420	67+500	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
507	67+500	67+520	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
508	67+520	67+550	30	Viaduct	Viaduct
509	67+550	67+560	10	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
510	67+560	67+580	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
511	67+580	67+680	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
512	67+680	67+700	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
513	67+700	67+740	40	Viaduct	Viaduct
514	67+740	67+760	20	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
515	67+760	67+780	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
516	67+780	68+020	240	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
517	68+020	68+040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
518	68+040	68+060	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
519	68+060	68+080	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
520	68+080	68+140	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
521	68+140	68+160	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
522	68+160	68+180	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
523	68+180	68+220	40	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
524	68+220	68+260	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
525	68+260	68+300	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
526	68+300	68+440	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
527	68+440	68+460	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
528	68+460	68+480	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
529	68+480	68+500	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
530	68+500	68+520	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
531	68+520	68+540	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
532	68+540	68+560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
533	68+560	68+580	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
534	68+580	68+610	30	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
535	68+610	68+620	10	Viaduct	Viaduct
536	68+620	68+640	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
537	68+640	68+680	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
538	68+680	68+700	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
539	68+700	68+900	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
540	68+900	68+920	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
541	68+920	68+940	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
542	68+940	68+980	40	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
543	68+980	69+020	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
544	69+020	69+310	290	Viaduct	Viaduct
545	69+310	69+340	30	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
546	69+340	69+360	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
547	69+360	69+400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
548	69+400	69+460	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
549	69+460	69+480	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
550	69+480	69+580	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
551	69+580	69+600	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
552	69+600	69+620	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
553	69+620	69+640	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
554	69+640	69+700	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
555	69+700	69+740	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
556	69+740	69+780	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
557	69+780	69+800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
558	69+800	69+820	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
559	69+820	69+860	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
560	69+860	69+880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
561	69+880	69+900	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
562	69+900	69+920	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
563	69+920	69+980	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
564	69+980	70+000	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
565	70+000	70+025	25	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
566	70+025	70+145	120	Viaduct	Viaduct
567	70+145	70+180	35	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
568	70+180	70+200	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
569	70+200	70+220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
570	70+220	70+280	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
571	70+280	70+300	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
572	70+300	70+320	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
573	70+320	70+340	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
574	70+340	70+380	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
575	70+380	70+400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
576	70+400	70+420	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
577	70+420	70+440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
578	70+440	70+460	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
579	70+460	70+480	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
580	70+480	70+540	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
581	70+540	70+560	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
582	70+560	70+580	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
583	70+580	70+600	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
584	70+600	70+650	50	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
585	70+650	70+687	37	VUP	VUP
586	70+687	70+740	53	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
587	70+740	70+820	80	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
588	70+820	70+860	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
589	70+860	70+880	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
590	70+880	70+900	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
591	70+900	70+920	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
592	70+920	70+940	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
593	70+940	70+980	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
594	70+980	71+000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
595	71+000	71+180	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
596	71+180	71+220	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
597	71+220	71+300	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
598	71+300	71+380	80	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
599	71+380	71+400	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
600	71+400	71+420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
601	71+420	71+440	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
602	71+440	71+500	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
603	71+500	71+520	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
604	71+520	71+540	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
605	71+540	71+580	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
606	71+580	71+640	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
607	71+640	71+660	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
608	71+660	71+680	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
609	71+680	71+700	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
610	71+700	71+740	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
611	71+740	71+780	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
612	71+780	71+820	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
613	71+820	71+840	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
614	71+840	71+860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
615	71+860	71+880	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
616	71+880	71+900	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
617	71+900	71+920	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
618	71+920	71+935	15	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
619	71+935	71+975	40	MNB	Minor Bridge
620	71+975	72+080	105	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
621	72+080	72+094	14	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
622	72+094	72+106	12	MNB	Minor Bridge
623	72+106	72+140	34	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
624	72+140	72+160	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
625	72+160	72+180	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
626	72+180	72+220	40	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
627	72+220	72+312	92	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
628	72+312	72+320	8	SVUP	SVUP
629	72+320	72+360	40	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
630	72+360	72+420	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
631	72+420	72+440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
632	72+440	72+460	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
633	72+460	72+500	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
634	72+500	72+540	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
635	72+540	72+580	40	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
636	72+580	72+600	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
637	72+600	72+620	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
638	72+620	72+640	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
639	72+640	72+660	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
640	72+660	72+680	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
641	72+680	72+700	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
642	72+700	72+760	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
643	72+760	72+780	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
644	72+780	72+800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
645	72+800	72+840	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
646	72+840	72+860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
647	72+860	72+880	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
648	72+880	72+900	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
649	72+900	72+940	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
650	72+940	73+020	80	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
651	73+020	73+100	80	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
652	73+100	73+120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
653	73+120	73+140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
654	73+140	73+180	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
655	73+180	73+200	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
656	73+200	73+234	34	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
657	73+234	73+246	12	MNB	Minor Bridge

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
658	73+246	73+280	34	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
659	73+280	73+300	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
660	73+300	73+380	80	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
661	73+380	73+400	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
662	73+400	73+420	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
663	73+420	73+500	80	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
664	73+500	73+540	40	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
665	73+540	73+580	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
666	73+580	73+620	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
667	73+620	73+640	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
668	73+640	73+660	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
669	73+660	73+670	10	MNB	Minor Bridge
670	73+670	73+700	30	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
671	73+700	73+740	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
672	73+740	73+780	40	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
673	73+780	73+790	10	Underpass	Underpass
674	73+790	73+820	30	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
675	73+820	73+900	80	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
676	73+900	73+920	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
677	73+920	73+980	60	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
678	73+980	73+994	14	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
679	73+994	74+006	12	MNB	Minor Bridge
680	74+006	74+040	34	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
681	74+040	74+060	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
682	74+060	74+080	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
683	74+080	74+280	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
684	74+280	74+300	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
685	74+300	74+340	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
686	74+340	74+360	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
687	74+360	74+400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
688	74+400	74+420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
689	74+420	74+440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
690	74+440	74+460	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
691	74+460	74+640	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
692	74+640	74+660	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
693	74+660	74+740	80	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
694	74+740	74+820	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
695	74+820	74+880	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
696	74+880	74+980	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
697	74+980	75+000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
698	75+000	75+020	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
699	75+020	75+040	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
700	75+040	75+060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
701	75+060	75+180	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
702	75+180	75+240	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
703	75+240	75+300	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
704	75+300	75+360	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
705	75+360	75+400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
706	75+400	75+440	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
707	75+440	75+460	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
708	75+460	75+480	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
709	75+480	75+500	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
710	75+500	75+520	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
711	75+520	75+540	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
712	75+540	75+560	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
713	75+560	75+580	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
714	75+580	75+700	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
715	75+700	75+720	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
716	75+720	75+760	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
717	75+760	75+780	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
718	75+780	75+860	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
719	75+860	75+880	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
720	75+880	75+905	25	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
721	75+905	75+915	10	MNB	Minor Bridge
722	75+915	75+940	25	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
723	75+940	75+960	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
724	75+960	75+980	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
725	75+980	76+040	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
726	76+040	76+060	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
727	76+060	76+080	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
728	76+080	76+100	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
729	76+100	76+120	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
730	76+120	76+140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
731	76+140	76+180	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
732	76+180	76+200	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
733	76+200	76+220	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
734	76+220	76+320	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
735	76+320	76+340	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
736	76+340	76+360	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
737	76+360	76+380	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
738	76+380	76+400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
739	76+400	76+420	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
740	76+420	76+440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
741	76+440	76+480	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
742	76+480	76+500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
743	76+500	76+540	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
744	76+540	76+580	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
745	76+580	76+600	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
746	76+600	76+654	54	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
747	76+654	76+666	12	Viaduct	Viaduct
748	76+666	76+676	10	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
749	76+676	76+684	8	SVUP	SVUP
750	76+684	76+700	16	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
751	76+700	76+740	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
752	76+740	77+060	320	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
753	77+060	77+080	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
754	77+080	77+100	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
755	77+100	77+120	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
756	77+120	77+180	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
757	77+180	77+280	100	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
758	77+280	77+300	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
759	77+300	77+340	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
760	77+340	77+360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
761	77+360	77+400	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
762	77+400	77+420	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
763	77+420	77+560	140	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
764	77+560	77+700	140	Viaduct	Viaduct
765	77+700	77+730	30	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
766	77+730	77+760	30	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
767	77+760	77+820	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
768	77+820	77+860	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
769	77+860	78+140	280	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
770	78+140	78+160	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
771	78+160	78+180	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
772	78+180	78+200	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
773	78+200	78+220	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
774	78+220	78+236	16	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road
775	78+236	78+244	8	Underpass	Underpass
776	78+244	78+280	36	TCS-17	6- Lane Divided Highway for MNB/MJB/VUP/LVUP/SVUP/Viaducts Approach Road

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
777	78+280	78+300	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
778	78+300	78+320	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
779	78+320	78+340	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
780	78+340	78+360	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
781	78+360	78+400	40	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
782	78+400	78+420	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
783	78+420	78+440	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
784	78+440	78+474	34	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
785	78+474	78+486	12	MNB	Minor Bridge
786	78+486	78+520	34	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
787	78+520	78+540	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
788	78+540	78+600	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
			32955.0	M	

Note:

- Any variations in the lengths of various TCS as specified in the Table 2.10 shall not constitute a Change of Scope.
- Lengths mentioned in the above list for cross section types concerned to structures are inclusive of structure length.
- RE wall to be provided for full height on all structures.
- Toe wall to be provided where ROW is restricted and water bodies along the proposed highway on the sections specified in Schedule-B.
- Chainage may be adjusted according to location of structures as per Site conditions.
- Carriageway width tapering shall be provided 1 in 50 as per manual
- Intermediate Sight Distance (Desirable Minimum Sight Distance) shall be followed for design of all summit vertical curves and Headlight Sight Distance for all Valley Curves including structures as well as highways.
- A utility corridor, along with earthen Drain/ Lined drain/Covered Drain as per TCS shall be accommodated in the ROW.

3 Intersections and Grade Separated Intersections

All at-grade intersections and grade separated intersections shall be as per Section 3 of the Manual. Existing at-grade intersections shall be improved to the prescribed standards.

The service road pavement composition shall be continued on crossroads of the intersections for the length specified for at-grade and grade separated intersections.

Properly designed intersections shall be provided at the locations and of types and features given in the tables below:

(a) At-grade intersections Major Junctions:

Improvement of major junctions shall be carried out at the following locations:

Sr. No.	Design Chainage (Km)	Type of Junction	Leads to		Median Opening	Category of Cross Road	Carriageway Width (m) of crossroad	Length of crossroad to be developed	
			Left	Right				LHS	RHS
Nil									

(b) Minor Intersections:

Sr. No.	Design Chainage (Km)	Type of Junction	Leads to		Median Opening	Category of Cross Road	Carriageway Width (m) of crossroad	Length of crossroads to be developed	
			Left	Right				LHS	RHS
Nil									

Note:

1. "Typical Layout as per type Designs for Intersections on National Highways, 1992, Geometric Design and Typical Cross Sections of Major Junction is included in Annexure – IV to schedule-B."
2. Type of Junction to be improved as per Manual. (clause No. 3.2.5 IRC: SP:84)
3. The Concessionaire shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in section-3 of the Manual. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided.
The cross road at the junctions which are having a level difference from the main carriageway, are to be improved at the level of main carriageway for the length of 30 metre and then to be merged with the cross road at the gradient not more than 1:50.
4. For minor / major layout for left-in / left out arrangement with physical islands with hazard marking. Where there is space constraint to provide physical islands, the effect of junction kept wide opened can be avoided by ghost island with marking.
5. U-turn facility shall be created. (Fig. 3.7 of manual).

3.1 At-Grade Intersections below Grade Separators/interchanges: These shall be provided as given at para 2.9 of this Annexure-I of Schedule B (Clause No. 3.4.7 of IRC: SP:84)

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
1	46+965	+	To Village	To Village	No	VR	3.75	The Concessionaire shall	

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
2	48+790	+	To Village	To Paddy Field	No	VR	3.75	develop the cross roads up to the ROW of HSC, ensuring that the FRL matches and is maintained in continuity with the existing connecting road.	
3	49+735	+	To Village	To Paddy Field	No	VR	3.75		
4	50+200	+	To Village	To Village	No	VR	3.75		
5	51+100	+	To Village	To Village	No	VR	3.75		
6	51+825	+	To Village	To Village	No	VR	3.50		
7	51+890	+	To Village	To Village	No	VR	3.75		
8	52+600	+	To Nongbah	To Mukhl a	No	MDR	5.50		
9	53+020	+	To Village	To Village	No	VR	3.50		
10	53+765	+	To Village	To Village	No	VR	3.75		
11	54+060	+	To Village	To Village	No	VR	3.75		
12	54+560	+	To Village	To Village	No	VR	3.75		
13	55+360	+	To Village	To Village	No	VR	3.75		
14	56+160	+	To Village	To Village	No	VR	3.75		

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
15	56+620	+	To Village	To Village	No	VR	3.75		
16	57+260	+	To Village	To Village	No	VR	3.75		
17	57+800	+	To Village	To Village	No	VR	3.75		
18	59+595	+	To Mynso	To Pasyih	No	MDR	7.0		
19	59+930	+	To Village	To Village	No	VR	3.75		
20	62+003	+	To Village	To Village	No	VR	3.75		
21	62+890	+	To Village	To Village	No	VR	3.75		
22	63+725	+	To Village	To Village	No	VR	3.75		
23	64+295	+	To Village	To Village	No	VR	3.75		
24	66+585	+	To Village	To Village	No	VR	3.75		
25	67+460	+	To Village	To Village	No	VR	3.75		
26	67+937	+	To Village	To Village	No	VR	3.75		
27	70+670	+	To Silchar	To Shillong	No	NH-06	10.0		

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
28	71+240	+	To Village	To Village	No	VR	3.75		
29	72+315	+	To Village	To Village	No	VR	3.75		
30	72+900	+	To Village	To Village	No	VR	3.75		
31	73+785	+	To Village	To Village	No	VR	3.75		
32	74+445	+	To Village	To Village	No	VR	3.75		
33	74+810	+	To Village	To Village	No	VR	3.75		
34	75+835	+	To Village	To Village	No	VR	3.75		
35	76+260	+	To Shillong	To Silchar	No	NH-06	10.0		
36	76+680	+	To Village	To Village	No	VR	3.75		
37	76+770	+	To Village	To Village	No	VR	3.75		
38	76+960	+	To Village	To Village	No	VR	3.75		
39	77+380	+	To Village	To Village	No	VR	3.75		
40	78+240	+	To Village	To Village	No	VR	3.75		

Note:

1. The Concessionaire shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in Section 3 of manual
2. Junction improvement under grade separators shall be carried out as per manual with proper entry/exit to crossroads and slip/service road, etc. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided
3. Location of grade-separated structures are indicative. Exact location should be decided in consultation with Independent Engineer. The list of above major & minor junctions is indicative only and any additional junctions required in the Project Highway shall have to be constructed by the Contractor in consultation with the Independent Engineer. However, no change of scope on account of additional junction will be accepted
4. Only Entry or Exit shall be designed at any location (provision of entry/exit by ghost island not permitted).
5. Intersection Layout, Entry/Exit, Right Turning Lane, U-Turns, Geometric Design and Typical Cross Sections of Interchange are included in Annexure to schedule-B."
6. For cross road drainage facility new HP culverts on cross / approach roads shall be constructed.
7. Improvement of culverts/drain up to 50m on the cross/connecting roads on Major & Minor junctions shall be in the scope of contractor.
8. The cross road at junctions shall be regraded to attain similar gradient as per MoRTH standards & Type Designs for Intersections on National Highways, whichever is more & repaved by existing paved material.

4 Road Embankment and Cut Section

Construction of road embankment/cuttings shall conform to the Specifications and Standards given in **Section 4** of the manual. Notwithstanding anything to the contrary contained in this Agreement or manual, the difference of the proposed profile and the existing ground level of the project highway as indicated in the Annexure-III of Schedule A shall be treated as minimum requirement.

Based on site/design requirement, the Concessionaire shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule B with approval from the Independent Engineer within the available Right of Way. However, it is clarified that bottom of subgrade level shall be at-least 1000 mm above HFL/Existing ground level.

The side slopes shall not be steeper than 2H:1V. In case, there is a ROW constraint than, suitable soil retaining structures shall be provided.

For stability of slope upto 3 metre height, turfing can be adapted. For the slope from 3-6 metre, suitable geocell, geo-grid, geo-green etc. can be provided with suitable drainage chutes and suitable energy dissipaters as per IRC 56. For the slope more than 6 metre height, a complete slope stability analysis as per IRC:75 shall be done, and the slopes shall be compulsorily protected as per IRC codal provisions and suitable drains/chutes and energy dissipaters etc. shall be provided for effective drainage of the water. In case of cut section, hydro seeding & mulching shall be adapted.

Wherever the channel kerbs are placed for directing water in chute drains, it is to be ensured that they are flushed with the face of crash barrier. Further, the width of earthen

shoulder between kerb channel and edge of paved shoulder, the same may be paved with PCC to stop erosion of earthen shoulder.

Where pond ash is used for embankment construction, the embankment shall be designed and constructed in accordance with IRC: SP: 58 (Clause No. 4.2.4 & 4.4.4.i (d) IRC: SP: 84)

The Concessionaire shall deploy grading, paving and compaction equipment fitted with Machine Guidance & Control System (MGCS) for finishing of all grades including Embankment, and Subgrade. 3D Machine Guidance and Control Systems for Motor Graders / Paver and 3D Machine Guidance System in Compactors and Dozers shall be done with help of 3D Digital model generated from Design to ensure quality standards as per IRC specifications and productivity improvement. Further, Concessionaire shall ensure the generation of measurable digital records that can be shared on a digital drive or can viewed in real time. The hardware and software used by the Concessionaire shall have features and specifications mentioned at Schedule D.

5 Pavement Design

5.1 Pavement design shall be carried out in accordance with Section 5 of the Manual.

5.1.1 Concessionaire shall develop 3D digital models and use 3D Machine Guidance and Control Systems for Motor Graders and Paver and 3D Machine Guidance System in Compactors and Dozers to ensure quality standards as per IRC specifications and productivity improvement. Further, Concessionaire shall generate measurable digital records that can be shared on a digital drive or can viewed in real time. The hardware and software used by the Concessionaire shall have features and specifications mentioned at Schedule D.

5.2 Type of Pavement and Design requirement

The pavement shall be Flexible type for entire length of project highway (For Main Carriageway and Service Road). However, the concessionaire is free to choose the type of pavement without any cost implication to the authority.

5.2.1 Design Period and Strategy: - Flexible Pavement shall be designed for a minimum design period of 20 years and minimum sub grade CBR of 8% and maximum subgrade CBR of 10%. whereas Rigid pavement shall be designed for a minimum design period of 30 years. Stage construction shall not be permitted.

5.2.2 Recommended Pavement Design: - Notwithstanding anything to the contrary contained in this Agreement or the manual, the Concessionaire shall design the pavement of main carriageway for a minimum design traffic of 110 MSA. Higher design traffic shall be

adopted if found during traffic survey. MCW shall be designed for 90% reliability as per IRC 37.

5.2.3 The pavement for service road/slip roads/ramps shall be designed for a minimum design traffic of 50 MSA. All service road/slip roads/ramps shall be designed for 90% reliability as per IRC 37.

5.2.4 Deleted

5.2.5 Deleted

5.2.6 Deleted

5.2.7 Deleted

5.3 Deleted

5.4 Reconstruction of Stretches with New pavement

The following stretches of the existing road shall be reconstructed. These shall be designed as new pavement.

Sr. No.	Design Chainage (km)		Pavement composition	Remarks
	From	To		
	Nil			

5.5 Bituminous Mix for Overlay

The following stretches of the existing road shall be provided bituminous overlay as follows:

Sr. No.	Design Chainage (km)		Overlay Pavement Composition	Remarks
	From	To		
	Nil			

6 Roadside Drainage

6.1 Drainage system including surface and subsurface drains for the Project Highway including crossroads shall be provided as per section 6 of the Manual. Concessionaire shall provide a drainage plan along with its drainage profile which should be reviewed and approved by the Independent Engineer. RCC Drain shall conform to the cross-sectional features and other details as given in Annexure II to Schedule-B and shall be provided as under:

Details of RCC Drain for Main Carriageway

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)	
45+645	46+440	795	45+645	46+440	795	1.2X1.2
47+100	47+240	140	46+560	46+600	40	1.2X1.2
47+280	47+320	40	46+640	46+840	200	1.2X1.2
47+500	47+660	160	47+040	47+080	40	1.2X1.2

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)	
47+740	47+940	200	47+100	47+320	220	1.2X1.2
48+160	48+180	20	47+400	47+660	260	1.2X1.2
48+220	48+274	54	47+700	47+920	220	1.2X1.2
48+780	49+020	240	48+060	48+100	40	1.2X1.2
49+360	50+040	680	48+120	48+274	154	1.2X1.2
50+080	50+100	20	48+800	49+040	240	1.2X1.2
50+140	50+572	432	49+380	50+060	680	1.2X1.2
50+620	50+880	260	50+180	50+542	362	1.2X1.2
51+180	51+220	40	50+620	50+880	260	1.2X1.2
51+240	51+380	140	51+140	51+400	260	1.2X1.2
51+740	51+820	80	51+860	52+280	420	1.2X1.2
51+860	52+240	380	52+360	52+420	60	1.2X1.2
52+360	52+460	100	52+500	52+780	280	1.2X1.2
52+500	52+740	240	52+860	52+900	40	1.2X1.2
52+840	52+880	40	52+980	53+280	300	1.2X1.2
52+960	53+260	300	53+560	53+800	240	1.2X1.2
53+600	53+640	40	53+880	53+920	40	1.2X1.2
53+720	53+800	80	53+980	54+280	300	1.2X1.2
53+880	53+920	40	54+340	54+360	20	1.2X1.2
54+000	54+120	120	54+460	54+625	165	1.2X1.2
54+140	54+220	80	55+360	55+420	60	1.2X1.2
54+460	54+625	165	55+480	55+500	20	1.2X1.2
55+340	55+420	80	55+540	55+580	40	1.2X1.2
55+560	55+580	20	55+620	55+840	220	1.2X1.2
55+660	55+760	100	55+920	55+980	60	1.2X1.2
55+780	55+800	20	56+100	56+500	400	1.2X1.2
56+080	56+260	180	56+720	56+840	120	1.2X1.2
56+300	56+520	220	57+160	57+256	96	1.2X1.2
57+160	57+256	96	57+440	57+540	100	1.2X1.2
57+320	57+340	20	57+580	57+660	80	1.2X1.2
57+420	57+540	120	57+700	57+880	180	1.2X1.2
57+580	57+660	80	58+860	58+920	60	1.2X1.2
57+700	57+880	180	59+040	59+220	180	1.2X1.2
57+940	58+020	80	59+360	59+420	60	1.2X1.2
58+300	58+420	120	59+480	59+620	140	1.2X1.2
58+900	58+920	20	59+680	59+740	60	1.2X1.2
59+340	59+720	380	59+800	60+000	200	1.2X1.2
59+760	60+020	260	60+180	60+300	120	1.2X1.2
60+240	60+280	40	60+780	60+820	40	1.2X1.2
60+620	60+680	60	60+940	61+020	80	1.2X1.2
60+760	60+820	60	61+380	62+240	860	1.2X1.2
60+880	61+040	160	62+420	62+460	40	1.2X1.2
61+400	61+640	240	62+540	62+580	40	1.2X1.2
61+660	62+260	600	62+660	62+680	20	1.2X1.2
62+280	62+320	40	62+840	62+920	80	1.2X1.2
62+360	62+480	120	63+040	63+080	40	1.2X1.2
62+560	62+700	140	63+340	63+400	60	1.2X1.2
62+880	63+080	200	63+440	63+620	180	1.2X1.2
63+180	63+240	60	63+680	64+020	340	1.2X1.2
63+280	63+300	20	64+080	64+140	60	1.2X1.2
63+360	63+420	60	64+180	64+540	360	1.2X1.2
63+440	63+580	140	64+640	65+060	420	1.2X1.2

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)	
63+680	63+940	260	65+220	65+260	40	1.2X1.2
64+180	64+200	20	65+300	65+340	40	1.2X1.2
64+220	64+560	340	65+360	65+420	60	1.2X1.2
64+700	65+100	400	65+460	65+500	40	1.2X1.2
65+220	65+240	20	65+620	65+680	60	1.2X1.2
65+280	65+320	40	65+700	65+860	160	1.2X1.2
65+360	65+380	20	65+960	65+980	20	1.2X1.2
65+460	65+480	20	66+020	66+040	20	1.2X1.2
66+380	66+780	400	66+280	66+300	20	1.2X1.2
66+800	66+820	20	66+380	66+760	380	1.2X1.2
67+040	67+280	240	66+840	66+940	100	1.2X1.2
67+420	67+520	100	67+040	67+300	260	1.2X1.2
67+560	67+680	120	67+420	67+520	100	1.2X1.2
67+760	68+020	260	67+560	67+700	140	1.2X1.2
68+060	68+160	100	67+760	68+040	280	1.2X1.2
68+220	68+460	240	68+080	68+160	80	1.2X1.2
68+480	68+540	60	68+260	68+560	300	1.2X1.2
68+560	68+610	50	68+680	68+940	260	1.2X1.2
68+640	68+920	280	69+310	69+460	150	1.2X1.2
68+980	69+020	40	69+480	69+600	120	1.2X1.2
69+340	69+600	260	69+640	69+900	260	1.2X1.2
69+620	69+800	180	69+920	70+000	80	1.2X1.2
69+820	69+880	60	70+180	70+280	100	1.2X1.2
70+145	70+200	55	70+320	70+420	100	1.2X1.2
70+300	70+380	80	70+460	70+540	80	1.2X1.2
70+440	70+560	120	70+860	70+880	20	1.2X1.2
70+980	71+180	200	70+980	71+400	420	1.2X1.2
71+220	71+400	180	71+420	71+520	100	1.2X1.2
71+420	71+660	240	71+580	71+640	60	1.2X1.2
71+680	71+740	60	71+840	71+860	20	1.2X1.2
71+880	71+920	40	71+880	71+935	55	1.2X1.2
72+160	72+220	60	72+180	72+220	40	1.2X1.2
72+360	72+420	60	72+880	73+100	220	1.2X1.2
72+500	72+600	100	73+580	73+620	40	1.2X1.2
72+640	72+660	20	73+820	73+900	80	1.2X1.2
72+760	72+780	20	74+040	74+060	20	1.2X1.2
72+840	72+860	20	74+080	74+400	320	1.2X1.2
72+880	73+020	140	74+460	75+000	540	1.2X1.2
73+140	73+180	40	75+060	75+460	400	1.2X1.2
73+540	73+640	100	75+580	75+905	325	1.2X1.2
73+700	73+740	40	75+960	76+060	100	1.2X1.2
73+820	73+920	100	76+080	76+120	40	1.2X1.2
74+040	74+400	360	76+200	76+340	140	1.2X1.2
74+420	75+020	600	76+480	76+580	100	1.2X1.2
75+060	75+460	400	76+700	77+120	420	1.2X1.2
75+580	75+880	300	77+300	77+420	120	1.2X1.2
75+960	76+060	100	77+730	78+160	430	1.2X1.2
76+080	76+120	40	78+180	78+220	40	1.2X1.2
76+180	76+400	220	78+280	78+300	20	1.2X1.2
76+420	76+540	120	78+320	78+440	120	1.2X1.2
76+700	77+080	380				1.2X1.2
77+300	77+340	40				1.2X1.2

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)	
77+360	77+420	60				1.2X1.2
77+730	78+160	430				1.2X1.2
78+400	78+440	40				1.2X1.2
78+540	78+600	60				1.2X1.2
		17157	Total			17892

Details of RCC Drain for Interchanges

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
Interchange at km 54+760		1877	Interchange at km 54+760		1877
Interchange at km 64+970		1501	Interchange at km 64+970		1501
Interchange at km 77+750		2300	Interchange at km 77+750		2300
		5678			5678

Note:

- *Unlined drain and lined covered drain/RCC drain/Footpath cum drain shall conform to the cross-sectional features and other details specified as per section 2.10 of Annex-I of Schedule-B.*
- *The water from main carriageway to be drained to the nearest RCC drain through piping network which will be laid below slip/service road. Interval to be decided based on-site conditions.*
- *The above locations are minimum. Additional locations, if any required to maintain continuity in drainage to the nearest outfall/cross drainage structure as per site condition shall be provided as per manual. Any increase in length up to 10% of the scope defined above shall not be treated as a change in scope of work.*

6.2 Unlined Drains other than the above-mentioned locations shall be provided in the entire project length which gets terminated at all crossroad locations. In case, the definite outfall is not available, a rainwater harvesting system shall be provided at the deepest location for dispersal of water.

The size of Unlined drain should have a minimum width of 0.6m at bottom, minimum depth of 0.6m and a minimum side slope of 2H to 1V. The Bed slope should be based on drainage profile.

The drainage plan shall account for the water from the ROW area along with the area outside the ROW as well.

6.3 Median Drain

Lined drain shall be provided in the centre of the median in the entire stretch of the Project Highway with depressed/Flushed median and turbing on both side of the Drain as per IRC SP 42. Draining of storm water from one carriage way to other carriageway is not permitted. The concessionaire shall design the median drain based on site/design requirement mentioned in schedule D with approval from the Independent Engineer and shall be connected with the nearest culvert/outfall.

6.4 Drainage arrangement between Main Carriageway and Service/Slip Roads

A suitable drainage arrangement for draining storm water of main carriageway shall be provided. Storm water of main carriageway to service road is not permitted.

6.5 Drainage where Embankment Height is more than 3m

Drainage chutes shall be provided at suitable interval (maximum spacing c/c 20m) on embankment slopes as per Typical cross section attached as ANNEX – II (SCHEDULE – B). The drainage arrangement shall include kerb, cement concrete drainage channel at the edge roadway, Cement Concrete Chutes, CC bedding, energy dissipation basin, etc. Mountable Kerb shall be provided beyond the post of MBCB to channelize storm water into chute (Clause No. 6.8.2.4 of IRC: SP:84)

6.6 Drainage for Structures (Clause No. 6.8 IRC: SP: 84)

A suitable drainage arrangement for draining storm water from deck slab shall be provided. Water shall not fall on any surface of the structures, or remain standing or flowing over the road below structure.

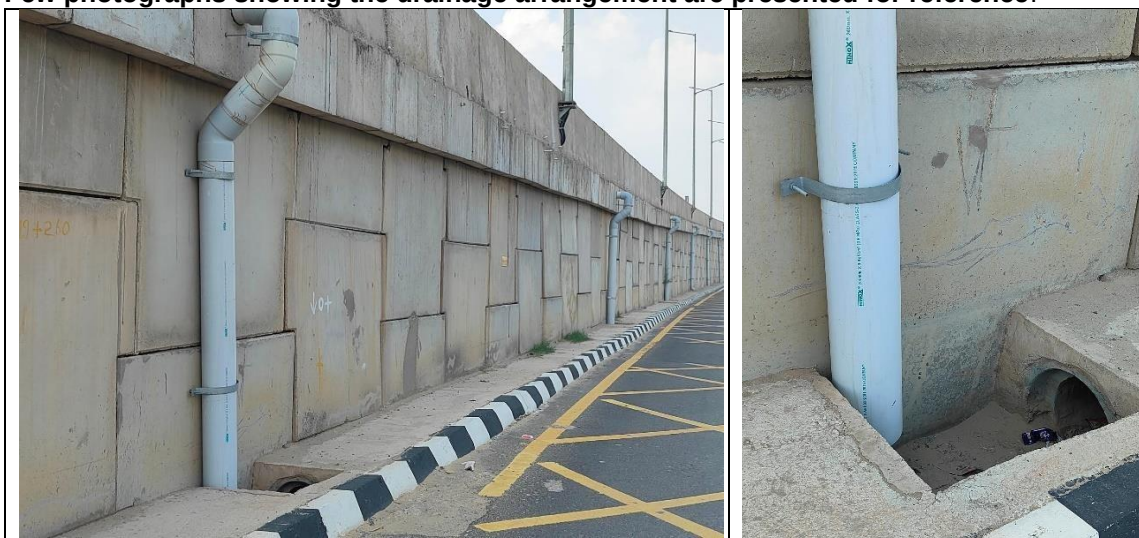
6.7 Drainage for Underpass and Subways Structures (Clause No. 6.8.3 IRC: SP: 84)

A suitable drainage arrangement for draining storm water from Underpass and Subways shall be provided.

6.8 Drainage arrangement of Retaining Structures

Vertical Drop-down drainage pipes with suitable cleaning provision shall be provided at suitable interval. Drainage fixtures and dropdown pipes shall be of rigid, corrosion resistant material not less than 100mm dia. The storm water of main carriageway draining on service road is not permitted.

Few photographs showing the drainage arrangement are presented for reference.



Takedown pipe at interval with 300mm Dia HP in separator and cross connection to side drains.



Alternatively: Long pipe sloped along ramp with connection with drainage spout & vertical take down pipe and connected to main drain

7 Design of Structures

7.1 General

Project Highway is proposed to be constructed to Four lane configuration. As such, superstructure of all bridges, culverts and structures is to be designed for edge movement of the vehicle considering stitching of new superstructure in future due to widening for additional lane. **All bridges, culverts and structures to be designed for Special Vehicle (SV) loading, Class 70R, Class A and congestion factor, whichever is critical, as per latest IRC provisions.**

All structures except wherever expansion joints have been provided, the pavement layers (WMM, DBM & BC) shall be continued over the structures for smooth riding quality of the project highway. These structures shall be designed considering the dead load of pavement (WMM, DBM, BC, etc) layers.

All major structures will be designed preferably as continuous slab to reduce the number of expansion joints on the MJB/ ROBs/ flyover/ interchange etc.

- 7.1.1** All structures to be designed for Special Vehicle (SV) loading, Class 70R, Class A and congestion factor, whichever is critical, as per latest IRC provisions. and constructed in accordance with section-7 of the manual and shall conform to the cross-sectional features and other details specified therein. Seismic Design of Structures to conform as per the latest IS codes and Seismic Zones.
- 7.1.2** Clear deck width of bridges/grade separated structures/ RoBs (measured from inside to inside of crash barrier) in their approaches shall be equal to the roadway width (carriageway width+ paved shoulder width+ earthen shoulder width+ width of median including shyness for raised median /depressed median as applicable). In case of footpath on bridge/RoB, the width of earthen shoulder shall be tapered at the rate of 1:15 (MORTH Circular: RW/NH-33044/22/2020-S&R dated 4th June, 2024).

- 7.1.3** The Safety Barrier and Footpath on Bridges and ROB shall continue on approaches. The footpath shall be provided with paved surface & railing till the embankment height is more than 3m (Clause No. 7.17 IRC: SP:84)

Details of Structures with footpaths

Sr. No.	Location at km	Skew Angle	Footpath Width(m)	Remarks
1	48+790	-	1.5	Footpath on Bridges
2	49+735	-	1.5	Footpath on Bridges
3	50+200	-	1.5	Footpath on Bridges
4	51+825	-	1.5	Footpath on Bridges
5	51+890	18	1.5	Footpath on Bridges
6	52+600	-	1.5	Footpath on Bridges
7	53+020	-	1.5	Footpath on Bridges
8	53+765	-	1.5	Footpath on Bridges
9	54+060	-	1.5	Footpath on Bridges
10	54+560	-	1.5	Footpath on Bridges
11	55+360	-	1.5	Footpath on Bridges
12	56+160	-	1.5	Footpath on Bridges
13	57+800	-	1.5	Footpath on Bridges
14	59+595	-	1.5	Footpath on Bridges
15	59+930	-	1.5	Footpath on Bridges
16	62+003	-	1.5	Footpath on Bridges
17	62+890	-	1.5	Footpath on Bridges
18	63+725	22	1.5	Footpath on Bridges
19	64+295	-	1.5	Footpath on Bridges
20	66+585	-	1.5	Footpath on Bridges
21	67+460	-	1.5	Footpath on Bridges
22	67+937	28	1.5	Footpath on Bridges
23	71+240	-	1.5	Footpath on Bridges
24	72+900	-	1.5	Footpath on Bridges
25	74+445	25	1.5	Footpath on Bridges
26	74+810	-	1.5	Footpath on Bridges
27	75+835	-	1.5	Footpath on Bridges
28	76+260	28	1.5	Footpath on Bridges
29	76+770	-	1.5	Footpath on Bridges
30	76+960	-	1.5	Footpath on Bridges
31	77+380	-	1.5	Footpath on Bridges

- 7.1.4** All bridges shall be high-level bridges.

- 7.1.5** All structures shall be designed to carry utility services on outer side of RCC barrier/Railing as per site requirement. The design loads for the crash barriers shall be as per IRC-6.

- 7.1.6** Cross section of the new culverts and bridges at deck level for the Project Highway shall conform to the typical cross sections given in Section 2.10 of Annex-I Schedule-B.

- 7.1.7** An inspection gallery along with a caged ladder (access from the deck slab) to be provided at each pier location for facilitating regular inspection of structures. An indicative General Arrangement Drawing (GAD) has been prepared and is attached at Appendix-A which may be made a part of Concession/Contract Agreement. For location where access for the deck slab is not possible from the top, the same may be provided from the bottom i.e. by providing staircase along the pier up to the top of pier cap along with an inspection platform all around the pier cap as shown in the indicative GAD. If this is not feasible, then some other kind of arrangement has to be made to provide access to the top of pier cap for inspecting bearings, underneath the box/slab structures etc.
- 7.1.8** Staircase (with stone masonry/concrete) in the approaches to box/slab culverts (near the end of return wall)/minor and major bridge by the side of abutments on either side of the carriageway to access the underneath box/slab culverts/bridges. An indicative picture is shown below (for understanding purpose only)



7.2 Culverts

- 7.2.1** Overall width of all culverts shall be equal to the roadway width of the approaches. The overall width of culverts shall be including width of main carriageway and slip/service roads/Entry ramps/Exit Ramps/Acceleration/Deceleration lanes, etc. All culverts shall also be continued in median and in gap between main carriageway and service road.

7.2.2 New/Reconstruction of existing RCC pipe culverts: The existing culverts at the following locations shall be re-constructed as new culverts:

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	New/ Reconstruction	Culvert Crossing Type (Balancing/Stream, etc.)	Remarks
Nil							

7.2.3 Widening of existing RCC Pipe culverts

All existing culverts which are to be retained shall be widened to the proposed roadway width of the Project Highway as per the typical cross section given in section 7 of the Manual. Repairs and strengthening of existing structures where required shall be carried out.

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	Repairs / Rehabilitation proposals	Culvert Crossing Type (Balancing/ Stream, etc.)	Remarks
Nil							

7.2.4 Construction of Box Culverts:**7.2.5 New/Reconstruction of box culverts** (given in table below) shall be constructed for width equal to the proposed roadway width of the Project Highway & as per typical cross-section given in schedule B. The details are given as under:

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	46+880	1	6.00		Drain	New Proposed
2	46+990	1	5.00		Drain	New Proposed
3	47+360	1	6.00	52	Drain	New Proposed
4	47+680	1	6.00		Drain	New Proposed
5	48+020	1	5.00	30	Drain	New Proposed
6	48+480	1	3.00		Drain	New Proposed
7	48+550	1	6.00	52	Drain	New Proposed
8	48+650	1	6.00	16	Drain	New Proposed
9	49+050	1	5.00		Drain	New Proposed
10	49+090	1	5.00		Drain	New Proposed
11	50+100	1	3.00	42	Drain	New Proposed
12	50+525	1	2.00	31	Drain	New Proposed
13	50+955	1	5.00	20	Drain	New Proposed
14	51+000	1	5.00	17	Drain	New Proposed
15	51+680	1	5.00		Drain	New Proposed
16	52+320	1	2.00	47	Drain	New Proposed
17	52+460	1	2.00	32	Drain	New Proposed
18	52+810	1	2.00		Drain	New Proposed
19	52+900	1	2.00	29	Drain	New Proposed
20	53+280	1	2.00		Drain	New Proposed

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
21	53+500	1	2.00	11	Drain	New Proposed
22	53+680	1	2.00		Drain	New Proposed
23	53+820	1	3.00		Drain	New Proposed
24	53+940	1	2.00		Drain	New Proposed
25	54+300	1	6.00		Drain	New Proposed
26	54+380	1	5.00	13	Drain	New Proposed
27	54+700	1	6.00		Drain	New Proposed
28	54+760	1	3.00		Drain	New Proposed
29	55+090	1	6.00	10	Drain	New Proposed
30	55+175	1	5.00	29	Drain	New Proposed
31	55+445	1	5.00		Drain	New Proposed
32	55+600	1	3.00	23	Drain	New Proposed
33	55+880	1	3.00		Drain	New Proposed
34	56+270	1	2.00		Drain	New Proposed
35	56+530	1	3.00	40	Drain	New Proposed
36	56+640	1	3.00		Drain	New Proposed
37	56+900	1	5.00		Drain	New Proposed
38	57+360	1	5.00	28	Drain	New Proposed
39	57+555	1	3.00		Drain	New Proposed
40	57+670	1	3.00		Drain	New Proposed
41	57+900	1	2.00		Drain	New Proposed
42	58+060	1	2.00		Drain	New Proposed
43	58+130	1	2.00		Drain	New Proposed
44	58+220	1	5.00		Drain	New Proposed
45	58+275	1	3.00		Drain	New Proposed
46	58+500	1	3.00	47	Drain	New Proposed
47	58+605	1	5.00		Drain	New Proposed
48	58+930	1	2.00		Drain	New Proposed
49	59+030	1	2.00	17	Drain	New Proposed
50	59+280	1	2.00	49	Drain	New Proposed
51	59+640	1	2.00	35	Drain	New Proposed
52	59+760	1	3.00	53	Drain	New Proposed
53	60+130	1	2.00		Drain	New Proposed
54	60+180	1	2.00		Drain	New Proposed
55	60+310	1	2.00	33	Drain	New Proposed
56	60+570	1	5.00		Drain	New Proposed
57	60+680	1	3.00		Drain	New Proposed

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
58	60+860	1	2.00	25	Drain	New Proposed
59	61+060	1	3.00		Drain	New Proposed
60	61+360	1	6.00		Drain	New Proposed
61	61+390	1	2.00		Drain	New Proposed
62	61+650	1	2.00		Drain	New Proposed
63	62+260	1	2.00		Drain	New Proposed
64	62+350	1	2.00		Drain	New Proposed
65	62+510	1	5.00	52	Drain	New Proposed
66	62+710	1	5.00		Drain	New Proposed
67	62+780	1	3.00	51	Drain	New Proposed
68	63+000	1	5.00		Drain	New Proposed
69	63+120	1	5.00		Drain	New Proposed
70	63+255	1	5.00		Drain	New Proposed
71	63+315	1	5.00		Drain	New Proposed
72	63+425	1	5.00		Drain	New Proposed
73	63+640	1	3.00		Drain	New Proposed
74	64+060	1	2.00		Drain	New Proposed
75	64+150	1	2.00		Drain	New Proposed
76	64+320	1	2.00		Drain	New Proposed
77	65+165	1	5.00		Drain	New Proposed
78	65+260	1	3.00		Drain	New Proposed
79	65+340	1	2.00		Drain	New Proposed
80	65+440	1	3.00		Drain	New Proposed
81	65+525	1	5.00		Drain	New Proposed
82	65+590	1	6.00		Drain	New Proposed
83	65+680	1	3.00		Drain	New Proposed
84	65+870	1	6.00		Drain	New Proposed
85	66+350	1	6.00		Drain	New Proposed
86	66+810	1	3.00		Drain	New Proposed
87	67+310	1	6.00	18	Drain	New Proposed
88	68+040	1	2.00	32	Drain	New Proposed
89	68+195	1	5.00	32	Drain	New Proposed
90	68+960	1	6.00		Drain	New Proposed
91	69+460	1	2.00		Drain	New Proposed
92	69+605	1	6.00	38	Drain	New Proposed
93	69+900	1	6.00	20	Drain	New Proposed
94	70+300	1	5.00	41	Drain	New Proposed

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
95	70+430	1	3.00	34	Drain	New Proposed
96	70+762	1	5.00	32	Drain	New Proposed
97	70+805	1	5.00	32	Drain	New Proposed
98	70+890	1	5.00		Drain	New Proposed
99	71+400	1	2.00		Drain	New Proposed
100	71+668	1	2.00		Drain	New Proposed
101	71+775	1	5.00	35	Drain	New Proposed
102	71+845	1	5.00	15	Drain	New Proposed
103	72+250	1	5.00	23	Drain	New Proposed
104	72+460	1	5.00		Drain	New Proposed
105	72+630	1	2.00		Drain	New Proposed
106	72+700	1	5.00		Drain	New Proposed
107	72+815	1	3.00		Drain	New Proposed
108	73+105	1	2.00		Drain	New Proposed
109	73+330	1	5.00	32	Drain	New Proposed
110	73+510	1	3.00		Drain	New Proposed
111	73+760	1	3.00		Drain	New Proposed
112	74+400	1	2.00		Drain	New Proposed
113	74+840	1	2.00		Drain	New Proposed
114	75+030	1	2.00		Drain	New Proposed
115	75+465	1	5.00		Drain	New Proposed
116	75+550	1	3.00	67	Drain	New Proposed
117	75+760	1	2.00		Drain	New Proposed
118	76+050	1	3.00		Drain	New Proposed
119	76+150	1	5.00	12	Drain	New Proposed
120	76+400	1	2.00		Drain	New Proposed
121	77+185	1	6.00		Drain	New Proposed
122	77+480	1	2.00		Drain	New Proposed
123	78+220	1	5.00	31	Drain	New Proposed

Culverts at Interchange Km 54+760

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+120 (Rotary)	1	5.00		Drain	New Proposed
2	0+145 (Rotary)	1	5.00	17	Drain	New Proposed
3	0+480 (Rotary)	1	2.00		Drain	New Proposed
4	0+260 (Ramp-2)	1	5.00		Drain	New Proposed
5	0+325 (Ramp-2)	1	6.00	7	Drain	New Proposed
6	0+240 (Ramp-3)	1	6.00	14	Drain	New Proposed
7	0+300 (Ramp-3)	1	6.00		Drain	New Proposed
8	0+345 (Existing SH)	1	5.00	39	Drain	New Proposed
9	0+400 (Existing SH)	1	2.00	8	Drain	New Proposed

Culverts at Interchange Km 64+970

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+210 (Ramp-3)	1	6.00	-	Drain	New Proposed
2	0+290 (Ramp-3)	1	5.00	-	Drain	New Proposed
3	0+370 (Ramp-3)	1	5.00	-	Drain	New Proposed
4	0+525 (Ramp-3)	1	6.00	-	Drain	New Proposed
5	0+460 (Ramp-3)	1	2.00	-	Drain	New Proposed

Culverts at Interchange Km 77+750

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+470 (Rotary)	1	5.00		Drain	New Proposed
2	0+345 (Ramp-1)	1	2.00		Drain	New Proposed

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
3	0+480 (Ramp-2)	1	2.00		Drain	New Proposed

Note:

Wherever an irrigation canal crosses the Cross Drainage structure, the Concessionaire shall construct the Cross Drainage structure without obstructing or adversely affecting the existing canal, natural waterway, drainage pattern, or flow conditions. Any damage, disturbance, modification, or diversion caused to the canal, watercourse, embankments, lining, hydraulic structures, or appurtenant works during execution of the Works shall be rectified by the Concessionaire at its own cost. The affected portions shall be restored and reinstated to their original condition or as approved by the Independent Engineer and the concerned authority.

7.2.6 Widening of existing box culverts

All existing culverts which are to be retained shall be widened to the proposed roadway width of the Project Highway as per the typical cross section given in Schedule-B. Repairs and strengthening of existing structures where required shall be carried out.

Sr. No	Design Chainage	Culvert Type	Skew Angle	Span/ Opening (m)	Repairs / Rehabilitation proposals	Culvert Crossing Type (Balancing/ Stream, etc.)	Remarks
Nil							

7.2.7 Culverts on Crossroads**Box Type Structures on Crossroads: (Clause No. 6.2.7 IRC: SP:84)**

Sr. No	Design Chainage (km)	Span Arrangement (m)	Type (Box)	Length of Culvert	Remark
18 Nos. Box barrel of appropriate size shall be provided.					

7.2.8 Utility ducts in the form of NP-4 RCC Pipe dia. 600mm shall be provided across the Project Highway @ 0.5km c/c and along with inspection chamber for crossing of utilities as per details given below.

Sr. No	Design Chainage (km)		Remark
	From	To	
1	45.645	78.600	55 No. Single Row for one utility services @ 300m
2	45.645	78.600	55 Nos. Double Row for two utility services @ 600m
3	1650 m Length (Both side length-3300 m)		Longitudinal duct

Note:

- The locations of the utility ducts shall be finalized in consultation with Independent Engineer/Authority.
- The span given above are minimum and the proposed dimensions shall be based on hydraulic calculations and approval from Independent Engineer. The barrel length of the

culverts shall be as per requirement of the highway embankment and approval from the Independent Engineer. Any change in span/opening and barrel length shall not constitute a change of scope.

3. All Culverts structures shall be designed to carry utility services like OFC Cables, Electricity Lines etc
4. In addition to the above locations, the Concessionaire shall construct culverts at the depressed locations along the Profile of Proposed Highway wherever required for cross drainage. These additional Culverts if required shall not constitute a Change of Scope. It is clarified that as per site requirement New Culverts if required for drainage arrangement shall be identified & constructed if any during development shall be constructed as per standard set forth in Schedule 'D' & as per instruction of Independent Engineer without any cost to the client.

7.3 Bridges

7.3.1 Existing Bridges to be reconstructed/widened:

Existing bridges proposed for to be re-construction as new structures.

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Min. Span Length (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
					MCW	SR		
1	0+470 (Existing SH 09 at 1 st Interchange)	8	8	Stream	12.50	-	50	Re- construction
2	0+229 (Existing NH-06 at 3 rd Interchange)	25.00	25	Stream	11.00	-	-	New construction

Existing narrow bridges proposed to be retained and widened:

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle
					MCW	SR		
Nil								

Note:

- 1 All Major and Minor Bridges to be designed for approach protection with concrete Toe wall with filter media and stone/ block pitching up to HFL of bridge +0.6 m with full height stone/ block pitching in cone filling portion of all four sides of abutments.
- 2 All river bridges & underpasses without slip roads shall be provided with steps for accessing the bottom in all two-cone filling portion for easy assessable bridges and approaches.

7.3.2 Additional 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:

Sr. No	Design Chainage (Km)	Total Proposed length (m)	No. of Span	Span Arrangement (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
						MCW	SR		
1	46+500	120	1	120.00	Stream	2X14.50	-		New construction
2	48+330	112	1	112.00	Stream	2X14.50	-		New construction
3	48+580	16	1	16.00	Stream	2X14.50 (Skew width- 2X23.552m)	-	52	New construction
4	49+220	10	1	10.00	Stream	2X14.50	-		New construction
5	51+470	40	1	40.00	Stream	2X14.50	-		New construction
6	53+460 (RHS)	18	1	18.00	Stream	1X14.50	-		New construction
	53+460 (LHS)	25	1	25.00	Stream	1X14.50	-		New construction
7	55+030	10	1	10.00	Stream	2X14.50	-		New construction
8	56+005	10	1	10.00	Stream	2X14.50 (Skew width- 2X20.506m)	-	45	New construction
9	56+985	25	1	25.00	Stream	2X14.50	-		New construction
10	58+690	15	1	15.00	Stream	2X14.50 (Skew width- 2X15.752m)	-	23	New construction
11	58+955	15	1	15.00	Stream	2 x 14.50 (Skew width- 2X15.012m)	-	15	New construction
12	60+440	8	1	8.00	Stream	2 X 14.50 (Skew width- 2X15.532m)	-	21	New construction
13	61+205	15	1	15.00	Stream	2 x 14.50 (Skew width- 2X17.701m)	-	35	New construction
14	61+305	10	1	10.00	Stream	2 x 14.50 (Skew width- 2X15.084m)	-	16	New construction
15	64+600	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X19.213m)	-	41	New construction
16	66+185	20	1	20.00	Stream	2 x 14.50	-		New construction
17	67+005	10	1	10.00	Stream	2 x 14.50	-		New construction

Sr. No	Design Chainage (Km)	Total Proposed length (m)	No. of Span	Span Arrangement (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
						MCW	SR		
18	67+385	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X15.639m)	-	22	New construction
19	67+530	30	1	30.00	Stream	2 x 14.50	-		New construction
20	67+715	40	1	40.00	Stream	2 x 14.50	-		New construction
21	68+615	10	1	10.00	Stream	2 x 14.50 (Skew width- 2X19.213m)	-	41	New construction
22	69+165	290	1 1 1	90.00 110.00 90.00	Stream	2 x 14.50	-		New construction
23	70+085	120	3	40.00	Stream	2 x 14.50	-		New construction
24	71+955	40	1	40.00	Stream	2 x 14.50	-		New construction
25	72+100	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X17.923m)	-	36	New construction
26	73+240	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X14.881m)	-	13	New construction
27	73+665	8	1	8.00	Stream	2 X 14.50 (Skew width- 2X18.156m)	-	37	New construction
28	74+000	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X15.752m)	-	23	New construction
29	75+910	8	1	8.00	Stream	2 X 14.50 (Skew width- 2X27.363m)	-	58	New construction
30	76+660	10	1	10.00	Stream	2 X 14.50	-		New construction
31	77+630	140	4	35.00	Stream	2 X 14.50	-		New construction
32	78+480	10	1	10.00	Stream	2 X 14.50 (Skew width- 2X24.669m)		54	

Interchange At Ch 54.760Km

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Min. Span Length (m)	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
					MCW	SR			
NIL									

Interchange At Ch 64.970Km

Sr. No	Design Chainage (Km)	Total Proposed length (m)	No. of Span	Span Arrangement (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
						MCW	SR		
1	0+380 (Ramp-1)	160	4	40	Stream	12.50	-	-	New construction
2	0+730 (Ramp-1)	80	2	40	Stream	13.00	-	-	New construction
3	0+063 (Ramp-2)	105	3 1	35 10	Stream	13.00	-	-	New construction (excluding connecting span)
4	0+500 (Ramp-2)	560	14	40	Stream	12.50 & 14.50 (Toll area)	-	-	New construction
5	0+638 (Ramp-3)	105	3	35	Stream	12.50	-	-	New construction
6	0+748 (Ramp-3)	45	1 1	20 25	Stream	13.00	-	-	New construction
7	0+505 (Ramp-4)	108	3 1	30 18	Stream	12.50	-	-	New construction

Interchange At Ch 77.750Km

Sr. No	Design Chainage (Km)	Total Proposed length (m)	No. of Span	Span Arrangement (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
						MCW	SR		
1	0+065 (Ramp-1)	20.00	1	20	Stream	12.50	-	-	New construction

Sr. No	Design Chainage (Km)	Total Proposed length (m)	No. of Span	Span Arrangement (m)	Type of Crossing	Total Proposed width (m)		Skew Angle	Remarks
						MCW	SR		
2	0+230 (Ramp-1)	40.00	1	40	Stream	14.50	-	-	New construction
3	0+570 (Ramp-2)	40.00	1	40	Stream	14.50	-	-	New construction
4	0+578 (Ramp-4)	30.00	1	30	Stream	12.50	-	-	New construction

Note:

1. The span & Length given above are minimum and the proposed dimensions shall be based on hydraulic calculations and approval from Independent Engineer. Any increase in length up to 10% of the proposed length will not constitute a Change of Scope. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%.
2. Concessionaire can adopt any type of structure (RCC/PSC - Slab/Box/Girder Type etc) for Bridge Construction in conformity with site conditions. Span arrangement of Bridge shall be designed by contractor on the basis of detailed surveys & investigations subject to minimum specified in GAD. Foundation levels/type shall be decided based on detailed Geo-Technical investigation. Waterway, Finished Road Level, soffit etc. shall be decided on the basis of survey conforming to various codal provision applicable. However, the minimum Proposed FRL as per enclosed GAD for all minor bridges shall be maintained.
3. All Major and Minor Bridges to be designed for approach protection with concrete Toe wall with filter media and stone/ block pitching up to HFL of bridge +0.6 m with full height stone/ block pitching in cone filling portion of all two sides of abutments.
4. All river bridges & underpasses without slip roads shall be provided with steps for accessing the bottom in all two-cone filling portion for easy assessable bridges and approaches.
5. Requisite Stream/River Training work wherever required for the structures are to be considered within the scope of the work.
6. The connecting spans between viaducts in the Ramps of Interchanges is in the scope of the Concessionaire
7. Wherever an irrigation canal crosses the Cross Drainage structure, the Concessionaire shall construct the Cross Drainage structure without obstructing or adversely affecting the existing canal, natural waterway, drainage pattern, or flow conditions. Any damage, disturbance, modification, or diversion caused to the canal, watercourse, embankments, lining, hydraulic structures, or appurtenant works during execution of the Works shall be rectified by the Concessionaire at its own cost. The affected portions shall be restored and reinstated to their original condition or as approved by the Independent Engineer and the concerned authority.

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

Sr. No.	Design Chainage		Length (km)	Remarks
	From	To		
Nil				

7.3.4 The existing bridges/ RoB/ Grade Separators/ RUB retained on the project highway shall be upgraded and rehabilitation measures/proposals shall be as follows:

Sr. No.	Design Chainage (km)	Rehabilitation Proposals	Remarks
Nil			

7.3.5 Structures in marine environment: Nil.

7.4 Railroad Bridges (ROB/RUB)

7.4.1 Design, construction and detailing of ROB/RUB shall be as specified in Section 7 of the manual.

7.4.2 Road over bridges (road over rail) shall be provided at the following locations, as per GAD drawings attached:

Sr. No.	Design Chainage (Km)	Proposed Span Arrangement (m)	Type of super-structure (i.e. Bow string, simply supported composite structure etc.	Name of crossing	Total Width m)	Skew Angle	Remarks
Nil							

Note:

If the length/width of the span/ type of super-structure is changed due to any reason the COS shall be considered.

1. ROB shall be designed, constructed and maintained as per the requirements of Railway authorities. The construction plan shall be prepared in consultation with the concerned railway authority.
2. The ROB shall be constructed and maintained by the concessionaire under supervision of the Railways.
3. All charges payable to the Railways like D&G, capitalized maintenance, signaling, cabling, OHE modification, earthing etc. except P&E charges shall be borne by the Concessionaire.

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

Sr. No.	Existing Chainage (km)	Design Chainage (km)	No. of Tracks	Proposed Structure Type	Proposed Span arrangement No of span x span length (m)	Skew Angle (degrees)	Total width of the structure (m)
Nil							

7.5 Grade Separated Structures

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2.9 ,2.10 and 3 of Annexure-I of Schedule-B.

7.6 FoB/Skywalks

FoB/Skywalks shall be provided in built-up areas/ near schools. DPR consultant to provide detailed drawings of FOB in schedule B.

Sr. No.	Location at km	FoB Type	Remarks
Nil			

7.7 A summary of Culverts, Bridges and Structures shall be as follows:

For Main Carriageway

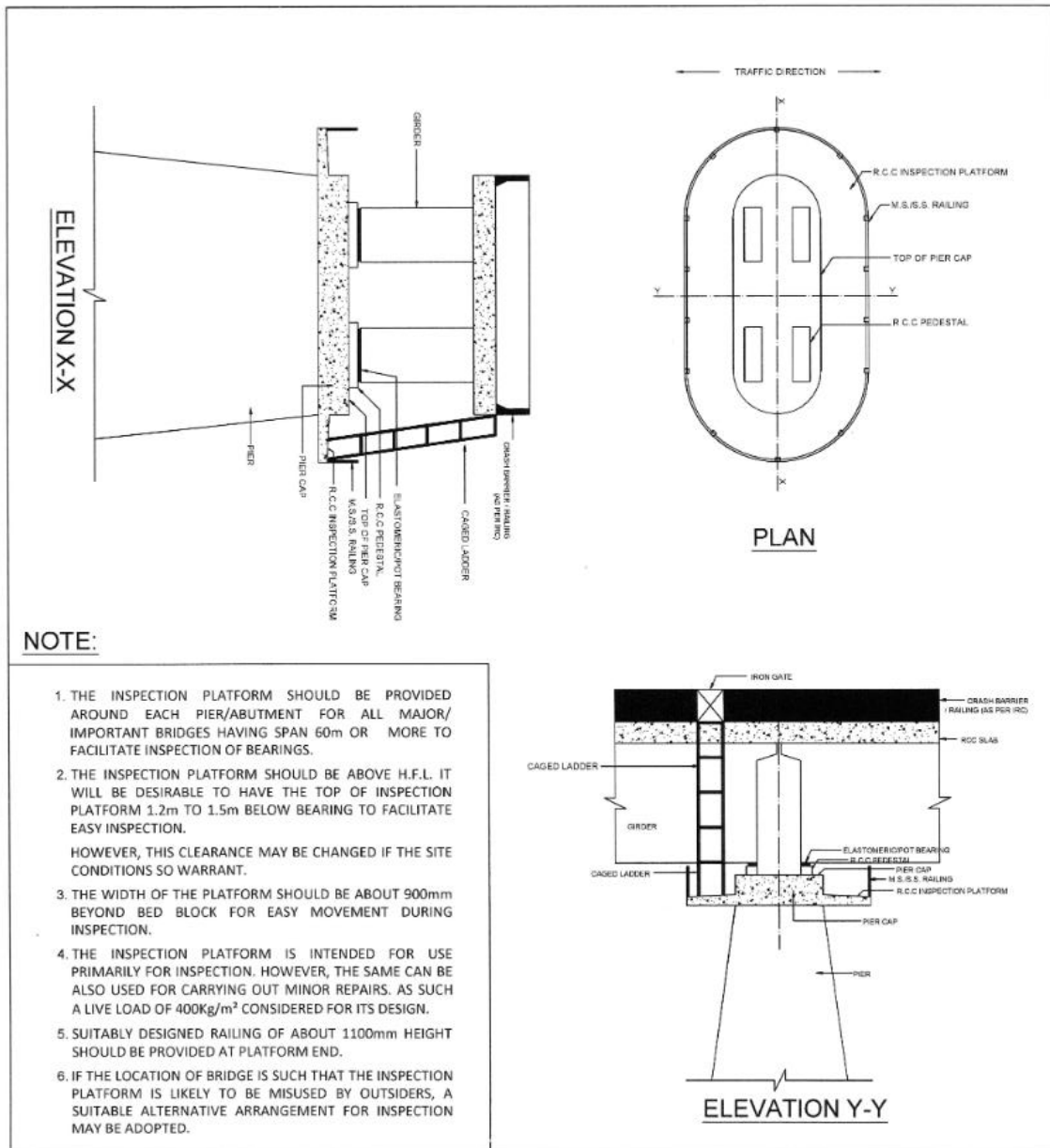
S. No.	Type of Structure	New Proposed
1	Major Bridge	1
2	Minor Bridge	20
3	Viaduct	11
4	Box Culvert	123
5	VOP	11
6	VUP	1
7	LVUP	0
8	SVUP	3
9	Utility underpass	1
10	Overpass	20
11	Underpass	5
Total		196

For Interchanges

S. No.	Type of Structure	New Proposed
1	Major Bridge	Nil
2	Minor Bridge	06
3	Viaduct	07
4	Box Culvert	17
5	VOP	04
6	VUP	03
7	LVUP	Nil
8	SVUP	Nil
9	Utility underpass	Nil
10	Overpass	02
11	Underpass	Nil
Total		39

Note:

- a. Foundation levels shall be decided after detailed Geo-Technical investigation & will be finalized after consultation with Independent Engineer/Authority for approval of work in field. If the founding level of foundation required is deeper than the founding level shown in GAD due to site & design requirement, the extra depth of foundation shall not be treated under the clause of Change of Scope.
- b. Span arrangement should be adopted as per requirement and decision by IWAI/Irrigation Authority/Other concerned Authority guidelines wherever required considering navigational requirement. Any change in span arrangement due to this will not constitute change of scope.
- c. All structures to be designed for Special Vehicle (SV) loading, Class 70R, Class A and congestion factors, whichever is critical, as per latest IRC provisions
- d. Project highway is proposed to be constructed to four lane configurations with provision for widening in future. As such, superstructure of all bridges, culverts and structures is to be designed for edge movement of the vehicle considering stitching of new superstructure in future due to widening for additional lane.



8 Traffic Control Devices and Road Safety Works

8.1 Traffic control devices and road safety works shall provide in accordance with Section 9 of the IRC: SP: 84.

8.2 Traffic Signs:

Traffic signs shall be provided as per IRC 67 as mentioned in Schedule-C.

8.3 Pavement Marking

Pavement markings shall be completed as per IRC 35 as mentioned in Schedule-C.

8.4 Safety Barrier

The safety barriers (Thrie beam) shall be provided at all locations in median and outer edge, loops ramps etc. as shown in TCS drawings.

9 Roadside Furniture

9.1 It shall be provided as per the details mentioned in Schedule-C.

10 Hazardous Locations

The safety barriers shall be provided at the following hazardous location such as ponds, well, electric sub-station, Electric tower, spilt carriageway, etc.

11 Special Requirements

As the project road passes through hilly/mountainous terrain and involves significant hill cutting, stability of cut slopes and hills along side the road is the essence of the contract for environment preservation, sustainability, and safety of all stake holders. Hence, the Concessionaire shall undertake detailed investigations and design of all cut/ fill slopes beyond 3m depth / height for safety & stability. Investigations shall inter-alia include fill soil, sub-soil/ rock strata for engineering properties, faults & fractures, geological studies. The stability of hills & the cut slopes are to be ensured with appropriate slope stabilization, erosion control and landslide correction measures in accordance with IRC: SP 48, IRC: 56 and manual for insuring safety & longevity of the slopes and the roads. The Concessionaire shall be responsible for precise assessment of the actual requirement & prepare design for slope protection & stabilization as per manual. Top down excavation, stable slopes with proper benches, and properly planned surface and sub-surface drainage arrangements shall be key part of the concessionaire's responsibility. The hill cutting should invariably be done in 1H:1V slope with a bench of 2m width with Catch Water Drain at a height of every of 6-7m. If the Concessionaire adopts a steeper cut slope, the same is to be substantiated with requisite soil investigations, design and the Slope Stabilisation Measures and will have to be done at the cost of the Concessionaire. Also, the Cut slopes should be designed in such a manner as to keep the toe line of cutting within available RoW and protection measures like rock bolting/ soil nailing/ reinforcing, as appropriate, shall be applied to ensure both stability and protection from erosion/ withering as per Engineering Guidelines on Landslide Mitigation Measures for Indian Roads IRC: SP-106. Concessionaire shall obtain approval/ no objection from the Independent Engineer and Authority before implementation of slope protection work in steeper cut slope . Moreover, adequate Catch Water Drains, Berm Drains, Cascade Drains, Road Side Drains, Culverts and other types of cross drainage structures as may be required as per site conditions for eventual safe release to stable natural streams is imperative. Ensuring sub-surface drainage through perforated pipe drains, gravel filters, weep holes, chimney drains etc at appropriate places and sufficient sizes and spacing shall also become part of the overall scope of slope protection/stabilization. Provision for Coir

blanket as part of the slope protection/erosion control measures is to be made for the exposed face of the cut in the entire project stretch. The Erosion Control measures shall be installed in accordance with the approved drawings, manufacturer's recommendations, and relevant specifications to ensure effective erosion control and stabilization of the slope surface. The Concessionaire shall ensure that the coir mats are properly anchored, overlapped, and tensioned to prevent displacement during rainfall or runoff. Necessary turfing, seeding, or plantation works, wherever required, shall be carried out immediately after laying the coir matting to achieve vegetation growth and long-term stability. Moreover, slope management with drainage maintenance would be essential part of the maintenance period of concessionaire. The Concessionaire shall obtain approval / No Objection Certificate from the Independent Engineer and the Authority prior to implementation of Slope Protection/Erosion control measures and maintain records of source, quality, and installation of coir blankets for verification.

Protection measures including sub-surface & surface drainage provisions for cut slope and valley slope should be designed on the basis of detailed geotechnical investigation bore holes at identified critical locations-such as deep cut/fill sections, bridge abutments, soft ground zones, landslide-prone areas, or zones with abrupt changes in soil conditions carried out at an interval of 500m or closer as along the project alignment to determine subsurface soil stratification and engineering properties of slope forming materials. This will facilitate accurate characterization of soil types and support the design of appropriate protection measures. In case of deep cut sections having height more than 5.0m, the depth of bore hole should be minimum to the depth of cutting above finished road level or 5.0m below competent stratum whichever is achieved earlier.

Concessionaire shall submit the updated inventory and condition map of each and every structures/ building (commercial/ non-commercial), private land, land use, access roads, revenue & forest land within '100m each side of the edge of the proposed right of way (PROW), Also video evidence with date & time stamped should be submitted.

Construction in Stages: - Construction should be done in stages. The initial period of about one year should be given for the cutting of hill slopes for the road and completion of protection works for stabilization of the slopes. The subsequent works shall be taken up for those sections only where the formation cutting and protection measures remain stable after one monsoon season.

Any increase in the length up to 10% of the provision 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 16. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%. Therefore, the Concessionaire should carry out thorough investigation at site and assess the requirement of slope protection and slide prone zone and other safety features at his own before submission of bid.

Disposal of Debris: - As per clause "13.13" of section 13 (Special Requirement for Hill Road) of IRC:SP-84:2019 specified in Schedule-D.

Approximate quantity of **5453409.28** cum of muck/debris is anticipated to be generated from roadway cutting and excavation works. The Concessionaire/Contractor shall identify suitable muck disposal locations in consultation with the local village authorities, District Administration and Forest Department, as applicable.

All statutory approvals, permissions, and No-Objection Certificates (NOCs) required for muck disposal shall be obtained by the Concessionaire/Contractor at his own cost, in addition to the clearances stipulated under Schedule-E of the Contract.

No muck disposal shall be permitted within Reserved Forest areas. Disposal of approximately **5453409.28** cum of muck/debris shall be carried out only at designated approved locations by providing suitable retaining structures of adequate height and properly design for stability, complete in all respects, as per MoRTH Specifications and directions of the Engineer, including all leads, lifts, labour, materials, equipment, and incidentals.

RCC Crash Barrier with Friction Slab

S. No.	Item	LHS		RHS		Total Length (m)	Location	Remarks
		Design Chainage (From)	Design Chainage (To)	Design Chainage (From)	Design Chainage (To)			
1	RCC Crash Barrier with Friction Slab for Main Carriageway	46+955	46+961	46+955	46+961	12	At the top of RE wall	At the top of RE wall (Structure length shall be deducted)
		46+969	47+040	46+969	47+040	142		
		49+160	49+214	49+160	49+214	108		
		49+226	49+340	49+226	49+340	228		
		51+060	51+096	51+060	51+096	72		
		51+104	51+140	51+104	51+140	72		
		54+625	55+024	54+625	55+024	798		
		55+036	55+080	55+036	55+080	88		
		56+560	56+616	56+560	56+616	112		
		56+624	56+720	56+624	56+720	192		
		57+264	57+320	57+264	57+320	112		

S. No.	Item	LHS		RHS		Total Length (m)	Location	Remarks
		Design Chainage (From)	Design Chainage (To)	Design Chainage (From)	Design Chainage (To)			
		66+940	67+000	66+940	67+000	120		
		67+010	67+040	67+010	67+040	60		
		67+550	67+560	67+550	67+560	20		
		67+740	67+760	67+740	67+760	40		
		70+600	70+650	70+600	70+650	100		
		70+687	70+740	70+687	70+740	106		
		72+220	72+312	72+220	72+312	184		
		72+320	72+360	72+320	72+360	80		
		73+740	73+780	73+740	73+780	80		
		73+790	73+820	73+790	73+820	60		
		76+600	76+654	76+600	76+654	108		
		76+666	76+676	76+666	76+676	20		
		76+684	76+700	76+684	76+700	32		
		77+420	77+560	77+420	77+560	280		
		77+700	77+730	77+700	77+730	60		
		78+220	78+236	78+220	78+236	32		
		78+244	78+280	78+244	78+280	72		
		Total Length (m)				3390		
2	RCC Crash Barrier with Friction Slab for Ramps and Loops	Interchange at Km 54+766				Nil	At the top of RE wall	At the top of RE wall (Structure length shall be deducted)
		Interchange at Km 64+970				1144		
		Interchange at Km 77+750				720		
		Total Length (m)				1864		

Retaining Wall/ Stone Pitching/Toe Wall/Breast Wall**RCC Retaining Wall- (For Main Carriageway)**

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
46+560	46+955	395	47+340	47+360	20
47+040	47+100	60	48+640	48+700	60
47+240	47+260	20	49+060	49+160	100
47+340	47+360	20	49+340	49+380	40
47+400	47+500	100	50+600	50+620	20
47+680	47+700	20	50+920	51+060	140
48+020	48+060	40	51+680	51+720	40
48+100	48+120	20	54+380	54+420	40
48+640	48+720	80	55+080	55+180	100
49+100	49+140	40	55+440	55+460	20
50+600	50+620	20	56+900	56+940	40

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
50+920	50+980	60	57+320	57+380	60
51+160	51+180	20	58+200	58+400	200
51+220	51+240	20	59+340	59+360	20
51+680	51+720	40	60+060	60+100	40
53+820	53+840	20	60+120	60+140	20
54+380	54+420	40	61+080	61+140	60
55+080	55+160	80	62+480	62+540	60
55+440	55+480	40	62+580	62+640	60
55+880	55+920	40	62+700	62+720	20
56+540	56+560	20	62+960	63+020	60
56+780	56+940	160	63+140	63+180	40
57+040	57+100	60	63+200	63+220	20
58+260	58+280	20	63+260	63+320	60
60+080	60+100	20	63+420	63+440	20
60+120	60+140	20	64+580	64+594	14
61+340	61+360	20	65+860	65+900	40
62+540	62+560	20	66+100	66+120	20
64+606	64+680	74	67+391	67+420	29
65+160	65+180	20	68+580	68+610	30
65+340	65+360	20	68+620	68+680	60
65+440	65+460	20	68+940	69+000	60
65+520	66+120	600	69+620	69+640	20
66+260	66+360	100	70+145	70+180	35
66+880	66+940	60	70+300	70+320	20
67+300	67+379	79	70+440	70+460	20
68+940	68+980	40	70+580	70+600	20
69+310	69+340	30	70+740	70+820	80
69+800	69+820	20	70+900	70+940	40
69+880	70+025	145	71+700	71+820	120
70+220	70+280	60	71+975	72+094	119
70+400	70+420	20	72+106	72+140	34
70+740	70+920	180	72+380	72+420	40
71+780	71+860	80	72+460	72+500	40
72+080	72+094	14	72+660	72+680	20
75+500	75+520	20	72+700	72+760	60
75+540	75+560	20	73+640	73+660	20
76+560	76+600	40	75+480	75+520	40
77+100	77+280	180	76+140	76+200	60
78+200	78+220	20	76+360	76+380	20
78+280	78+340	60	76+400	76+440	40
			77+180	77+300	120
			78+486	78+520	34

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
		3417			2615

RCC Retaining Wall- (For Interchanges)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
Interchange at km 54+760		1397	Interchange at km 54+760		1397
Interchange at km 64+970		260	Interchange at km 64+970		260
Interchange at km 77+750		476	Interchange at km 77+750		476
		2133			2133

Note:

RCC Retaining wall of suitable height (as per site requirement) shall be provided to accommodate the highway cross section within the available/proposed ROW and the same shall not constitute a Change of Scope. However, the concessionaire can propose the new innovative technology in consultation with Authority.

- The location of retaining wall along main carriageway shall be placed in such a way that lane addition could be done without recasting/reconstruction. The design and construction of partial RE wall/ retaining wall shall be done for full height considering future widening.
- In addition to above retaining wall mentioned above, cross wall shall be provided behind each abutment.
- In addition to above, RE wall/Retaining wall shall be provided at toll plaza and other locations to restrict the embankment slope within the right of way.
- “Guidelines to discontinue construction practices for gap slabs between abutments and RS walls; closing/back RS walls behind abutments; RS walls exceeding 10 m in height; RS wall panels in wing walls; and use of geo-composites behind RS walls, relating to construction of RS walls for flyovers/underpasses/ROBs/structures/viaducts.” Should be adopted as per NHA Policy Circular No. 18.111./2025 dated 21st October, 2025.
- The length specified hereinabove shall be treated as an approximate assessment and minimum. The actual lengths as required on the basis of detailed investigations shall be determined by the Concessionaire in accordance with the Specifications and Standards. Any increase in the lengths specified in this Schedule-B up to 10% of 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 16. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%.

Breast wall (For Main Carriageway) (of appropriate type)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
45+645	45+960	315	45+645	46+440	795
45+980	46+420	440	46+560	46+580	20
47+120	47+240	120	46+640	46+840	200
47+280	47+320	40	47+040	47+080	40
47+500	47+660	160	47+100	47+320	220
47+740	47+940	200	47+400	47+660	260
48+240	48+260	20	47+700	47+900	200
48+820	49+020	200	48+060	48+080	20
49+380	50+000	620	48+120	48+274	154
50+200	50+520	320	48+880	49+040	160
50+620	50+860	240	49+380	50+040	660
51+240	51+360	120	50+200	50+440	240
51+780	51+800	20	50+640	50+880	240
51+860	52+220	360	51+140	51+380	240
52+380	52+420	40	51+860	52+280	420
52+520	52+680	160	52+520	52+760	240
52+960	53+220	260	53+000	53+280	280
53+740	53+780	40	53+700	53+800	100
53+880	53+900	20	54+000	54+260	260
54+040	54+100	60	54+500	54+625	125
54+160	54+200	40	55+640	55+820	180
54+480	54+540	60	56+120	56+260	140
54+560	54+625	65	56+300	56+500	200
55+360	55+420	60	56+740	56+820	80
55+660	55+720	60	57+480	57+520	40
56+100	56+260	160	57+600	57+640	40
56+320	56+520	200	57+740	57+880	140
57+180	57+256	76	58+860	58+920	60
57+440	57+540	100	59+040	59+220	180
57+600	57+660	60	59+500	59+620	120
57+720	57+860	140	59+680	59+740	60
57+940	58+000	60	59+800	59+940	140
58+300	58+400	100	60+180	60+280	100
59+340	59+700	360	60+960	61+000	40
59+780	60+000	220	61+400	61+660	260
60+880	61+020	140	61+680	62+240	560
61+420	61+620	200	62+860	62+920	60
61+680	62+180	500	63+040	63+060	20
62+360	62+460	100	63+360	63+400	40
62+580	62+680	100	63+460	63+600	140
62+900	63+060	160	63+700	63+920	220

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
63+200	63+220	20	64+180	64+220	40
63+380	63+420	40	64+240	64+320	80
63+460	63+560	100	64+340	64+500	160
63+680	63+900	220	64+640	65+060	420
64+240	64+320	80	65+220	65+260	40
64+340	64+520	180	65+300	65+340	40
64+700	64+740	40	65+360	65+420	60
64+780	65+100	320	65+480	65+500	20
66+380	66+760	380	65+620	65+680	60
67+040	67+280	240	65+700	65+840	140
67+420	67+500	80	65+960	65+980	20
67+560	67+680	120	66+380	66+760	380
67+760	68+020	260	66+840	66+860	20
68+060	68+140	80	66+900	66+940	40
68+220	68+440	220	67+060	67+280	220
68+480	68+540	60	67+420	67+520	100
68+560	68+580	20	67+580	67+700	120
68+640	68+900	260	67+760	68+020	260
69+340	69+580	240	68+080	68+160	80
69+620	69+700	80	68+300	68+500	200
69+740	69+780	40	68+520	68+540	20
69+820	69+860	40	68+700	68+920	220
70+145	70+200	55	69+340	69+400	60
70+300	70+380	80	69+480	69+600	120
70+440	70+560	120	69+640	69+880	240
71+000	71+180	180	69+920	70+000	80
71+220	71+380	160	70+180	70+280	100
71+420	71+520	100	70+340	70+420	80
71+540	71+640	100	70+480	70+540	60
71+700	71+740	40	70+980	71+300	320
71+880	71+920	40	71+440	71+500	60
72+900	72+940	40	71+900	71+920	20
73+580	73+620	40	74+080	74+280	200
74+040	74+400	360	74+300	74+340	40
74+440	74+640	200	74+360	74+400	40
74+660	74+820	160	74+460	74+640	180
74+880	75+000	120	74+740	74+980	240
75+060	75+300	240	75+060	75+180	120
75+360	75+440	80	75+240	75+400	160
75+580	75+700	120	75+580	75+700	120
75+720	75+760	40	75+720	75+760	40
75+780	75+880	100	75+780	75+905	125

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
75+980	76+040	60	75+960	76+040	80
76+080	76+100	20	76+080	76+100	20
76+200	76+400	200	76+220	76+320	100
76+440	76+540	100	76+500	76+540	40
76+700	77+060	360	76+700	77+100	400
77+300	77+340	40	77+300	77+340	40
77+760	77+820	60	77+360	77+400	40
77+860	78+160	300	77+760	78+140	380
			78+180	78+200	20
			78+340	78+360	20
			78+400	78+420	20
		13351			13999

Breast wall (For Interchanges)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
Interchange at km 54+760		1877	Interchange at km 54+760		1877
Interchange at km 64+970		1501	Interchange at km 64+970		1501
Interchange at km 77+750		2300	Interchange at km 77+750		2300
		5678			5678

Note: Breast wall of suitable height (as per site requirement) shall be provided to accommodate the highway cross section within the available/proposed ROW. Above length of the Breast wall is minimum specified. The actual length shall be determined by the Concessionaire in accordance with the approved plan & profile and design approved from the Independent Engineer. Any increase in length upto 10% from the length specified in this Clause of Schedule-B shall not constitute a Change of Scope. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%.

and the same upto an increase of 10% of the proposed scope shall not constitute a Change of Scope.

Stone Pitching for Main Carriageway

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
46+560	46+580	20	47+320	47+360	40
46+600	46+955	355	47+680	47+700	20
47+040	47+100	60	48+000	48+060	60
47+240	47+260	20	48+100	48+120	20

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
47+340	47+500	160	48+640	48+720	80
47+660	47+680	20	49+040	49+060	20
47+700	47+740	40	49+100	49+140	40
47+980	48+020	40	50+100	50+120	20
48+120	48+140	20	50+140	50+160	20
48+640	48+700	60	50+572	50+620	48
48+720	48+740	20	50+920	50+980	60
49+060	49+160	100	51+420	51+450	30
49+340	49+360	20	51+490	51+580	90
50+572	50+620	48	51+620	51+720	100
50+900	51+060	160	51+740	51+780	40
51+140	51+180	40	52+300	52+360	60
51+420	51+450	30	52+440	52+480	40
51+490	51+520	30	52+800	52+860	60
51+580	51+640	60	52+920	52+980	60
51+660	51+720	60	53+340	53+450	110
52+300	52+320	20	53+475	53+540	65
52+340	52+360	20	53+820	53+840	20
52+880	52+920	40	54+280	54+320	40
53+340	53+450	110	54+380	54+420	40
53+475	53+560	85	55+080	55+160	80
53+800	53+820	20	55+180	55+300	120
53+840	53+860	20	55+440	55+480	40
54+240	54+420	180	55+860	55+920	60
55+080	55+280	200	56+010	56+080	70
55+440	55+460	20	56+520	56+560	40
55+500	55+540	40	56+900	56+975	75
55+580	55+640	60	57+000	57+040	40
55+860	55+880	20	57+380	57+400	20
55+980	56+000	20	58+020	58+200	180
56+010	56+060	50	58+260	58+280	20
56+720	56+780	60	58+300	58+680	380
56+900	56+975	75	58+700	58+860	160
57+000	57+040	40	58+960	58+980	20

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
57+100	57+120	20	59+260	59+360	100
57+340	57+400	60	59+640	59+660	20
58+140	58+300	160	59+740	59+780	40
58+520	58+680	160	60+040	60+060	20
58+700	58+880	180	60+080	60+100	20
58+960	59+320	360	60+120	60+160	40
59+720	59+740	20	60+320	60+340	20
60+060	60+200	140	60+420	60+435	15
60+320	60+435	115	60+445	60+480	35
60+840	60+860	20	60+500	60+520	20
61+040	61+200	160	60+540	60+580	40
61+215	61+300	85	60+660	60+700	40
61+310	61+340	30	60+860	60+920	60
61+360	61+400	40	61+060	61+080	20
62+480	62+560	80	61+140	61+200	60
62+700	62+760	60	61+215	61+300	85
62+820	62+840	20	61+310	61+380	70
63+100	63+180	80	62+360	62+400	40
63+260	63+280	20	62+580	62+660	80
63+300	63+340	40	62+720	62+740	20
63+420	63+440	20	62+760	62+800	40
64+060	64+100	40	62+940	63+020	80
64+140	64+180	40	63+120	63+140	20
64+580	64+594	14	63+180	63+220	40
64+640	64+700	60	63+280	63+300	20
65+120	65+160	40	63+320	63+340	20
65+180	65+220	40	63+620	63+680	60
65+260	65+280	20	64+606	64+640	34
65+400	65+440	40	65+160	65+200	40
65+480	65+520	40	65+340	65+360	20
65+620	65+680	60	65+440	65+460	20
65+700	65+900	200	65+520	65+620	100
65+960	65+980	20	65+680	65+700	20
66+020	66+040	20	65+860	65+960	100

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
66+100	66+180	80	65+980	66+020	40
66+200	66+260	60	66+040	66+180	140
66+280	66+300	20	66+200	66+280	80
66+360	66+380	20	66+300	66+380	80
66+880	66+940	60	66+760	66+780	20
67+391	67+420	29	67+300	67+379	79
68+160	68+220	60	68+060	68+080	20
68+620	68+640	20	68+180	68+260	80
68+920	68+980	60	68+560	68+610	50
69+310	69+340	30	68+640	68+680	40
69+600	69+620	20	68+940	69+000	60
69+800	69+820	20	69+620	69+640	20
69+880	69+900	20	69+900	69+920	20
69+920	70+000	80	70+000	70+025	25
70+220	70+300	80	70+145	70+180	35
70+400	70+420	20	70+300	70+320	20
70+580	70+600	20	70+440	70+460	20
70+740	70+880	140	70+740	70+860	120
70+900	70+980	80	70+880	70+920	40
71+740	71+820	80	71+660	71+680	20
71+840	71+860	20	71+700	71+740	40
71+975	72+094	119	71+780	71+840	60
72+106	72+140	34	71+860	71+880	20
72+440	72+500	60	72+080	72+094	14
72+660	72+680	20	72+140	72+160	20
72+700	72+760	60	72+380	72+420	40
73+100	73+120	20	72+440	72+460	20
73+200	73+234	34	72+540	72+580	40
73+246	73+280	34	72+620	72+660	40
73+300	73+380	80	72+680	72+700	20
73+640	73+660	20	72+760	72+780	20
73+960	73+994	34	72+800	72+840	40
74+006	74+040	34	73+200	73+234	34
75+020	75+040	20	73+246	73+280	34

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
75+480	75+520	40	73+300	73+380	80
75+560	75+580	20	73+400	73+420	20
76+140	76+180	40	73+500	73+540	40
76+400	76+420	20	73+920	73+960	40
76+560	76+580	20	73+980	73+994	14
77+100	77+120	20	74+060	74+080	20
77+180	77+300	120	75+000	75+060	60
78+180	78+220	40	75+460	75+480	20
78+280	78+300	20	75+500	75+580	80
78+320	78+340	20	75+940	75+960	20
78+360	78+400	40	76+060	76+080	20
78+440	78+474	34	76+180	76+200	20
78+486	78+520	34	76+360	76+380	20
			76+420	76+440	20
			76+580	76+600	20
			77+120	77+280	160
		7003			6052

Stone Pitching for Interchanges

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
Interchange at km 54+760		1397	Interchange at km 54+760		1397
Interchange at km 64+970		260	Interchange at km 64+970		260
Interchange at km 77+750		476	Interchange at km 77+750		476
		2133			2133

Note: Above length of the Stone Pitching is minimum specified. The actual length shall be determined by the Concessionaire in accordance with the approved plan & profile and design approved from the Independent Engineer. Any increase in length upto 10% from the length specified in this Clause of Schedule-B shall not constitute a Change of Scope. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%. *and the same upto an increase of 10% of the proposed scope shall not constitute a Change of Scope.*

RCC Toe Wall

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
47+360	47+400	40	47+320	47+340	20
47+660	47+680	20	47+680	47+700	20
47+700	47+740	40	48+000	48+060	60
47+980	48+020	40	48+100	48+120	20
48+120	48+140	20	48+700	48+720	20
48+720	48+740	20	49+040	49+060	20
49+060	49+100	40	50+100	50+120	20
49+140	49+160	20	50+140	50+160	20
49+340	49+360	20	50+572	50+600	28
50+572	50+600	28	50+920	50+980	60
50+900	51+060	160	51+420	51+450	30
51+140	51+160	20	51+490	51+580	90
51+420	51+450	30	51+620	51+680	60
51+490	51+520	30	51+740	51+780	40
51+580	51+640	60	52+300	52+360	60
51+660	51+680	20	52+440	52+480	40
52+300	52+320	20	52+800	52+860	60
52+340	52+360	20	52+920	52+980	60
52+880	52+920	40	53+340	53+450	110
53+340	53+450	110	53+475	53+540	65
53+475	53+560	85	53+820	53+840	20
53+800	53+820	20	54+280	54+320	40
53+840	53+860	20	55+180	55+300	120
54+240	54+380	140	55+460	55+480	20
55+160	55+280	120	55+860	55+920	60
55+500	55+540	40	56+010	56+080	70
55+580	55+640	60	56+520	56+540	20
55+860	55+880	20	56+840	56+900	60
55+980	56+000	20	56+940	56+975	35
56+010	56+060	50	57+000	57+100	100
56+720	56+780	60	57+380	57+400	20
56+940	56+975	35	58+020	58+200	180
57+000	57+040	40	58+400	58+680	280
57+100	57+120	20	58+700	58+860	160
57+380	57+400	20	58+960	58+980	20
58+140	58+260	120	59+260	59+340	80
58+280	58+300	20	59+640	59+660	20
58+520	58+680	160	59+740	59+780	40
58+700	58+880	180	60+040	60+060	20
58+960	59+320	360	60+140	60+160	20
59+720	59+740	20	60+320	60+340	20
60+060	60+080	20	60+420	60+435	15

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
60+100	60+120	20	60+445	60+480	35
60+140	60+200	60	60+500	60+520	20
60+320	60+435	115	60+540	60+580	40
60+840	60+860	20	60+660	60+700	40
61+040	61+200	160	60+860	60+920	60
61+215	61+300	85	61+060	61+080	20
61+310	61+340	30	61+140	61+200	60
61+360	61+400	40	61+215	61+300	85
62+480	62+540	60	61+310	61+380	70
62+700	62+760	60	62+360	62+400	40
62+820	62+840	20	62+640	62+660	20
63+100	63+180	80	62+720	62+740	20
63+260	63+280	20	62+760	62+800	40
63+300	63+340	40	62+940	62+960	20
63+420	63+440	20	63+120	63+140	20
64+060	64+100	40	63+180	63+200	20
64+140	64+180	40	63+320	63+340	20
64+580	64+594	14	63+620	63+680	60
64+680	64+700	20	64+606	64+640	34
65+120	65+160	40	65+160	65+200	40
65+180	65+220	40	65+340	65+360	20
65+260	65+280	20	65+440	65+460	20
65+400	65+440	40	65+520	65+620	100
65+480	65+520	40	65+680	65+700	20
65+960	65+980	20	65+900	65+960	60
66+120	66+180	60	65+980	66+020	40
66+200	66+260	60	66+040	66+100	60
66+360	66+380	20	66+120	66+180	60
67+391	67+420	29	66+200	66+280	80
68+160	68+220	60	66+300	66+380	80
68+620	68+640	20	66+760	66+780	20
68+920	68+940	20	67+300	67+379	79
69+600	69+620	20	68+060	68+080	20
70+260	70+300	40	68+180	68+260	80
70+740	70+820	80	68+560	68+580	20
70+920	70+980	60	69+900	69+920	20
71+740	71+780	40	70+000	70+025	25
71+975	72+080	105	70+740	70+820	80
72+106	72+140	34	70+880	70+900	20
72+440	72+500	60	71+660	71+680	20
72+660	72+680	20	71+820	71+840	20
72+700	72+760	60	71+860	71+880	20
73+100	73+120	20	72+140	72+160	20
73+200	73+234	34	72+440	72+460	20

Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

<u>Left Side</u>			<u>Right Side</u>		
Design Chainage (From)	Design Chainage (To)	Length (m)	Design Chainage (From)	Design Chainage (To)	Length (m)
73+246	73+280	34	72+540	72+580	40
73+300	73+380	80	72+620	72+660	40
73+640	73+660	20	72+680	72+700	20
73+960	73+994	34	72+760	72+780	20
74+006	74+040	34	72+800	72+840	40
75+020	75+040	20	73+200	73+234	34
75+480	75+500	20	73+246	73+280	34
75+560	75+580	20	73300	73380	80
76+140	76+180	40	73400	73420	20
76+400	76+420	20	73500	73540	40
77+280	77+300	20	73920	73960	40
78+180	78+200	20	73980	73994	14
78+360	78+400	40	74060	74080	20
78+440	78+474	34	75000	75060	60
78+486	78+520	34	75460	75480	20
			75520	75580	60
			75940	75960	20
			76060	76080	20
			76580	76600	20
			77120	77180	60
			78300	78320	20
		4884			4813

Note:

RCC Toe wall of suitable height (as per site requirement) shall be provided to accommodate the highway cross section within the available/proposed ROW and the same shall not constitute a Change of Scope.

- The location of RCC Toe wall along main carriageway shall be placed in such a way that lane addition could be done without recasting/reconstruction.
- In addition to above, RCC Toe wall shall be provided at toll plaza and other locations to restrict the embankment slope within the right of way.
- The length of Toe Wall specified hereinabove shall be treated as an approximate assessment and minimum. The actual lengths as required on the basis of detailed investigations shall be determined by the Concessionaire in accordance with the Specifications and Standards. Any increase in the lengths upto 10% specified in this Schedule-B 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 16.

Rat Hole Mining Areas

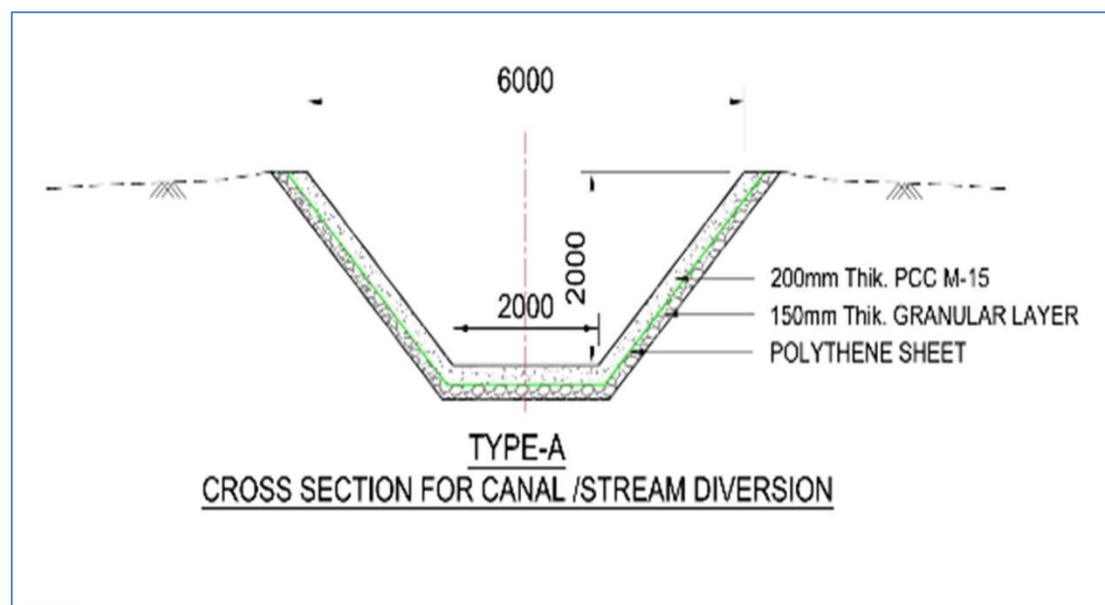
Rat-hole mining activities have been observed within and in proximity to the Right of Way (ROW) from Km 74+300 to Km 78+600 (End of Package-2). The Concessionaire shall carry out detailed Geotechnical and Geophysical investigations at all such identified locations to assess the extent, depth, stability, and potential impact of these mining voids on the proposed highway works.

Based on the outcomes of the investigations, the Concessionaire shall:

1. Evaluate the risk posed by the mining activities to pavement performance, embankment stability, drainage structures, and overall safety of the highway.
2. Prepare and submit a mitigation plan including suitable engineering solutions such as ground improvement, void treatment/grouting, stabilization measures, or any other required corrective action.
3. Ensure that all corrective measures, duly reviewed and approved by the Independent Engineer and the Authority, shall be executed entirely under the Scope of the Concessionaire.

Diversion of Nallah

Diversion of Nallah shall be constructed as per site requirement.



Note:

The actual cross-section of canal/ stream to be shifted and extent of such shifting (length) shall be determined by the Concessionaire as per the site/ design requirement with approval of concerned State Department/authority / Independent Engineer.

12 Open Well within RoW

The Open well shall be identified, and appropriate treatment shall be provided.

Sr. No.	Design Chainage	Well Dimension	Well Depth	Filling Material for Well	Slab on Top of Well Yes/No	Remarks
			Nil			

13 Shifting of Utilities

The Concessionaire shall undertake the work of shifting of Utilities (including electrical lines, water pipes, gas pipe lines and telephone cables) indicated in clause no 19 and 20 of Annexure –I Schedule -A to an appropriate location or alignment, in accordance with the provisions of Concession Agreement.

Note:

1. 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 Concessionaire 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 Concessionaire 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 Concessionaire to Utility Owning Department whenever asked by the Concessionaire. The decision/ approval of Utility Owning Department shall be binding on the Concessionaire.
2. 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 Concessionaire furnishes demand of Utility Owning Department along with a copy of estimated cost given by the later.
3. The dismantled material/scrap of existing Utility to be shifted/ dismantled shall belong to the Concessionaire who would be free to dispose-off the dismantled material as deemed fit by them, unless the Concessionaire is required to deposit the dismantled material to Utility Owning Department as per the norm and practice. In that case, the amount of credit for dismantled material may be availed by the Concessionaire as per estimate agreed between them.
4. The utilities shall be handed over after shifting work is complete 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.
5. Existing lights, junction boxes, connection to individual properties along the affected section shall be disconnected and reconnected as part of utility relocation and the same shall be in the scope of the Concessionaire.
6. The requisite Land for relocation/shifting of Utilities and Shutdown Charges wherever applicable shall be borne by the Authority.

Note II: It is obligation of successful bidder to keep all public utilities functional all time without any cost to Authority beyond quoted amount. Copy of Utility

shifting/relocation plans enclosed as Annex-III to Schedule-A.

14 Work Zone Traffic Management Plans: Annexure-II schedule B-type cross sections

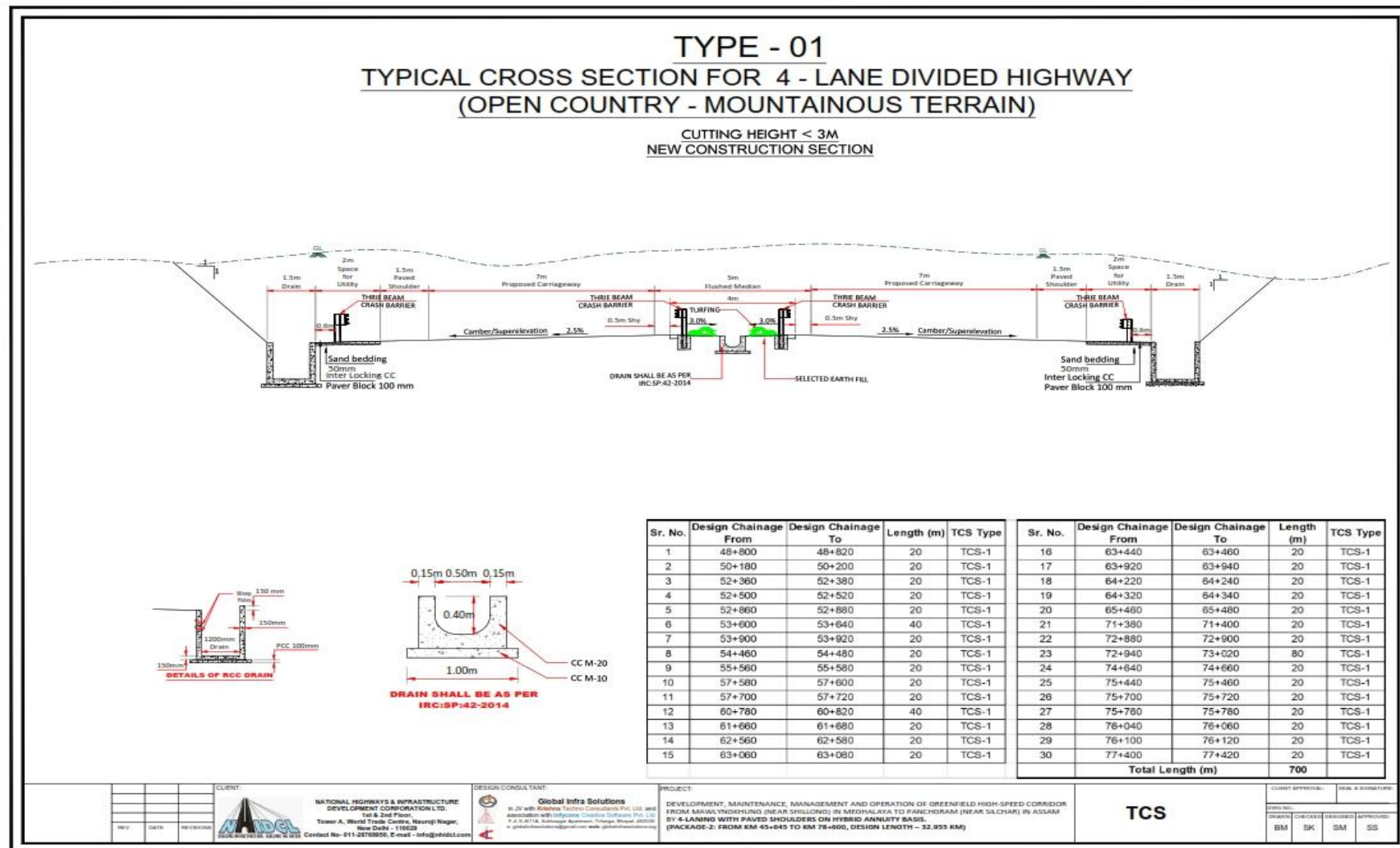
The traffic diversion plans shall be prepared as per IRC SP 55 for smooth flow of traffic and safety. A diversion plan shall be proposed for construction of Culvert, Grade Separated Structures, Bridges, RoB/RUB, etc. and traffic management plan for widening/reconstruction of carriageway.

Sr. No.	Design Chainage (Km)	Construction Activity	Divers ion	Traffic Manage ment Plan	Barrica ding Type III/IV/CC Barrier with Lightin g along barrier	Deployment of Flagman in Habitation/Sc hools/ Hospital, etc.	Rema rks
1	46+965	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
2	48+790	Overpass	Yes	As per IRC SP 55	Type -IV	Flagman	
3	49+735	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
4	50+200	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
5	51+100	Underpass	Yes	As per IRC SP 55	Type-IV	Flagman	
6	51+825	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
7	51+890	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
8	52+600	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
9	53+020	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
10	53+765	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
11	54+060	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
12	54+560	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
13	55+360	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	

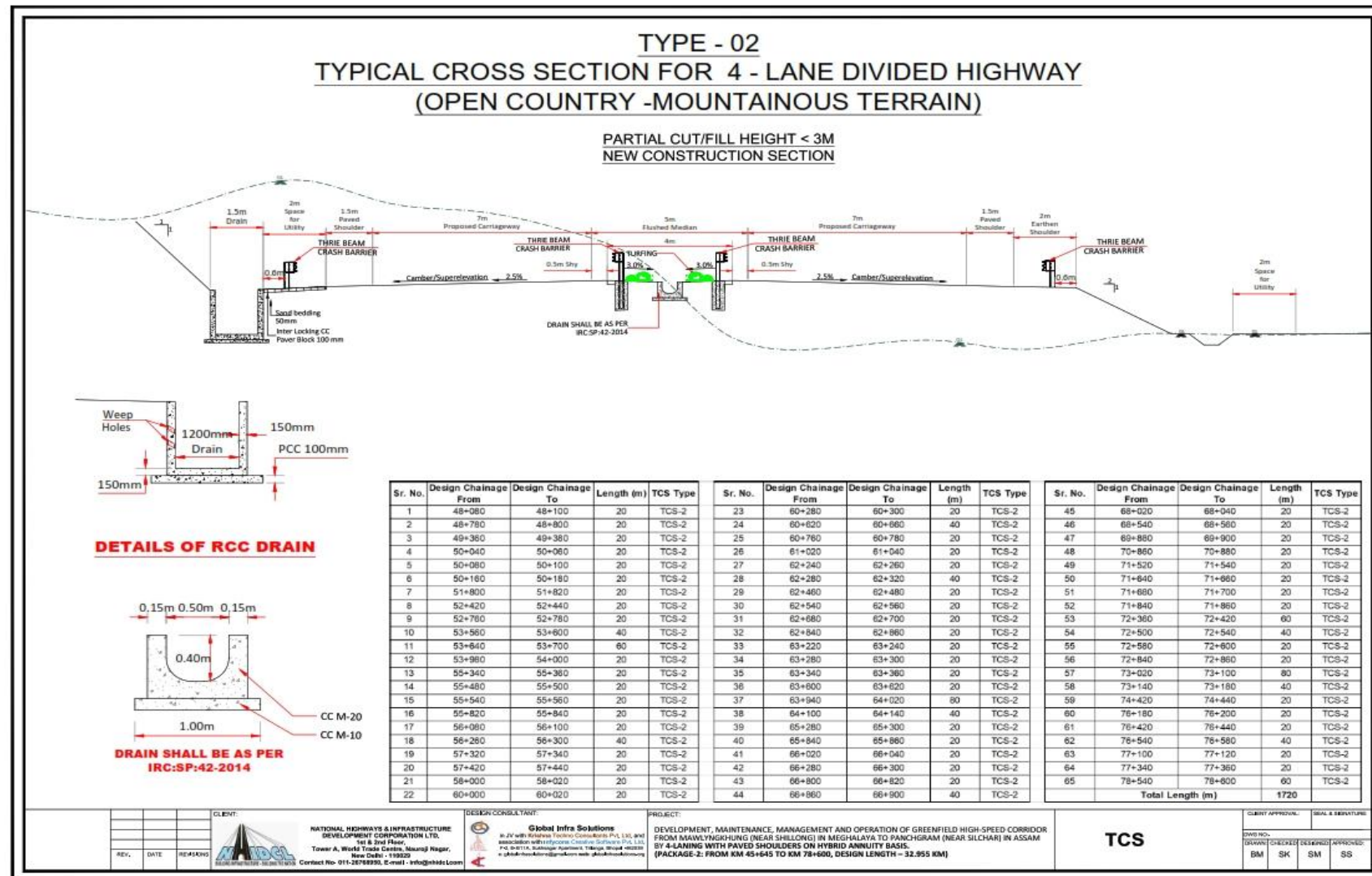
Sr. No.	Design Chainage (Km)	Construction Activity	Divers ion	Traffic Management Plan	Barrica ding Type III/IV/CC Barrier with Lightin g along barrier	Deployment of Flagman in Habitation/Sc hools/ Hospital, etc.	Rema rks
14	56+160	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
15	56+620	Underpass	Yes	As per IRC SP 55	Type-IV	Flagman	
16	57+260	Underpass	Yes	As per IRC SP 55	Type-IV	Flagman	
17	57+800	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
18	59+595	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
19	59+930	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
20	62+003	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
21	62+890	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
22	63+725	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
23	64+295	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
24	66+585	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
25	67+460	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
26	67+937	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
27	70+670	VUP	Yes	As per IRC SP 55	Type-IV	Flagman	
28	71+240	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
29	72+315	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	

Sr. No.	Design Chainage (Km)	Construction Activity	Divers ion	Traffic Manage ment Plan	Barrica ding Type III/IV/CC Barrier with Lightin g along barrier	Deployment of Flagman in Habitation/Sc hools/ Hospital, etc.	Rema rks
30	72+900	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
31	73+785	Underpass	Yes	As per IRC SP 55	Type-IV	Flagman	
32	74+445	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
33	74+810	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
34	75+835	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
35	76+260	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
36	76+680	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
37	76+770	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
38	76+960	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
39	77+380	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
40	78+240	Underpass	Yes	As per IRC SP 55	Type-IV	Flagman	

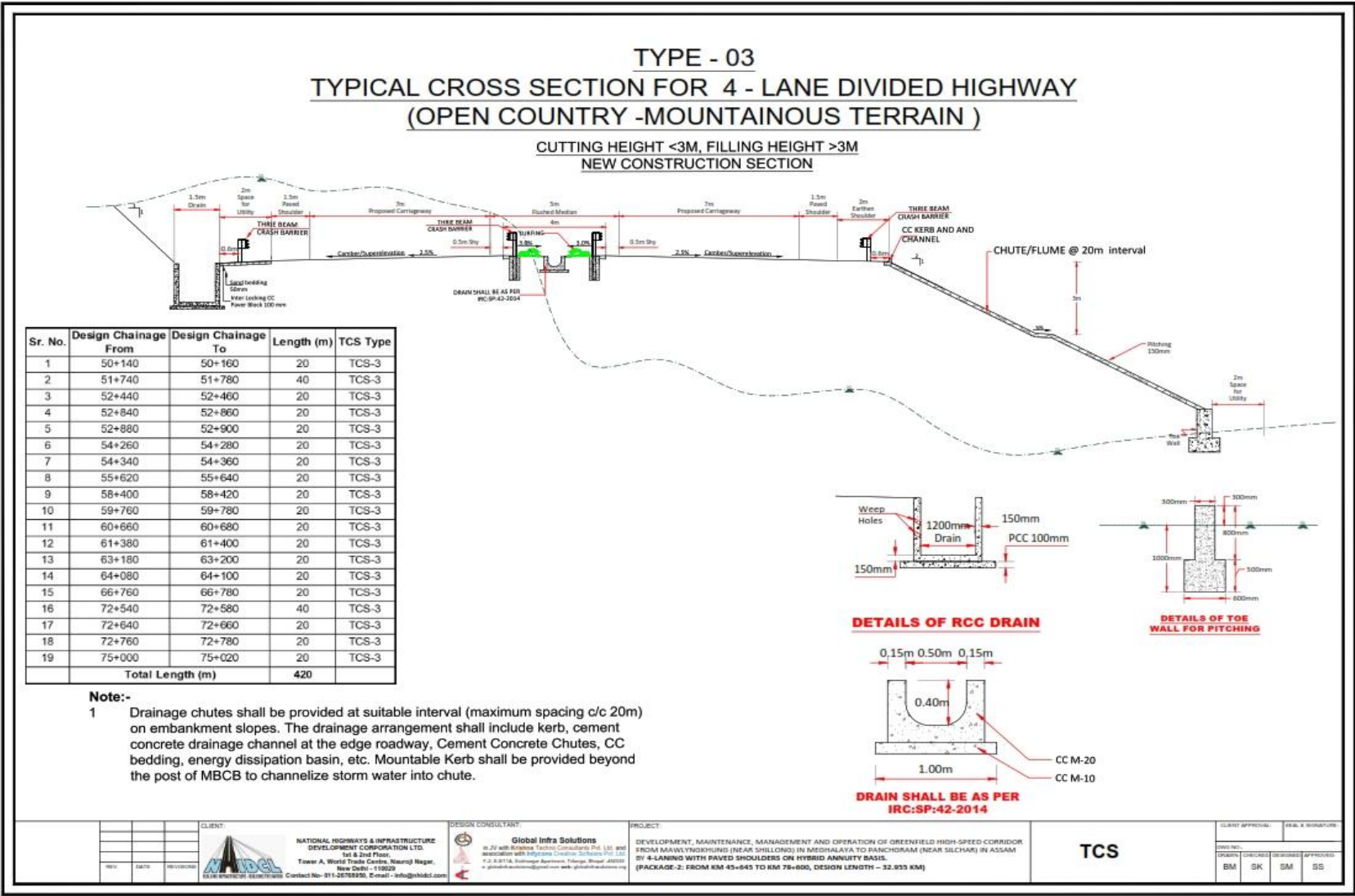
ANNEX – II (SCHEDULE – B) - TYPICAL CROSS SECTION



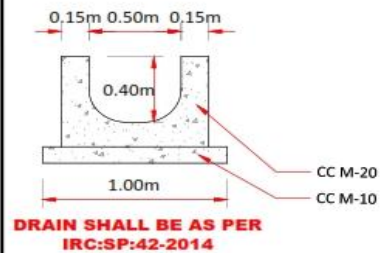
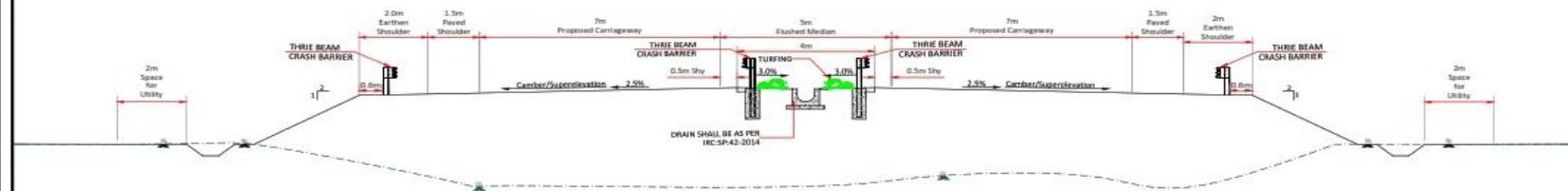
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)



Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)



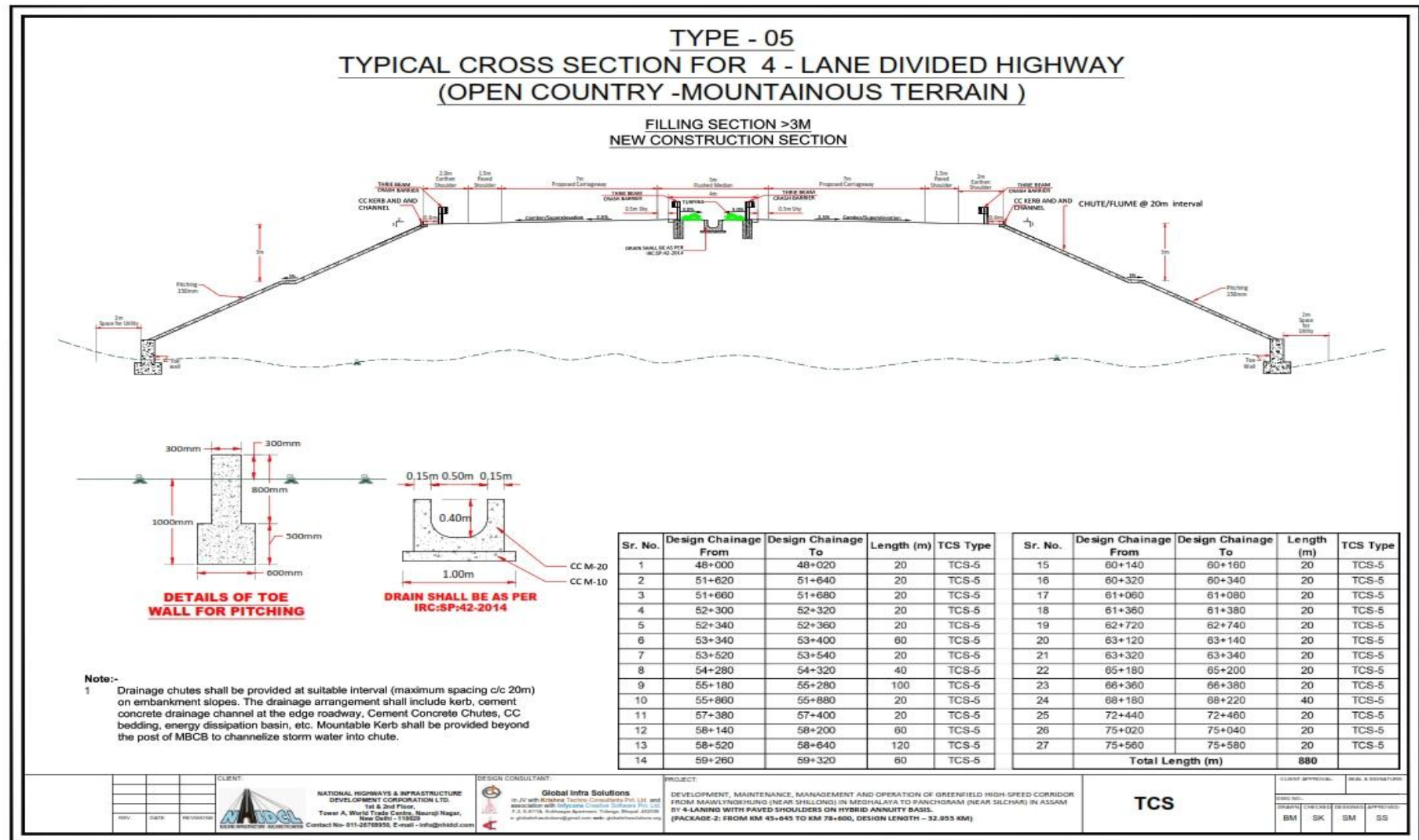
FILLING SECTION <3M
NEW CONSTRUCTION SECTION



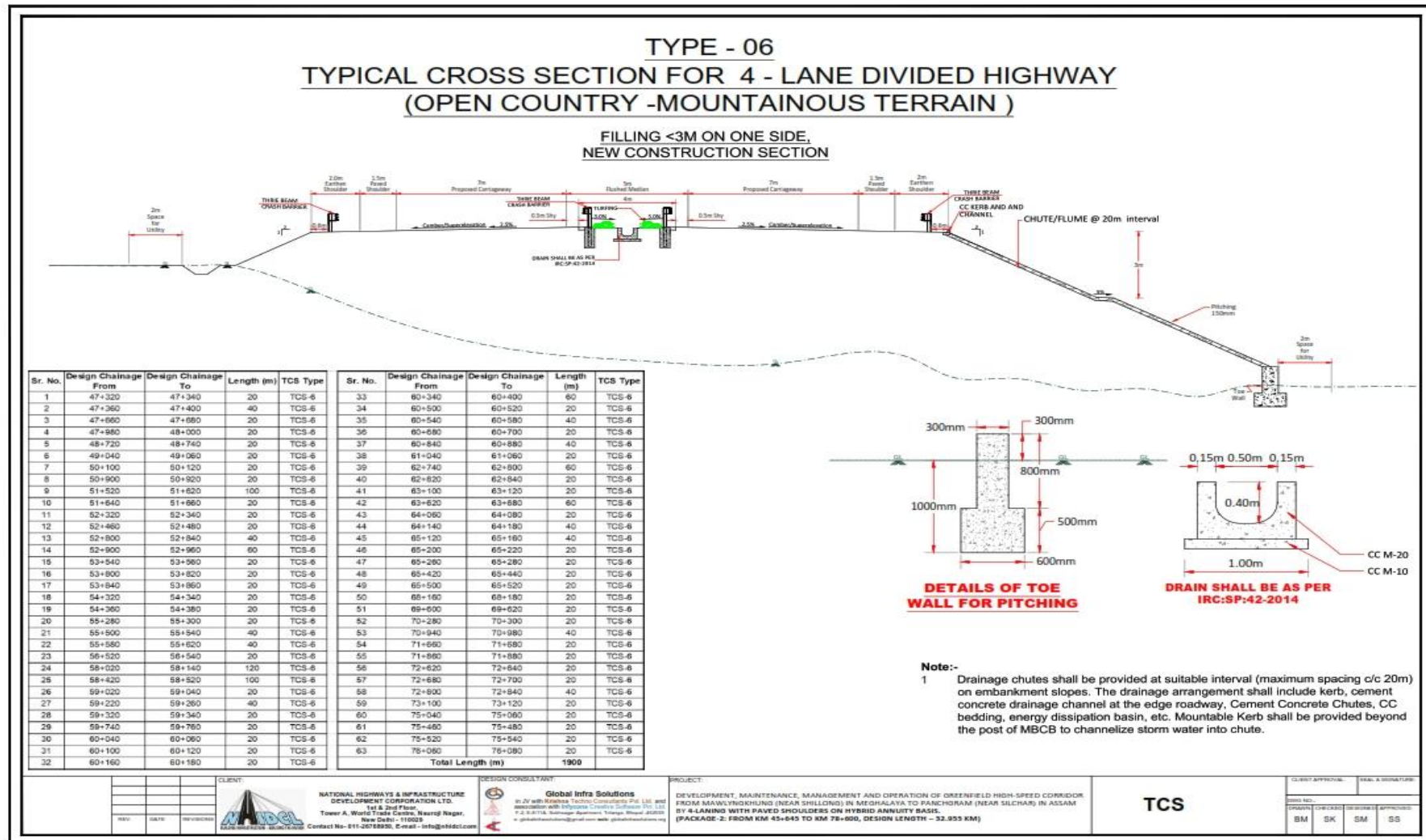
Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type
1	47+940	47+980	40	TCS-4	26	60+700	60+760	60	TCS-4
2	48+740	48+780	40	TCS-4	27	60+820	60+840	20	TCS-4
3	50+060	50+080	20	TCS-4	28	62+260	62+280	20	TCS-4
4	50+120	50+140	20	TCS-4	29	62+320	62+360	40	TCS-4
5	50+860	50+900	20	TCS-4	30	62+800	62+820	20	TCS-4
6	51+720	51+740	20	TCS-4	31	63+080	63+100	20	TCS-4
7	51+820	51+860	40	TCS-4	32	63+240	63+260	20	TCS-4
8	52+280	52+300	20	TCS-4	33	64+020	64+060	40	TCS-4
9	52+480	52+500	20	TCS-4	34	65+100	65+120	20	TCS-4
10	52+780	52+800	20	TCS-4	35	66+780	66+800	20	TCS-4
11	53+280	53+340	60	TCS-4	36	66+820	66+840	20	TCS-4
12	53+860	53+880	20	TCS-4	37	68+040	68+060	20	TCS-4
13	53+920	53+980	60	TCS-4	38	70+420	70+440	20	TCS-4
14	54+420	54+460	40	TCS-4	39	70+560	70+580	20	TCS-4
15	55+300	55+340	40	TCS-4	40	71+400	71+420	20	TCS-4
16	55+420	55+440	20	TCS-4	41	72+420	72+440	20	TCS-4
17	55+840	55+860	20	TCS-4	42	72+600	72+620	20	TCS-4
18	57+400	57+420	20	TCS-4	43	72+760	72+800	20	TCS-4
19	57+540	57+580	40	TCS-4	44	72+860	72+880	20	TCS-4
20	57+660	57+700	40	TCS-4	45	73+120	73+140	20	TCS-4
21	57+880	57+940	60	TCS-4	46	73+180	73+200	20	TCS-4
22	60+020	60+040	20	TCS-4	47	74+400	74+420	20	TCS-4
23	60+300	60+320	20	TCS-4	48	76+120	76+140	20	TCS-4
24	60+520	60+540	20	TCS-4	49	78+520	78+540	20	TCS-4
25	60+580	60+620	40	TCS-4	Total Length (m)			1340	

TCS

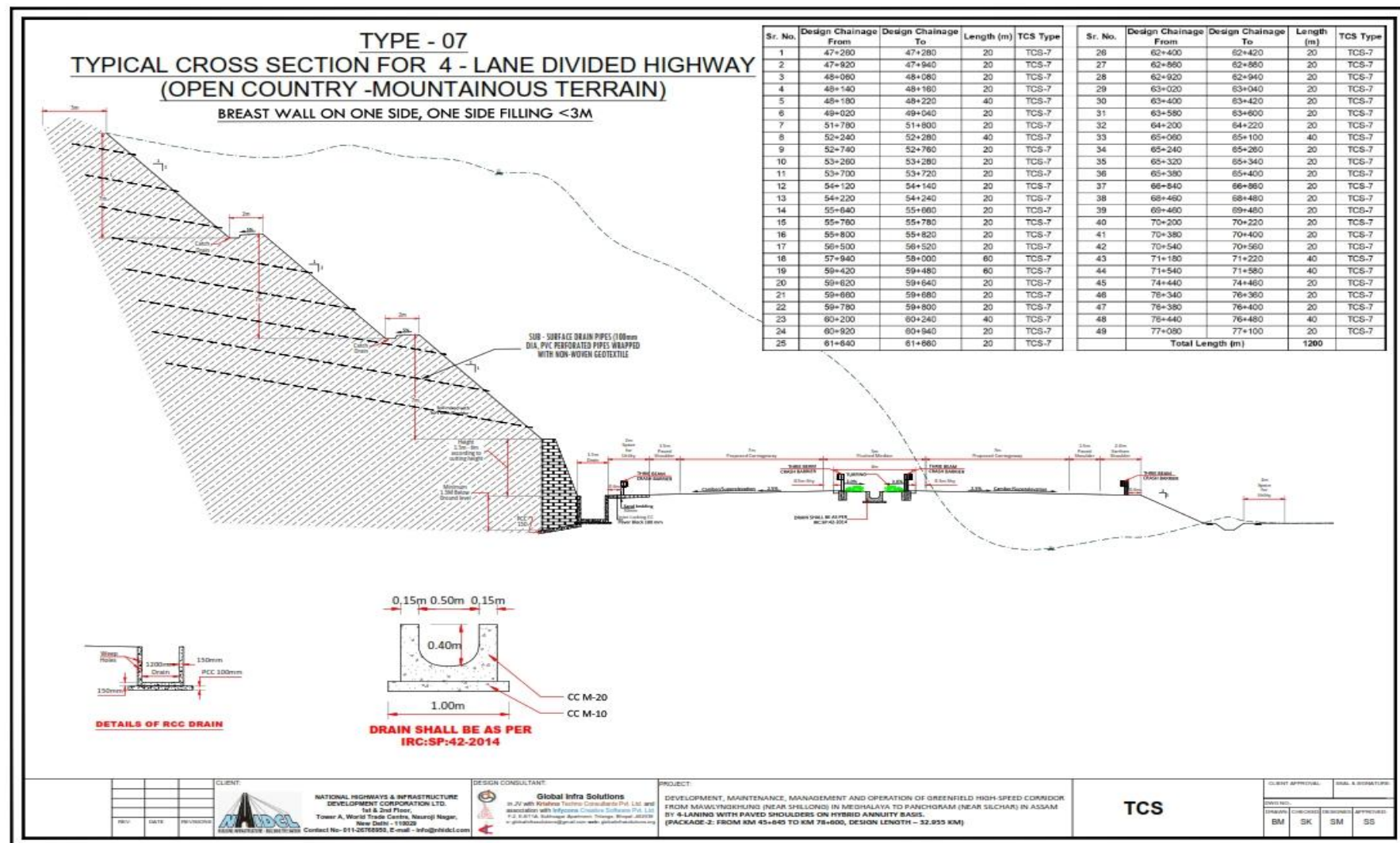
CLIENT APPROVAL:		SEAL & SIGNATURE:	
DRAWING:			
BM	SK	SM	SS

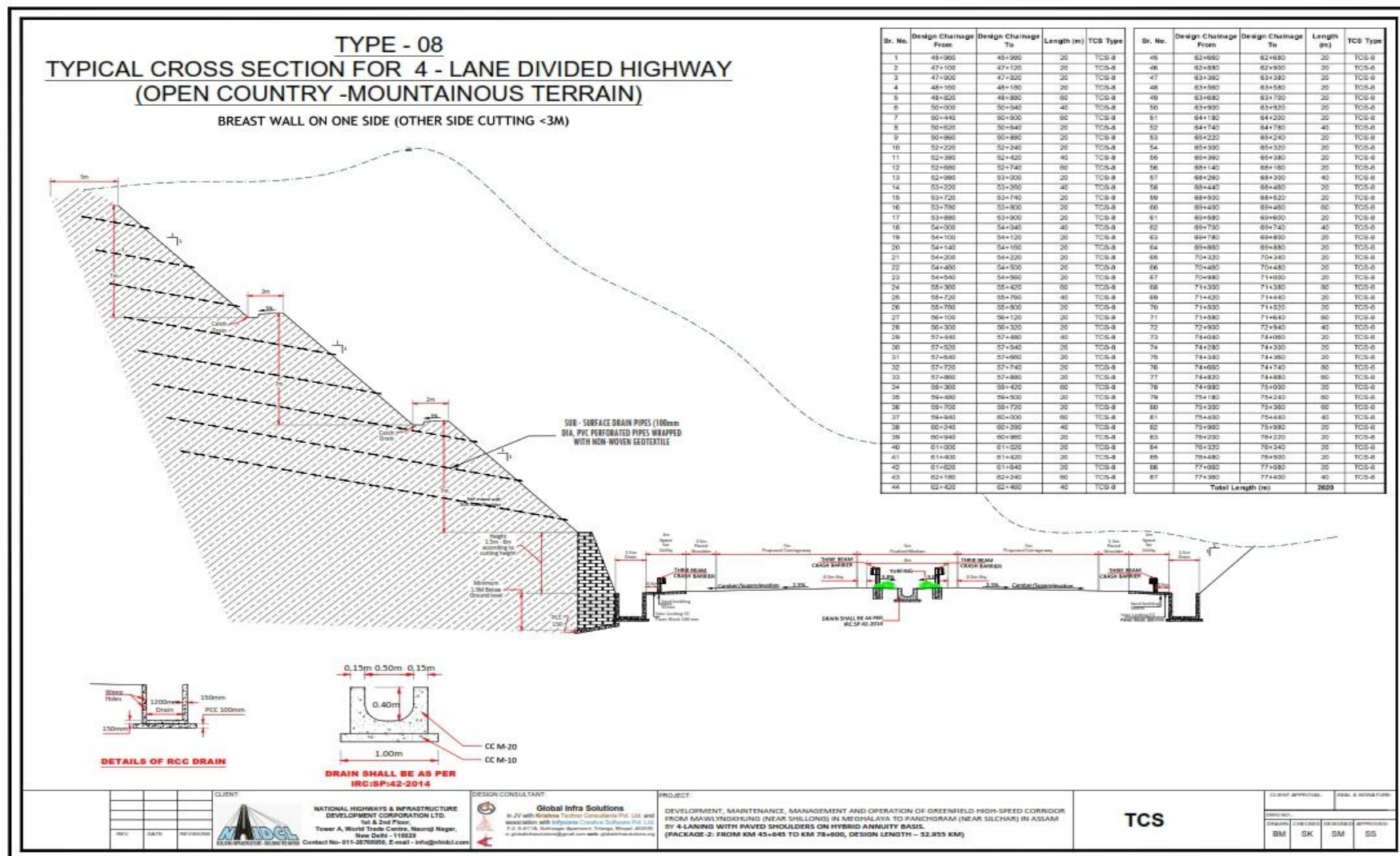


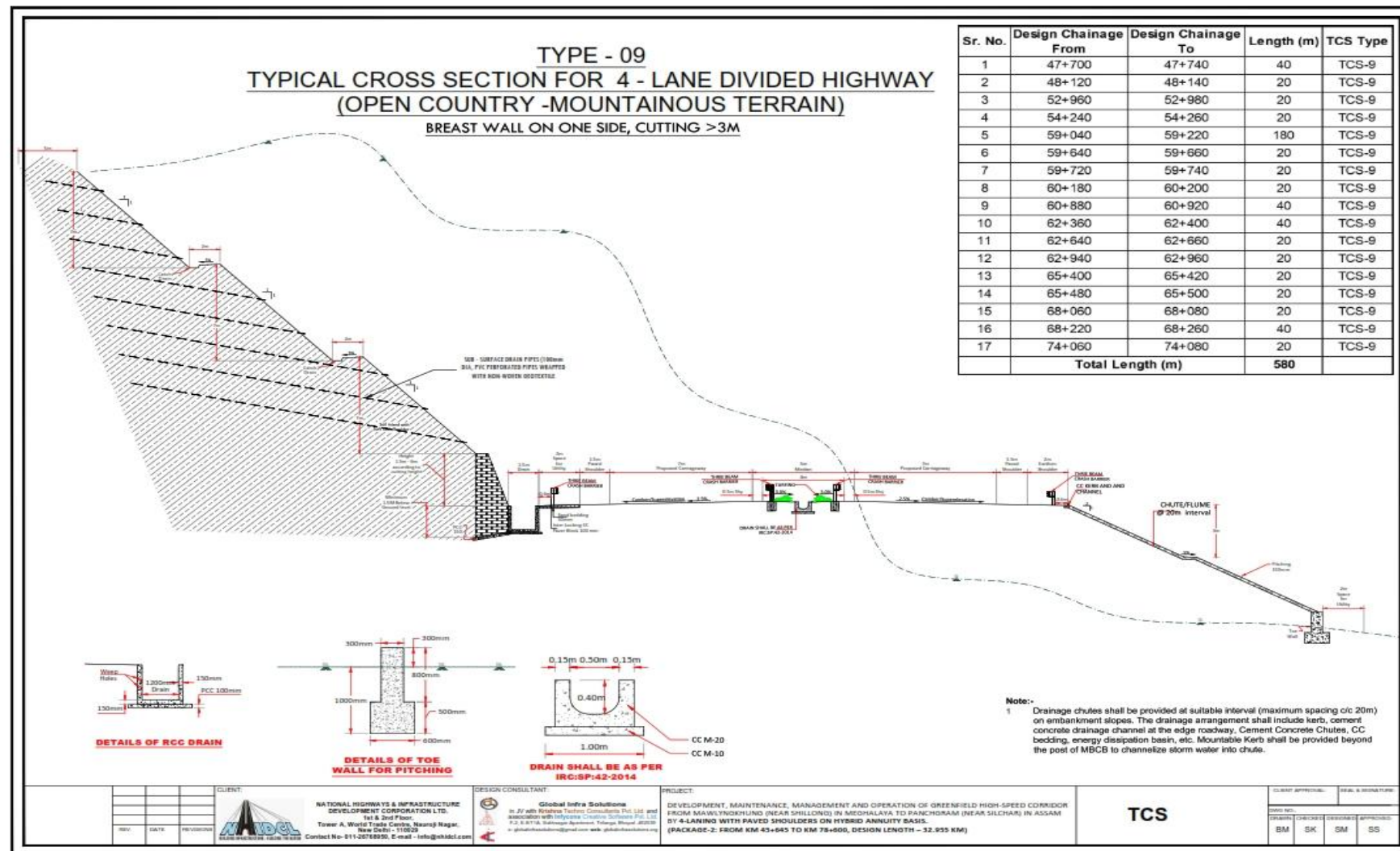
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

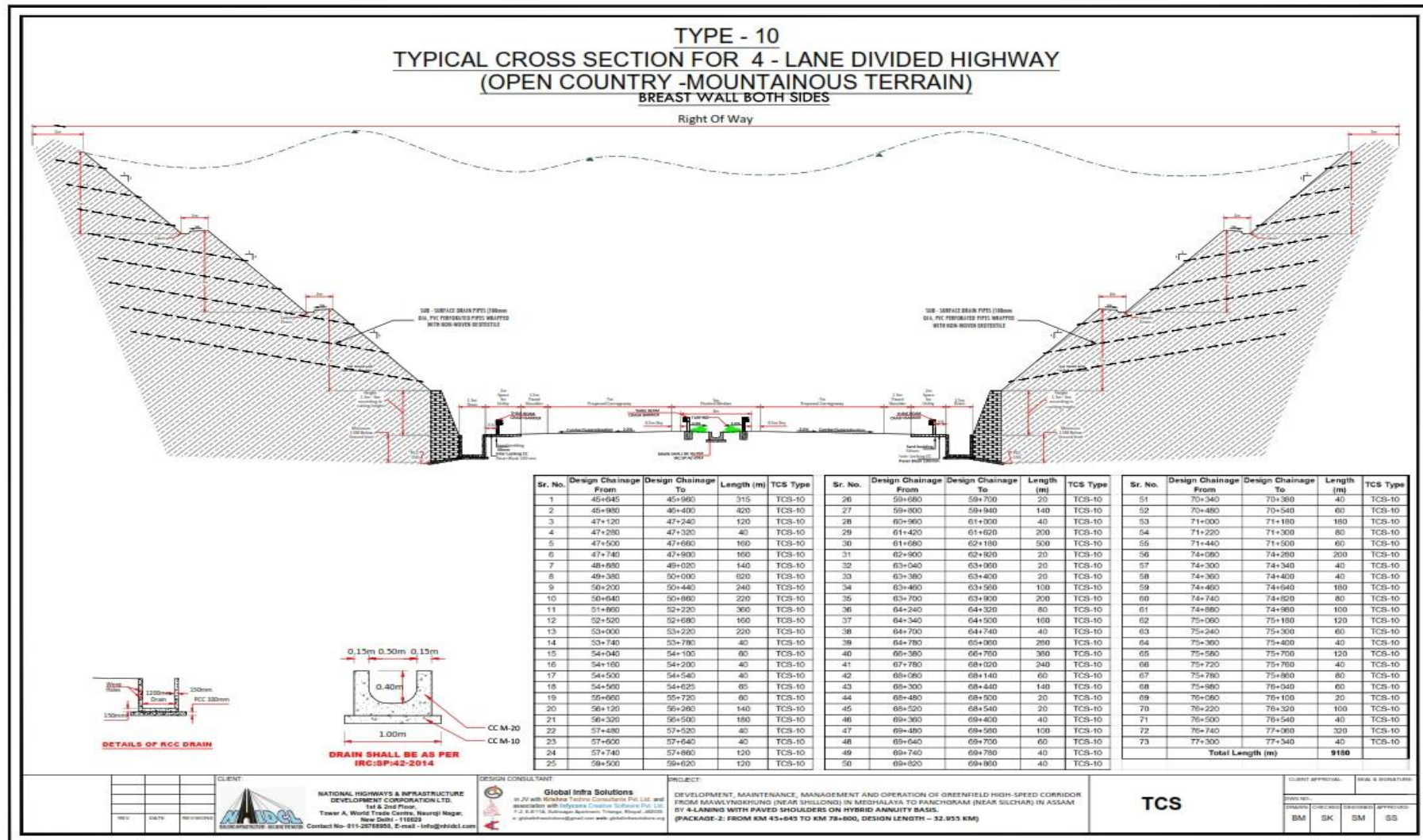


Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

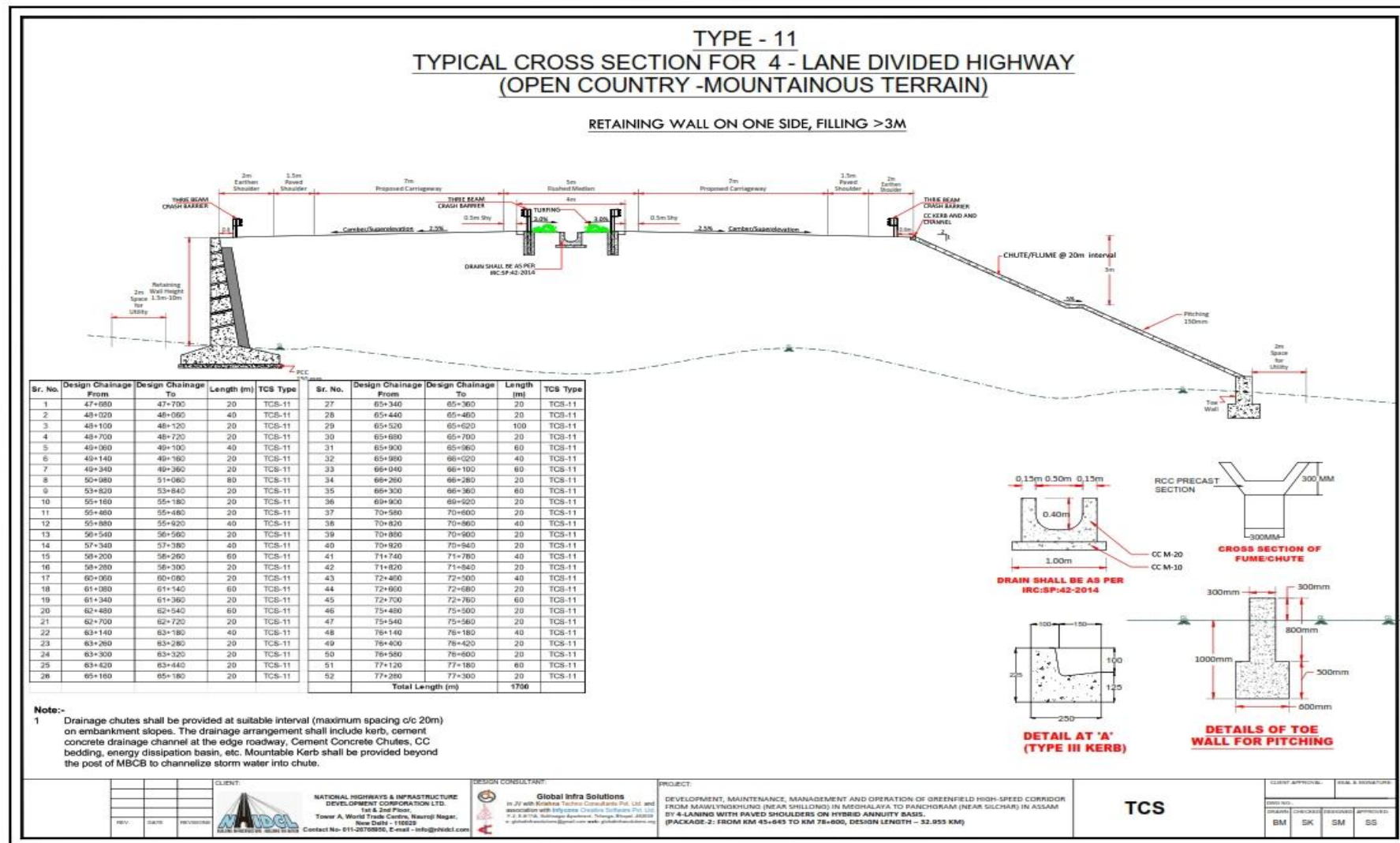




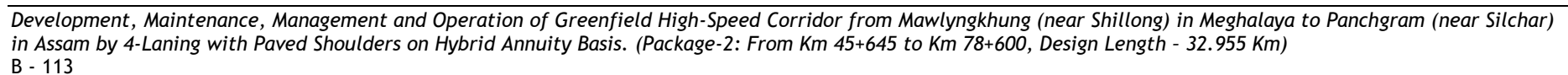


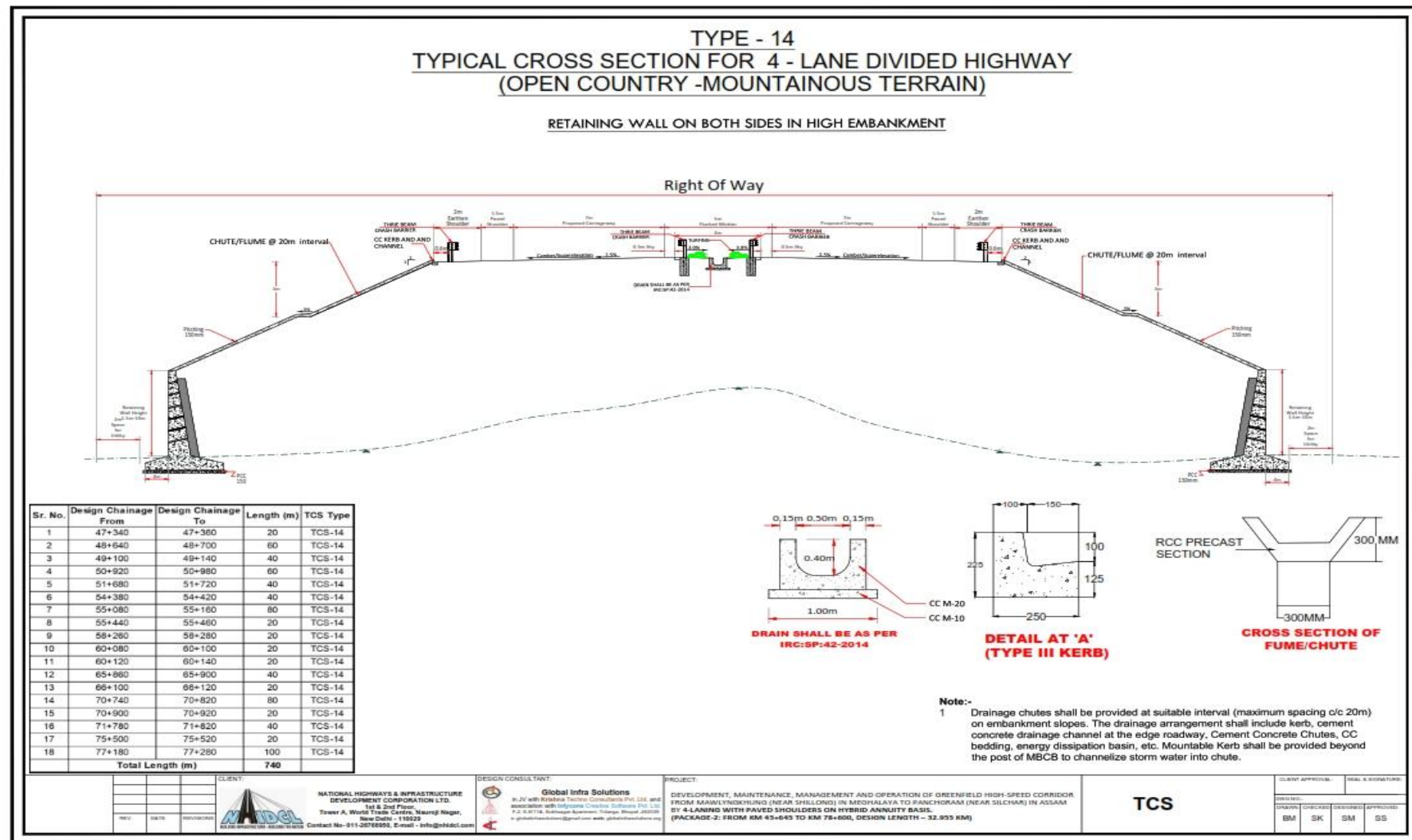


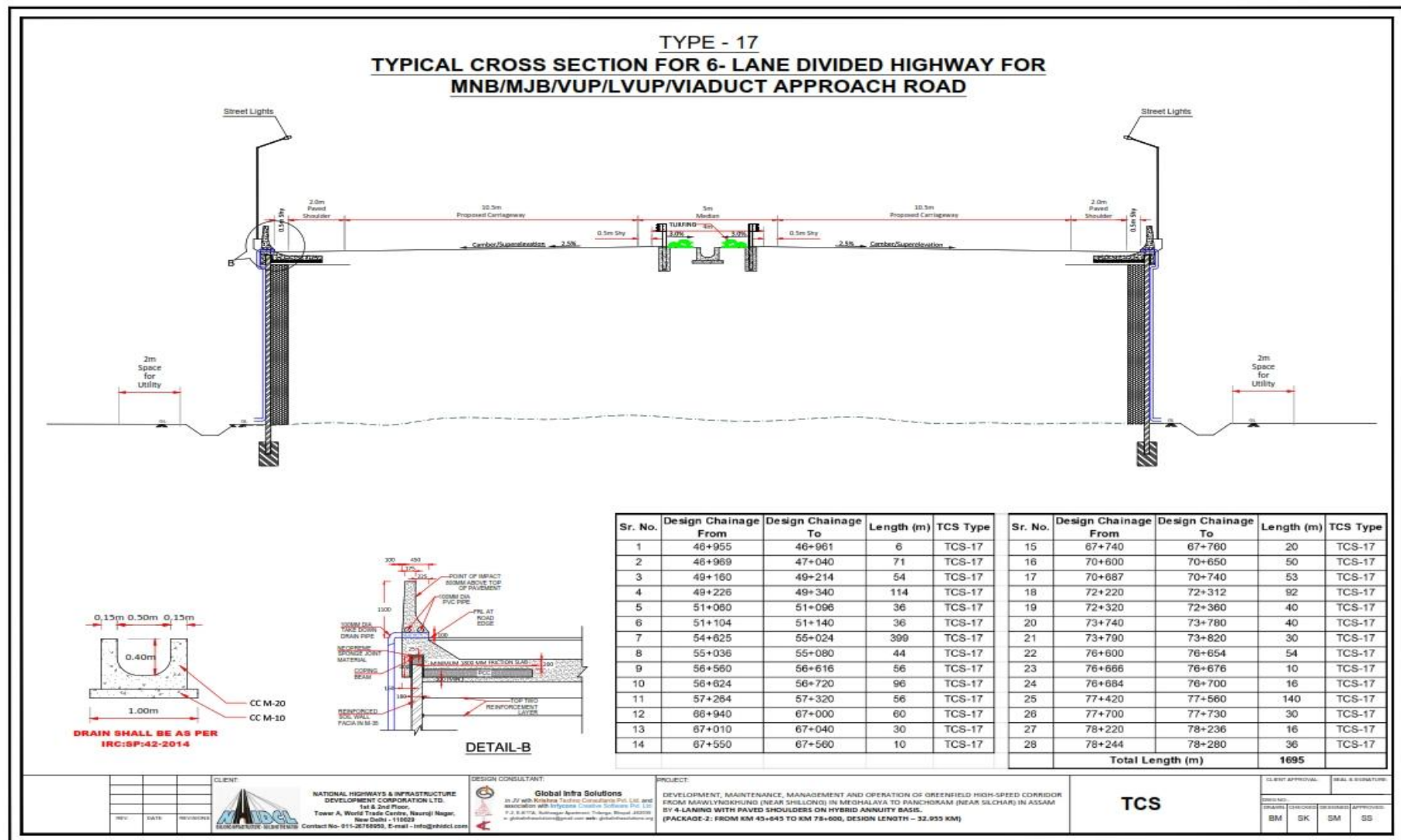
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)



Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

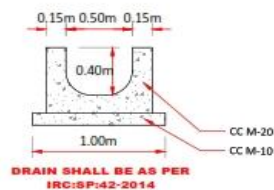






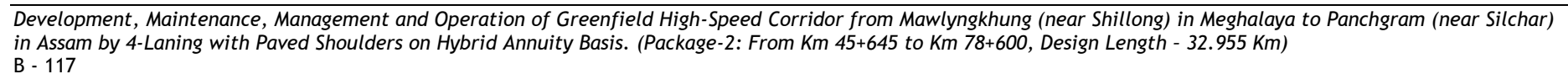
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

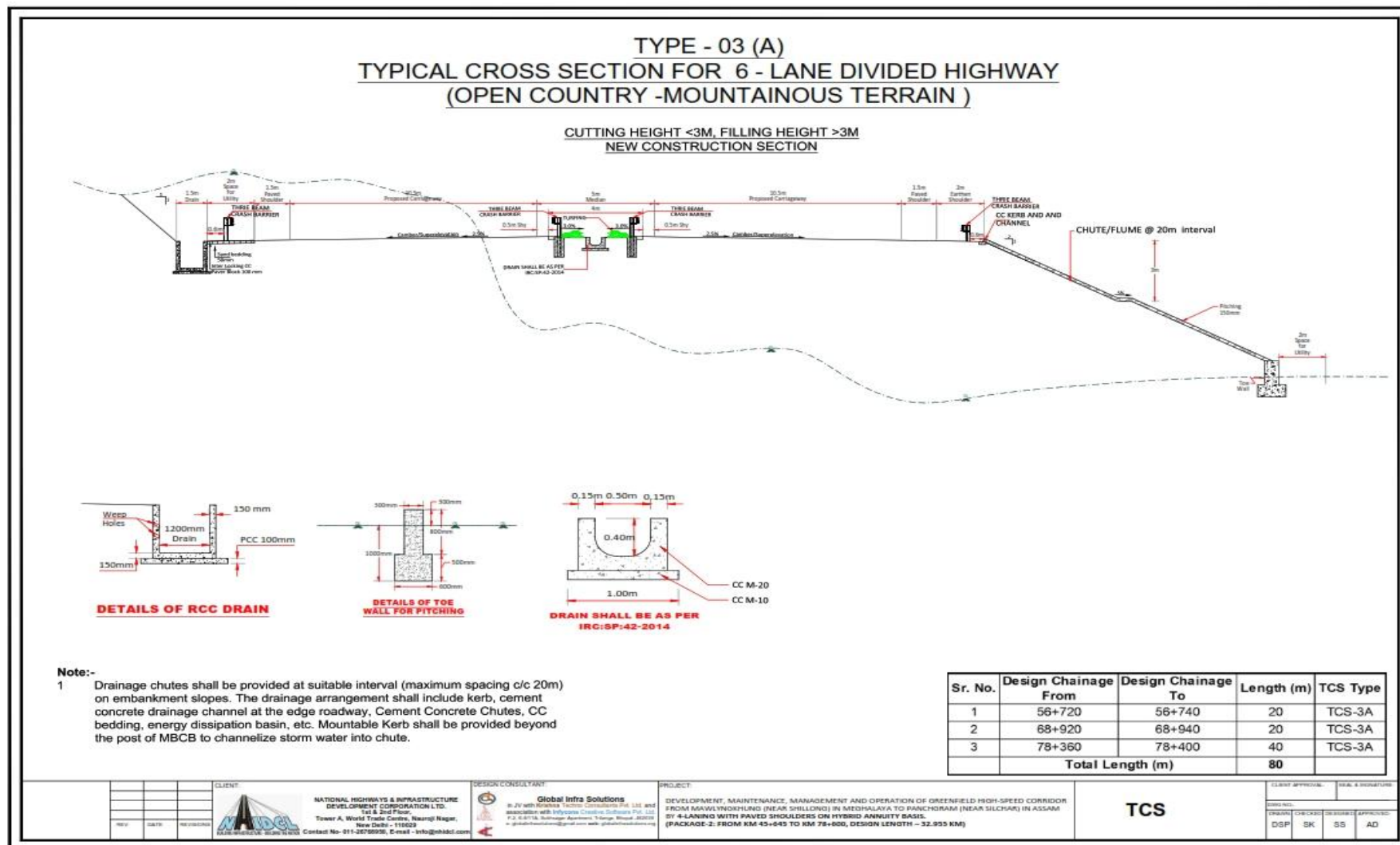
CUTTING HEIGHT < 3M
NEW CONSTRUCTION SECTION

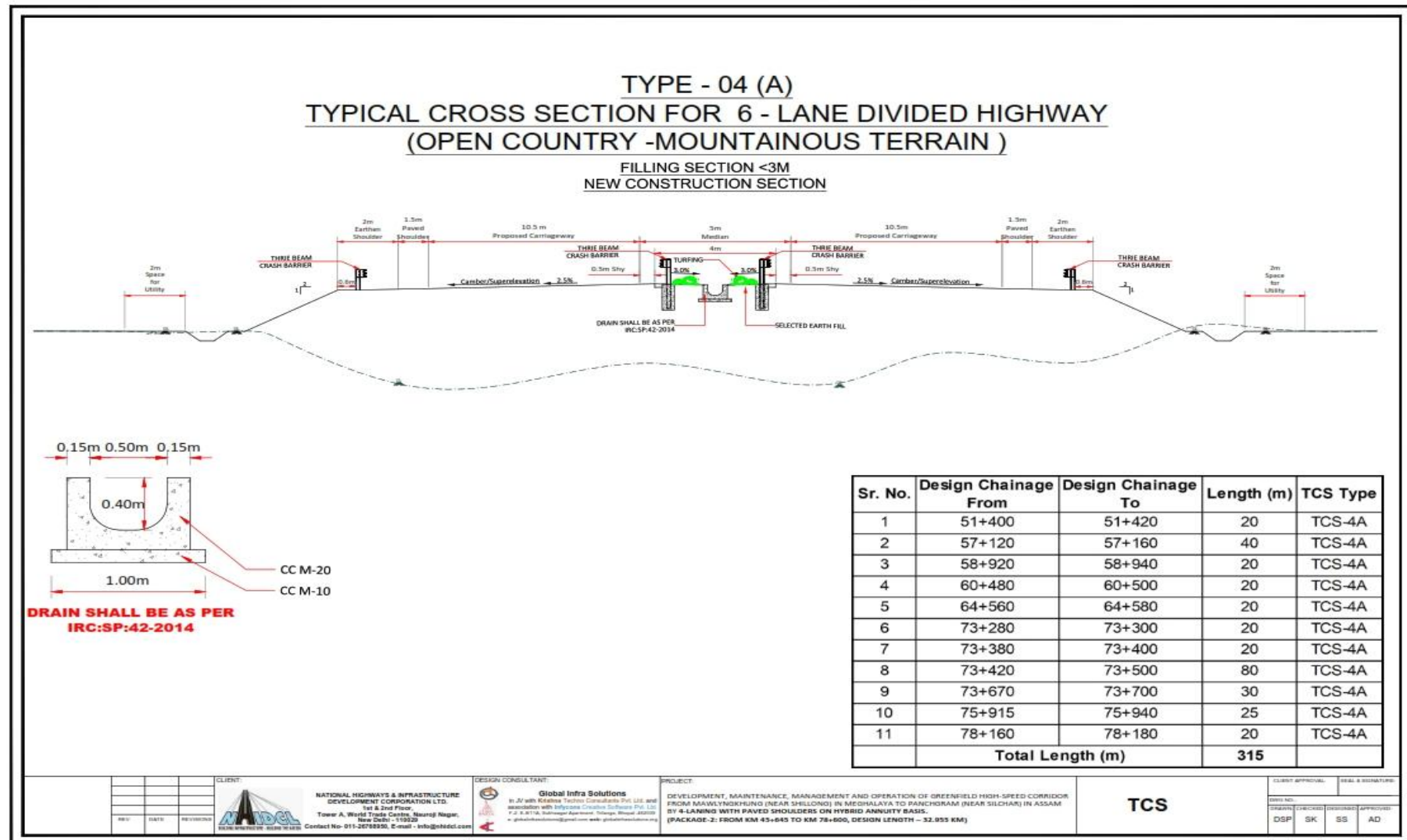


Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type
1	57+160	57+180	20	TCS-1A
2	64+520	64+540	20	TCS-1A
3	72+180	72+220	40	TCS-1A
4	73+820	73+900	80	TCS-1A
5	77+730	77+760	30	TCS-1A
6	78+420	78+440	20	TCS-1A
Total Length (m)			210	

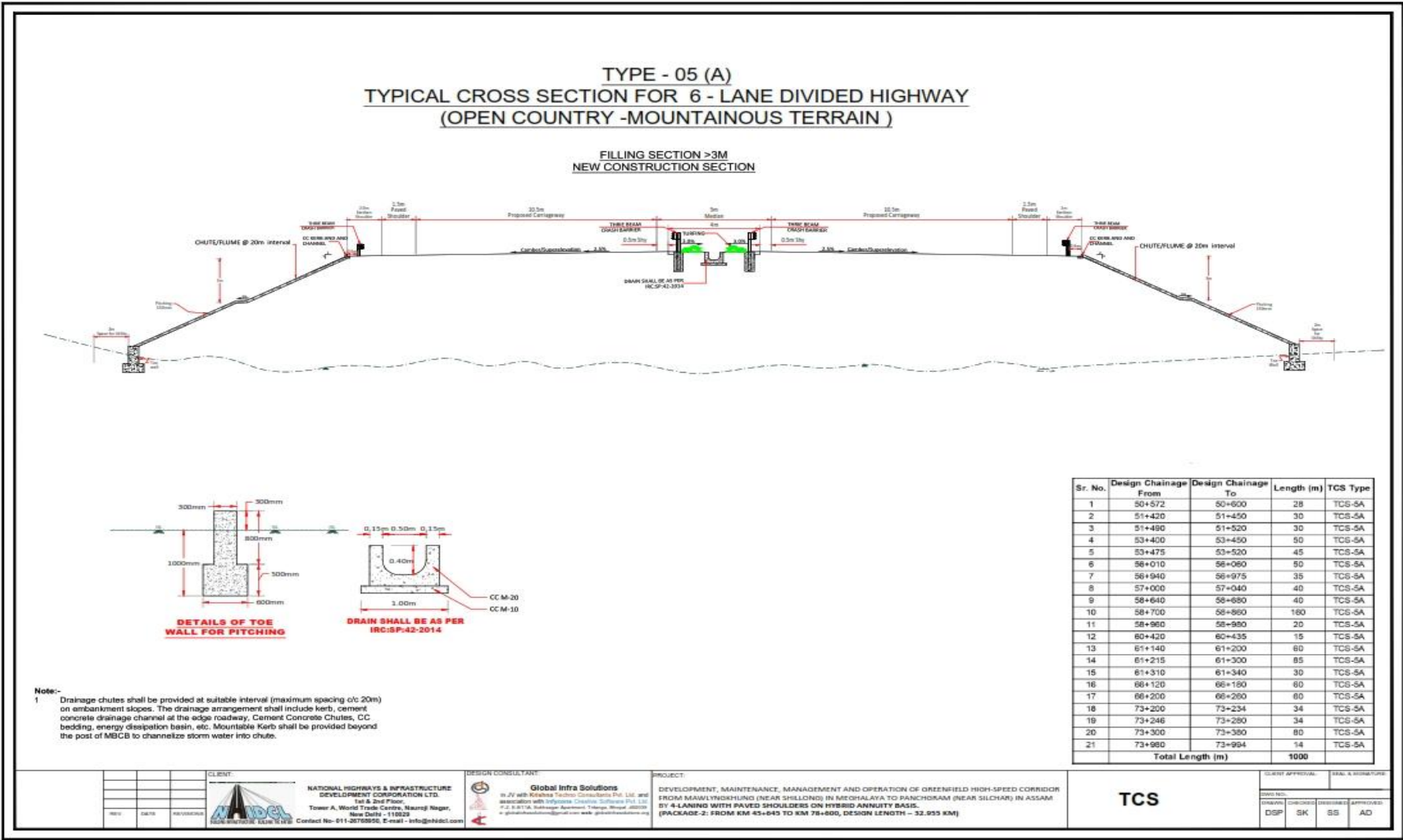
			CLIENT:	DESIGN CONSULTANT:		PROJECT:			CLIENT APPROVAL:	REVISIONS:						
			 NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor Tower A, World Trade Centre, Near P. Nagar, New Delhi - 110029 Contact No- 011-25705595, E-mail - info@nhidcl.com	 Global Infra Solutions In-3rd with Arabica Textiles Consultancy Pvt. Ltd. and association with Infygenia Creative Software Pvt. Ltd. 7-2-A-2nd Floor, Indraprastha Apartment, Phase-1, Gurgaon, Haryana E-mail - gis@globalinfra.com, www.globalinfra.com		DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR (FROM KANAWALPUR UNDER BRIDGE SHILODI) IN MEERHARJI PANCHGHATAM (NEAR SALCHUR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)		TCS		CLIENT APPROVAL: REVISIONS: <table border="1"> <thead> <tr> <th>DATE</th> <th>DESCRIPTION</th> <th>APPROVED BY</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table>	DATE	DESCRIPTION	APPROVED BY			
DATE	DESCRIPTION	APPROVED BY														

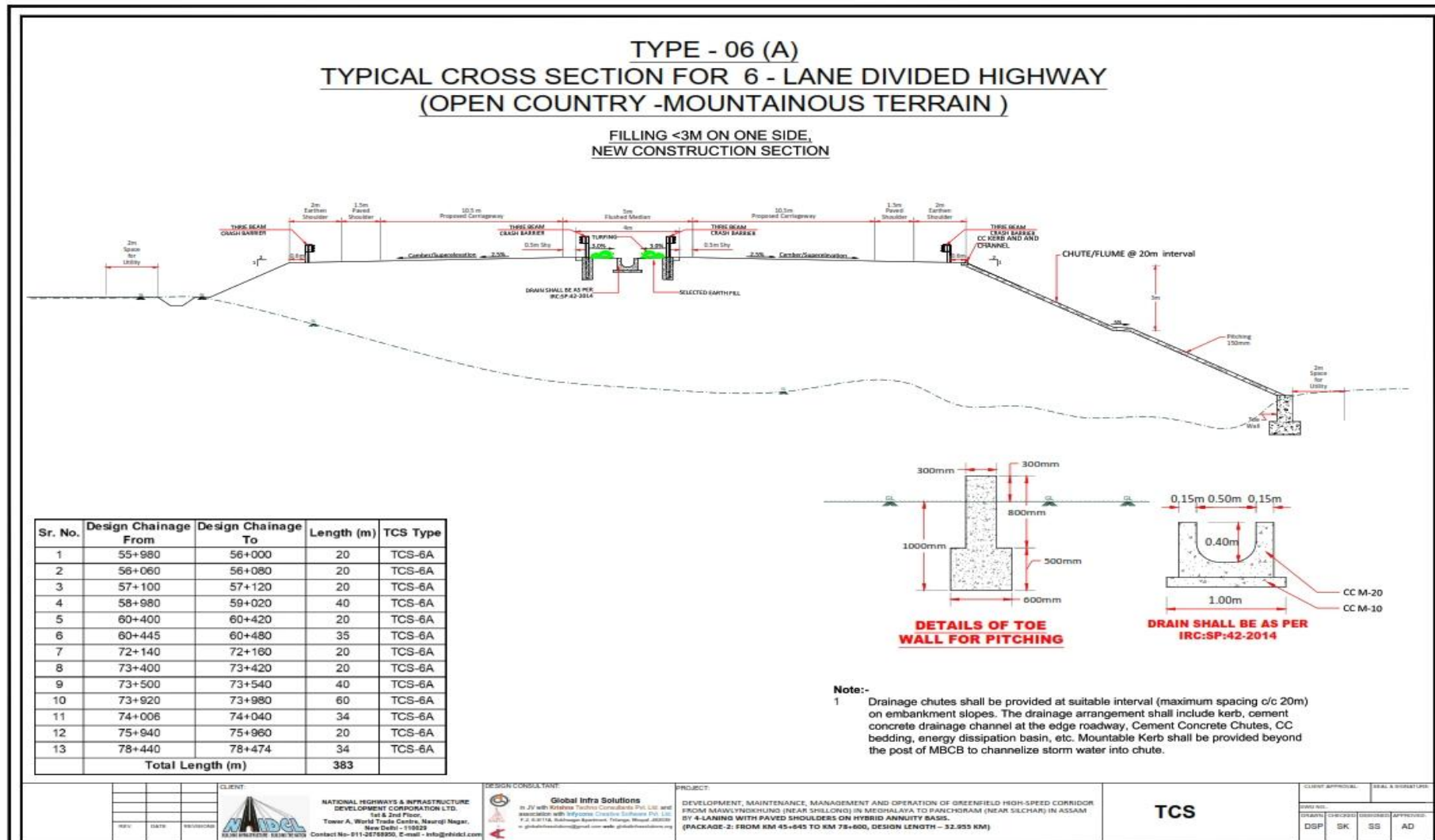




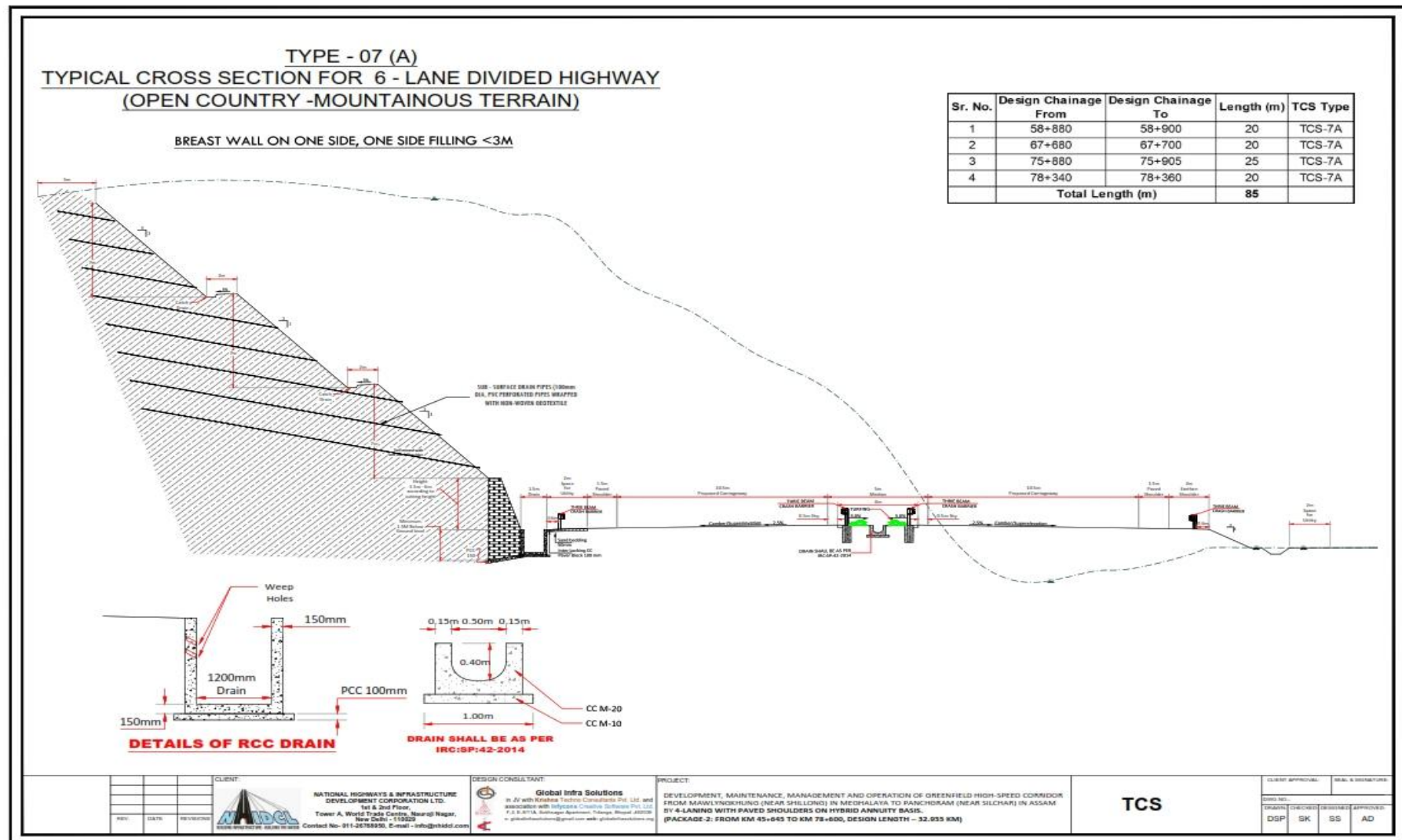


Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

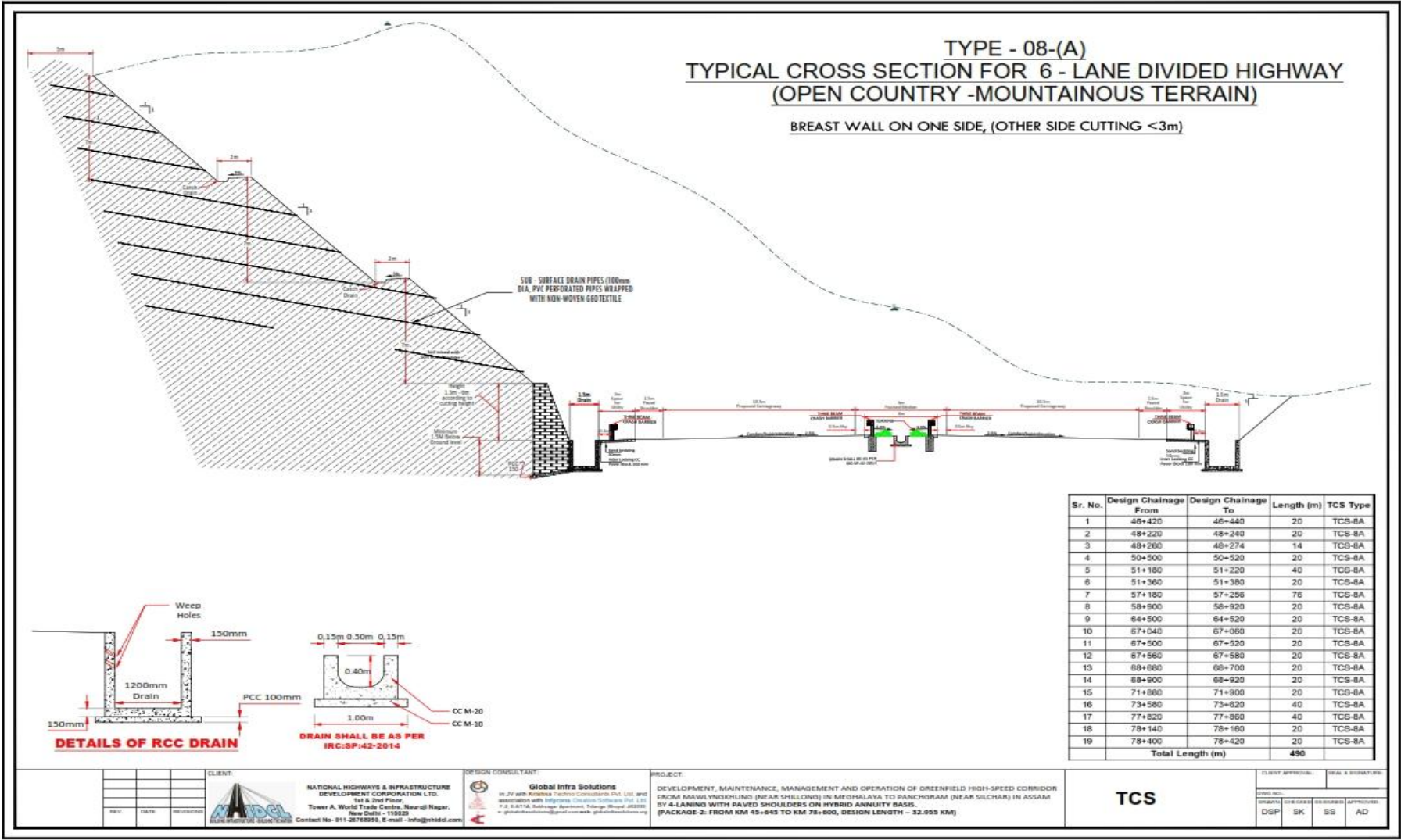


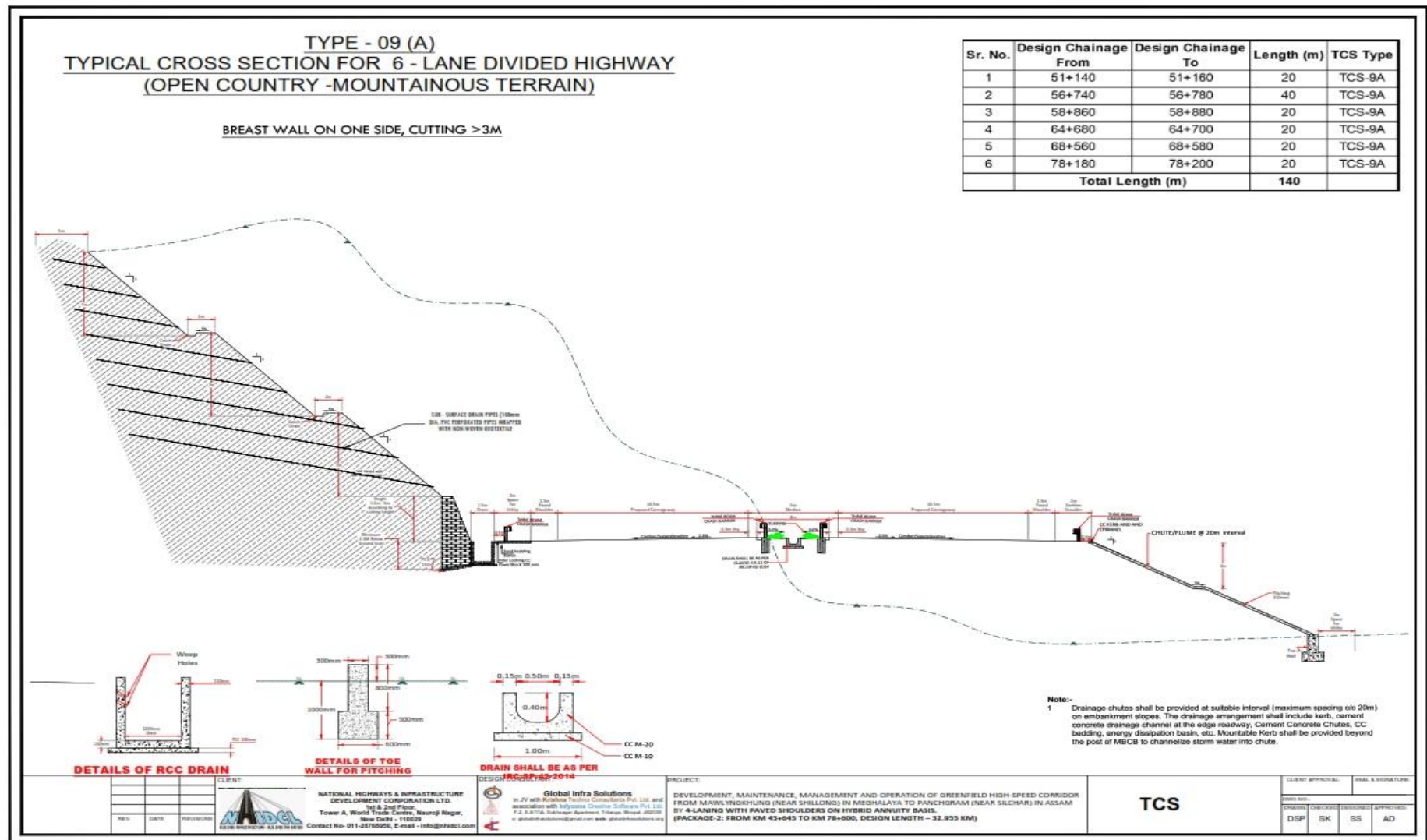


Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

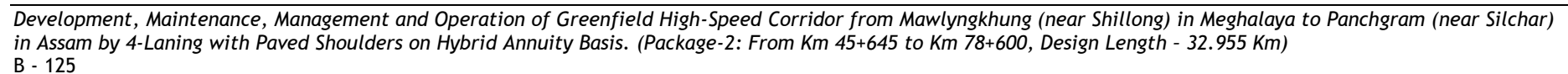


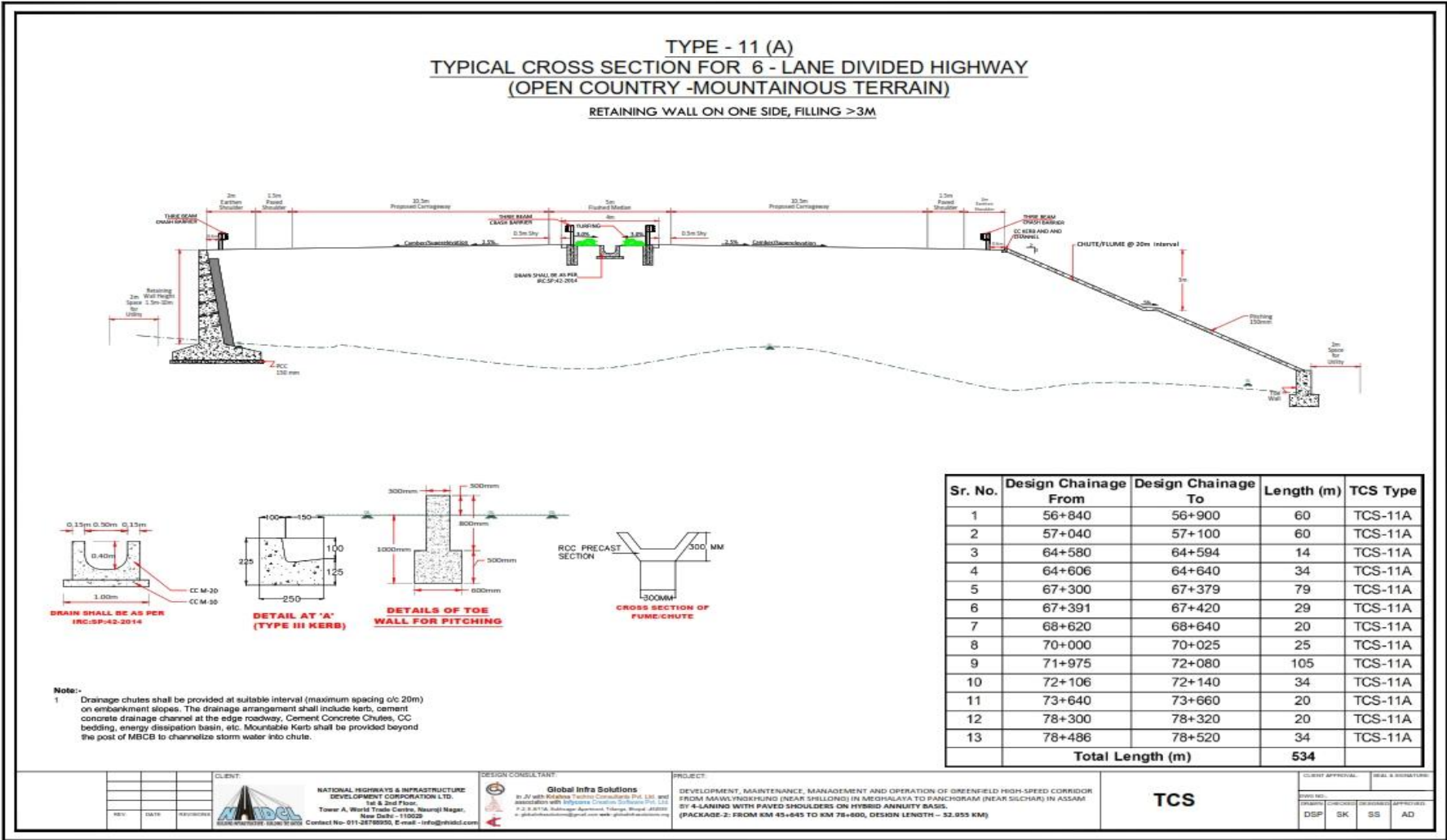
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

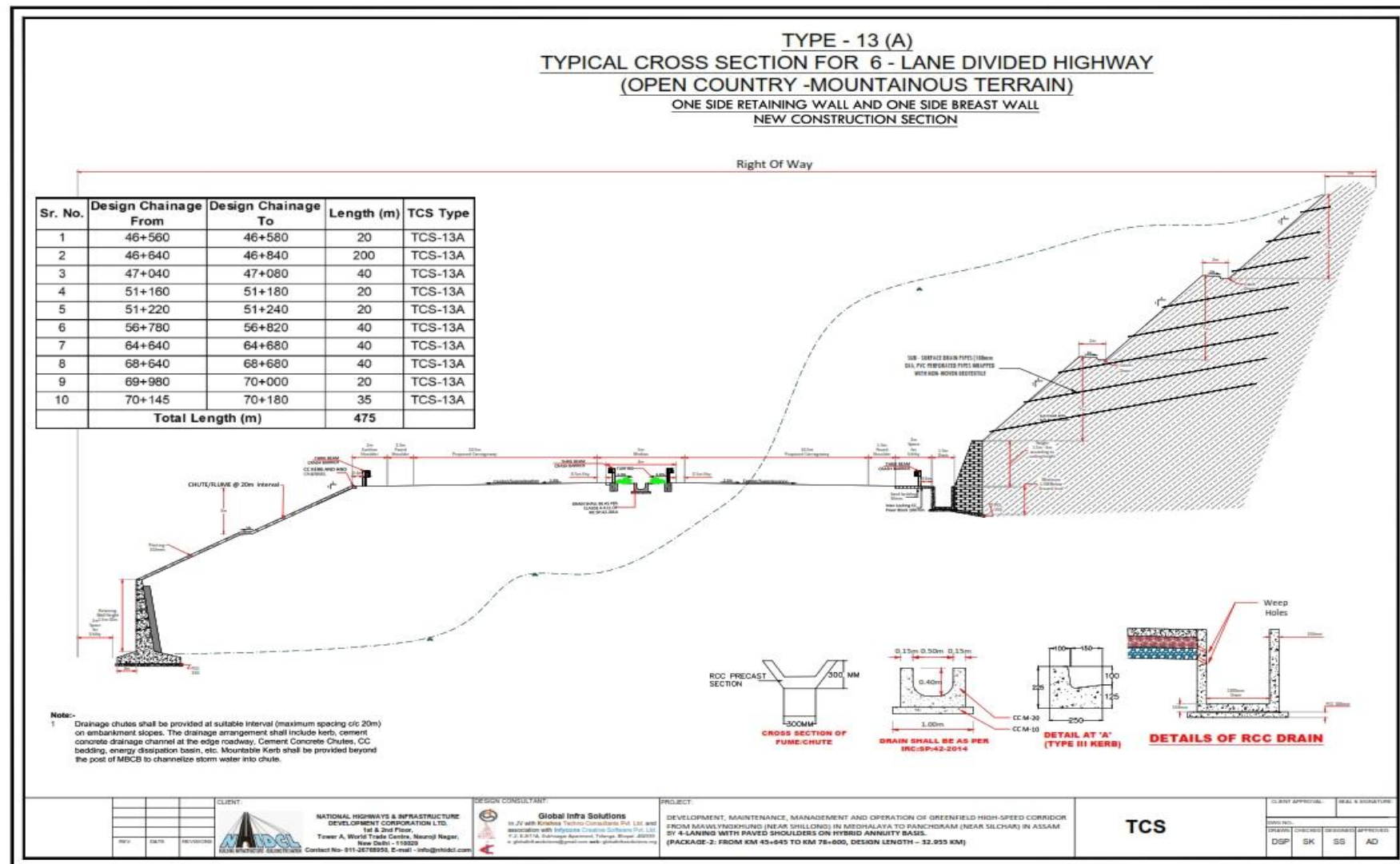




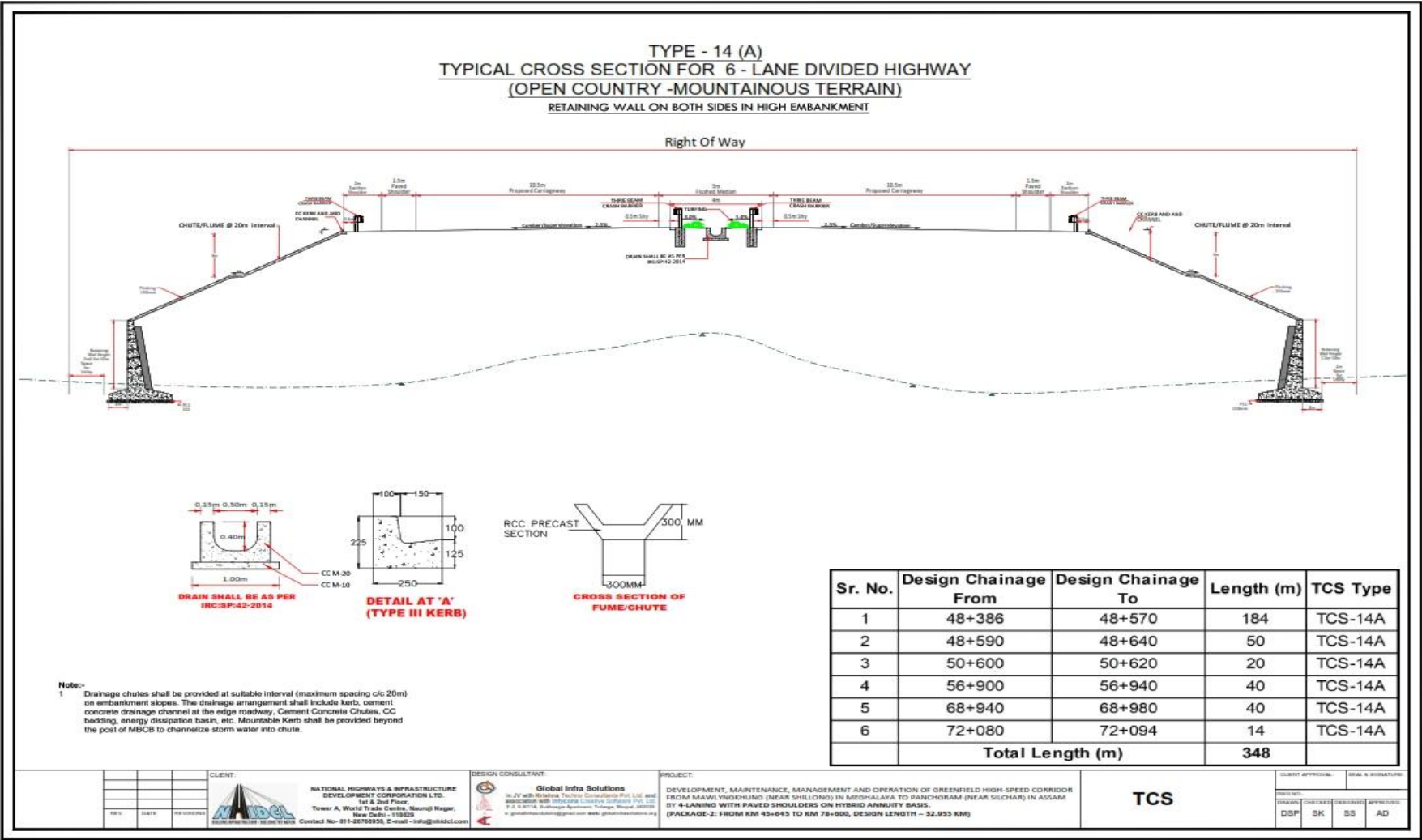
Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

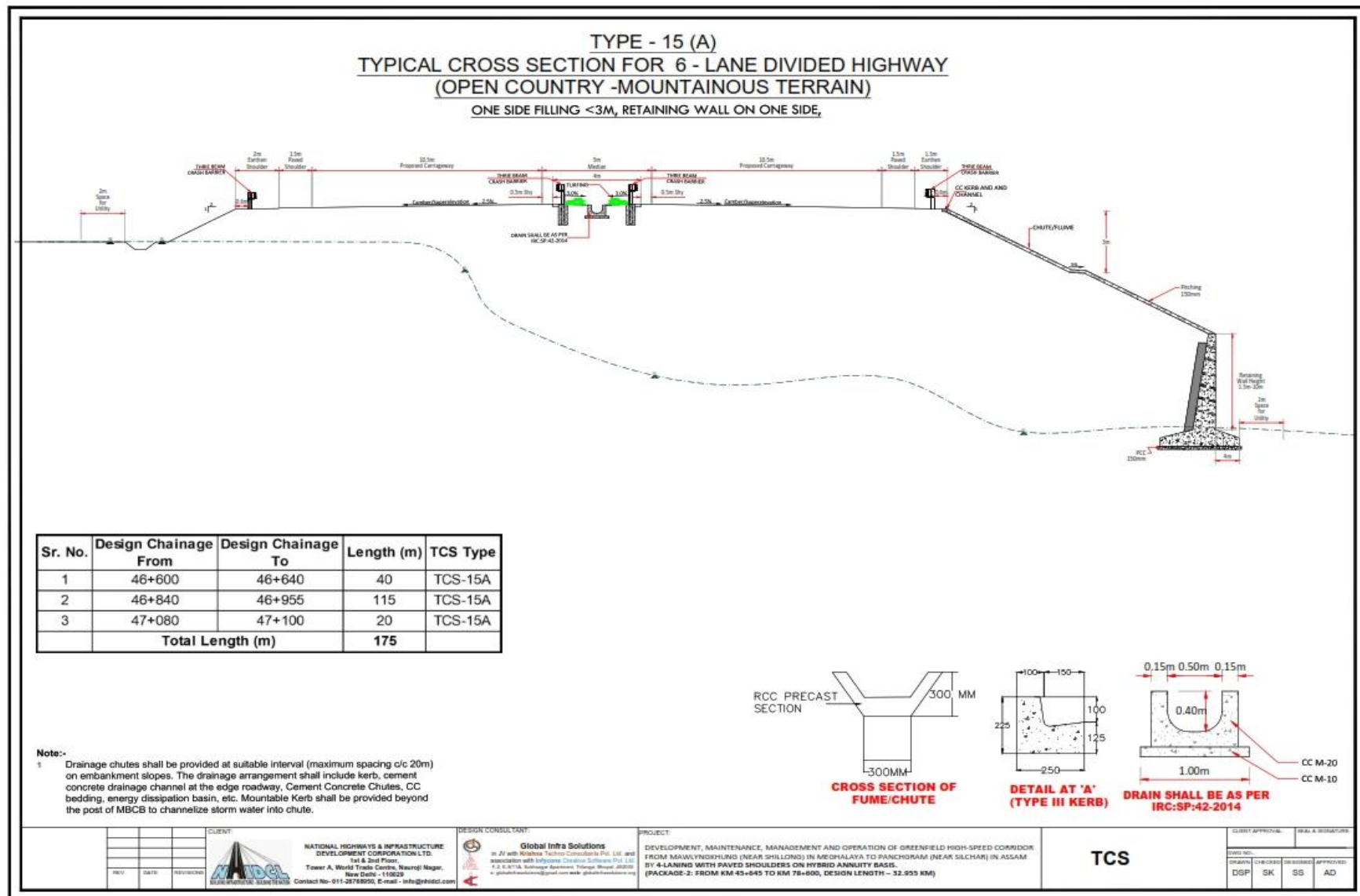




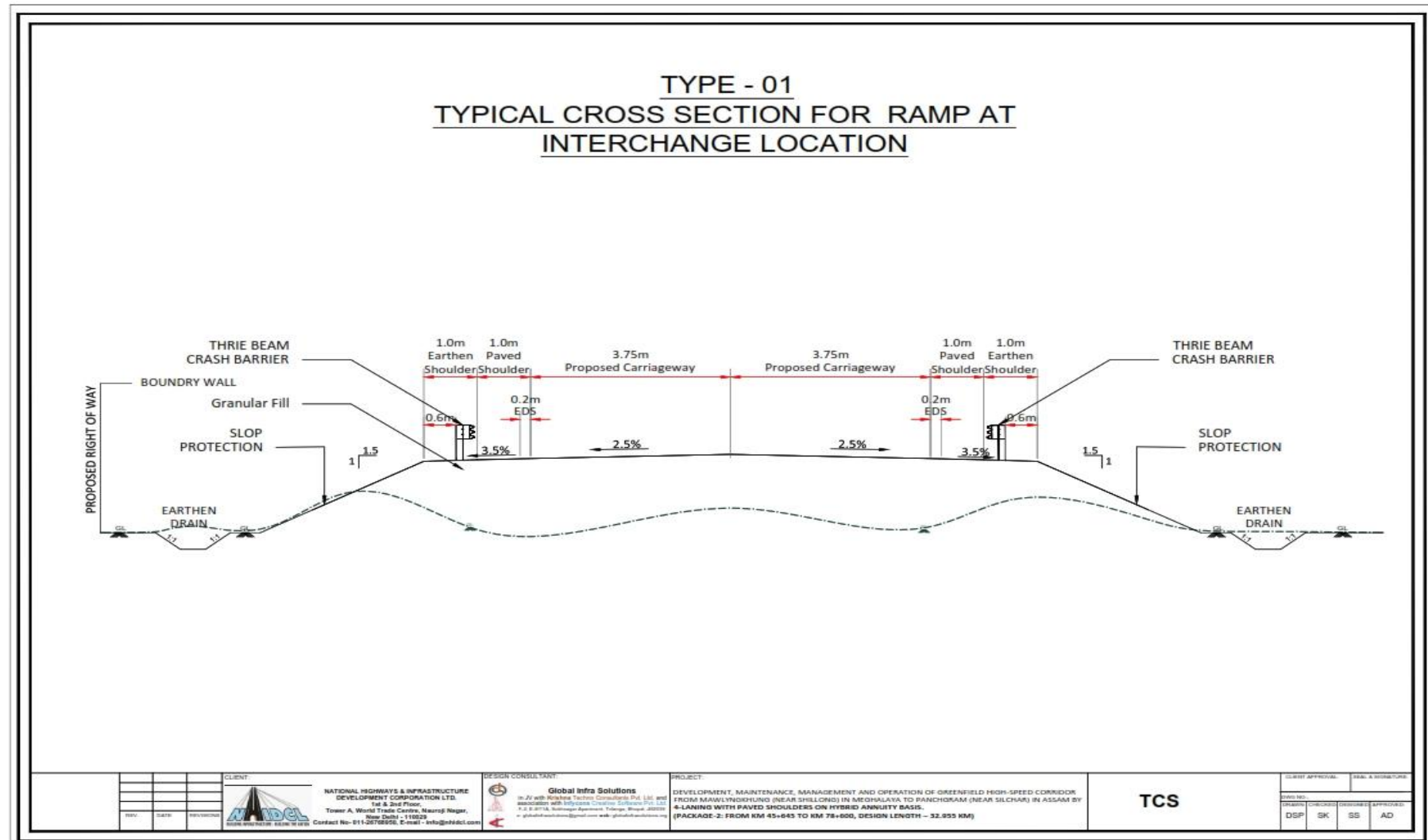


Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

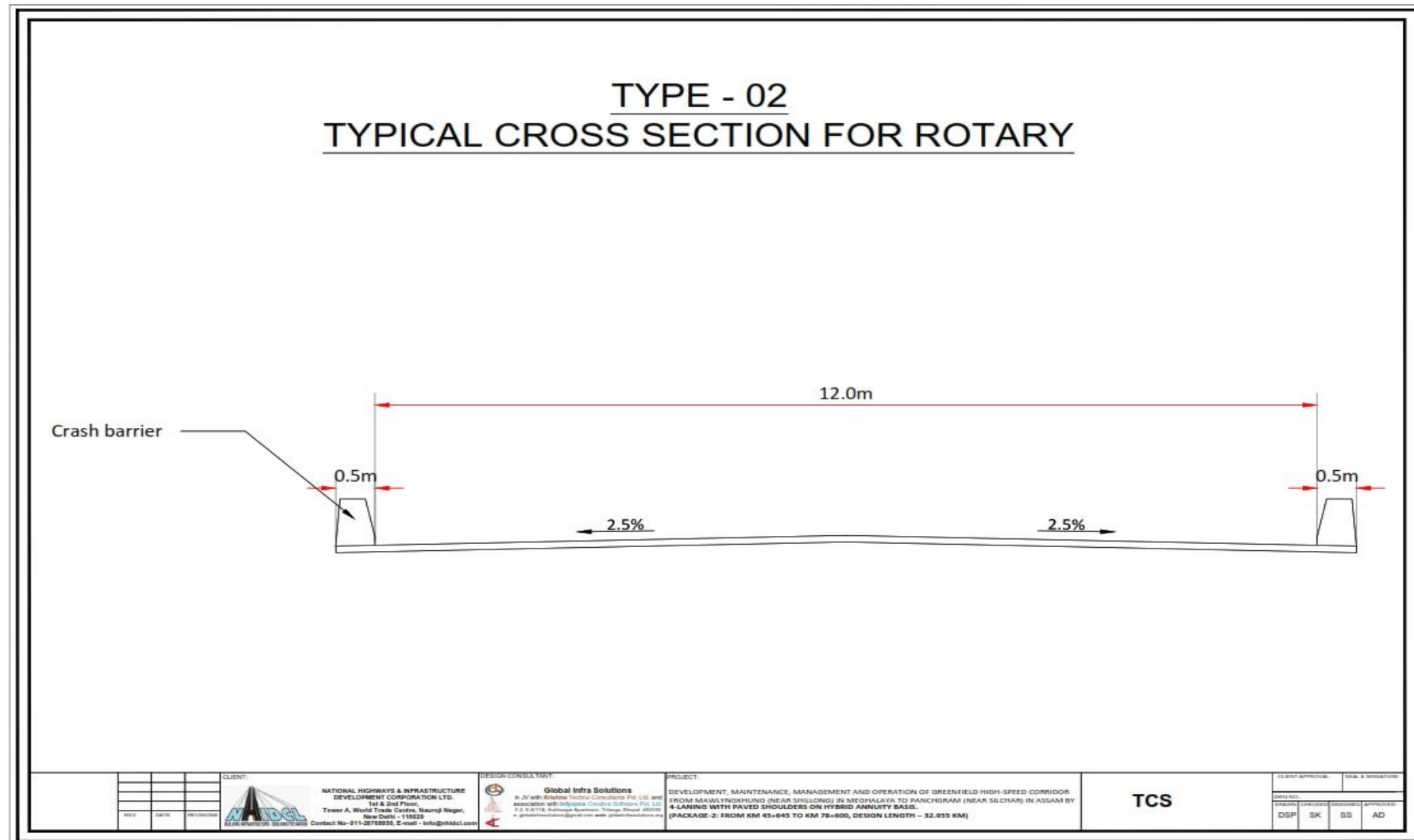




Development, maintenance, management and operation of Greenfield high-speed corridor from mawlyndhung (near shillong) in meghalaya to panchgram (near silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)



Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)



Development, Maintenance, Management and Operation of Greenfield High-Speed Corridor from Mawlyngkhung (near Shillong) in Meghalaya to Panchgram (near Silchar) in Assam by 4-Laning with Paved Shoulders on Hybrid Annuity Basis. (Package-2: From Km 45+645 to Km 78+600, Design Length - 32.955 Km)

SCHEDULE – C
(See Clause 2.1)
PROJECT FACILITIES

1 Project Facilities

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

- a)** Toll Plaza
- b)** Roadside furniture
 - i. Kilometer and Hectometer Stones
 - ii. Traffic Signs
 - iii. Overhead Signs
 - iv. Road Marking
 - v. Road Delineators
 - vi. Reflective Pavement Markers & Solar Studs
 - vii. Traffic Impact Attenuators
 - viii. Boundary pillars
- c)** Operation and Maintenance centers
- d)** Way side Amenities / Service Areas
- e)** Truck lay-byes
- f)** Bus Bay and Bus shelter
- g)** Pedestrian Facilities
- h)** Highway Lighting
- i)** Rainwater Harvesting
- j)** Environmental Management Plan
- k)** Landscaping and Tree Plantation
- l)** Advanced Traffic Management System (ATMS)
- m)** Highway Patrol Units
- n)** Emergency medical services
- o)** Crane Service

1.1 Project Facilities for Project Highway

Project Facilities to be completed on or before project completion date have been described in Annex-I of this Schedule-C.

Annexure – I
(Schedule-C)
PROJECT FACILITIES

1. Project Facilities

The Concessionaire shall construct the Project Facilities described in this Annexure-I to form part of the Project Highway. The Project Facilities shall include:

- a) Toll Plaza
- b) Roadside furniture
 - i. Kilometer and Hectometer Stones
 - ii. Traffic Signs
 - iii. Overhead Signs
 - iv. Road Marking
 - v. Road Delineators
 - vi. Reflective Pavement Markers & Solar Studs
 - vii. Traffic Impact Attenuators
 - viii. Boundary pillars
- c) Operation and Maintenance centers
- d) Wayside Amenities / Service Areas
- e) Truck lay-byes
- f) Bus Bay and Bus shelter
- g) Pedestrian Facilities
- h) Highway Lighting
- i) Rainwater Harvesting
- j) Environmental Management Plan
- k) Landscaping and Tree Plantation
- l) Advanced Traffic Management System (ATMS)
- m) Highway Patrol Units
- n) Emergency medical services
- o) Crane Service

Description of Project Facilities

Each of the Project Facilities is briefly described below:

1. Toll Plaza

Tolling system shall be provided in entire length of the project and the same is integrated with the adjoining packages. The toll plazas shall be provided as per NHA circular No.17.5.82 dated 24/5/2021 and Schedule D. Minimum Lane requirement in the opening year are as follows.

Toll plaza shall be provided at the following locations.

S. No.	Existing Chainage (km)	Design Chainage (km)	Direction	Minimum number of Toll Lanes		Remarks
				Entry	Exit	
1	-	0+350	Ramp-01 – Shillong to Silchar		2	Interchange-1
2	-	0+200	Ramp-02- Shillong to Silchar	2		
3	-	0+405	Ramp-03- Silchar to Shillong		2	
4	-	0+325	Ramp-04- Silchar to Shillong	2		
5	-	0+540	Ramp-01 – Shillong to Silchar		2	Interchange-2
6	-	0+660	Ramp-02- Shillong to Silchar	2		
7	-	0+320	Ramp-03- Silchar to Shillong		2	
8	-	0+300	Ramp-04- Silchar to Shillong	2		
9	-	0+240	Ramp-01 – Shillong to Silchar	2		Interchange-3
10	-	0+560	Ramp-02- Shillong to Silchar		2	
11	-	0+260	Ramp-03- Silchar to Shillong	2		
12	-	0+340	Ramp-04- Silchar to Shillong		2	

Note: 1.The Toll Plaza shall be constructed as per Manual (Schedule D) considering the modification as per NHA Circular NHA/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No. 17.5.82 dated 24th May, 2021. However, layout as mentioned in Schedule-C shall be followed.

2.Based on the toll lanes as given above, toll Booth complex, weigh bridges, electrical systems, and all other facilities required/ mentioned in manual shall be provided as per specification mentioned in Schedule D

3.No. of toll lane specified above are to be provided. The Concessionaire shall design and provide toll lane as per Manual (Schedule D) & NHA Circular NHA/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No.17.5.82 dated 24th May, 2021 subject to as specified above.

4.All Toll Lanes to be equipped with Hybrid ETC equipment's as per NHA/Policy Guidelines/Management of Toll Plaza/2021 Policy Circular No. 17.5.82 dated 24th May, 2021.

5. A separate Highway Nest with toilet facility for road users shall be provided near toll plaza location along with parking facility. One toilet block on each direction shall be provided. These toilet facilities shall follow CPWD specifications for sanitary ware items and fittings such as WC, wash basin, Wash basin-Under counter, Urinal flat back, PVC Cistern, IWC Orissa Pan, Flush Value - CP, Wash Basin pillar cock-CP, Bib Cock-CP, Health Faucet, W/c Bib cock, Wash Basin angle cock. One WC shall be provided for specially challenged persons.

6.Point of Sale (POS) with card swapping machines shall be provided.

7.Provide Lane markings and Traffic Signs as per IRC: SP: 84, IRC 35 and IRC 67 (Clause No. 10.8 & 10.9 of IRC: SP:84)

8.Solar panels shall be erected over the either on FOB or over Toll plaza / Admin building 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.

9. Medium speed Weigh in Motion (MSWIM) devices shall be provided in all toll lanes at Toll plaza Location. In addition to MSWIM, Static weigh Bridge (SWBs) shall be provided on each direction as per manual. (Clause No. 10.6, IRC: SP:84)

10. Provide Impact Attenuators on Toll Plaza islands in the direction of traffic. Impact attenuators shall be self-restoring conform to section 10.6 of IRC SP 99 i.e. Manual of Specifications and Standards for Expressways. (Clause No. 9.6, IRC: SP:84)

2. Roadside furniture

2.1 Kilometre and Hectometre Stones

S.No.	Item	Number	Remarks
1	Kilometer Marker/ Stones (including 5 th Kilometer stone)	68	The KM/Hectometer stones/ marker can be Concrete/ Stones and shall be placed on both outer side of the earthen shoulder. The size of Kilometer/ 5 th Kilometer/Hectometer will be as per Manual. In case KM/Hectometer marker are to be fixed on separator between Main Carriageway & Service Road then these should be fixed as reflective signs.
2	Hectometer Marker/ Stones	264	In case of Access Control Highway/ Expressway, KM/Hectometer marker should be fixed as reflective signs. Km/ Hectometre stones are required to provide on main carriageway and Service Road, both If continuous service road is provided throughout project length (Service Road length is more than 1 Km).

2.2 Traffic Signs

Traffic Signs include roadside signs, overhead signs and kerb mounted signs etc. shall be provided along the entire Project Highway and on all Side, Roads joining the main carriageway/service road in line with IRC 67 and MoRTH guidelines RT-25035/07/2023 dated 24.12.2024. A QR code shall be marked on back of each sign as per IRC 67.

All signs shall be of Micro Prismatic Grade Sheeting Corresponding to Class C sheeting as per ASTM D 4956 Type VIII, IX and XI.

All shoulder mounted signs shall be supported on GI Pipes. Overhead Signs shall be placed on a structurally sound gantry or cantilever structure made of GI pipes. On multi-lane roads (6 lanes or above), signs shall be mounted overhead.

The siting of signs shall conform to Table 4.1 and Fig 4.1 of IRC 67. The two successive signs shall be placed at a minimum distance of $0.6 \times V$ metre (V is design speed in Km/h).

The overhead gantry/Cantilever signs shall be placed as given below: **(Clause No. 16.3.2 of IRC 67)**

S.No.	Item	Carriageway (Left, Right, Both)
1	Overhead Gantry signs	
a	Start of Project	-
b	End of project	-
2	Overhead Gantry signs	
a	Reassurance Sign- (Before 10 Km of exit) At 3 Nos. Interchanges exit	Both Side
3	Overhead Gantry signs (Vehicle Type) 2 nos. for each direction	Both Side
4	Cantilever Gantry signs	

S.No.	Item	Carriageway (Left, Right, Both)
a	Advance Direction Sign 2Km Before Exit At 3 Nos. Interchanges exit	Both Side
5	Cantilever Gantry signs at Fee Plaza	
a	At Ch. 54.660 Exit, 55.360 Entry, 55.150 Exit, 54.620 Entry, 54.580 Exit, 65.460 Entry, 65.460 Exit, 64.900 Entry, 77.460 Entry, 77.460 Exit, 78.080 Entry & 78.050 Exit	Both Side

The detailed minimum number of signage indicating places, direction, distances, and other features shall be marked on the alignment plan and submitted, which are as mentioned below.

Note: The locations of the placement of signs shall be finalized in consultation with Independent Engineer/ NHIDCL, as per site requirement.

Sl. No.	Road Signs	Number	Remarks
I	Mandatory/Regulatory		
1	Stop signs	-	
2	Give Way Signs		
3	Prohibitory signs	12	
4	No Parking signs		
5	No Stopping signs		
6	Speed Limit signs (Circular)	-	
7	Speed Limit signs (Vehicle Type)	26	
8	Vehicle Control signs		
9	Restriction Ends sign		
10	Compulsory Direction Control and other signs		
II	Cautionary/Warning		
1	Left/Right Curve	86	
2	Left / Right Curve with side road		
2	Right/Left Hairpin Bend	-	
3	Right/Left Reverse Bend	-	
4	Series of Bends		
5	270 Degree Loop		
6	Side Road		
7	Y-intersection		
8	Cross Road		
9	Roundabout		
10	Traffic Signals		
11	T-intersection		
12	Major Road Ahead		
13	Staggered Inter-section		
14	Merging Traffic Ahead	12	
15	Narrow Road Ahead		
16	Road Widens		
17	Narrow Bridge Ahead		
18	Steep Ascent/Descent		

Sl. No.	Road Signs	Number	Remarks
20	Reduced Carriageway		
21	Start /End of Dual Carriageway		
23	Gap in Median		
24	Pedestrian Crossing		
25	Pedestrian crossing with backing board		
26	School Ahead		
27	Built Up Area		
28	Two Way Operation (on main carriage way /service road		Based on requirement by AE/IE
29	Two Way Traffic on Cross Road Ahead		
30	Danger Warning Sign		
31	Deaf or Blind Persons Likely on Road Ahead		
32	Cycle Crossing		
33	Cycle Route Ahead (Warning for Cycles on road ahead)		
34	Dangerous Dip		
35	Speed Breaker		
36	Rumble Strip	12	
37	Rough Road		
38	Dangerous Ditch		
39	Slippery Road		
40	Slippery Road because of Ice		
41	Opening or Swing Bridge		
42	Overhead Cable	28	
43	Play Ground Ahead		
44	Quay Side or River Bank		
45	Sudden Side Winds		
46	Tunnel Ahead Warning		
47	Falling Rocks		
48	Cattle Crossing		
49	Wild Animals likely to be on Road Ahead		
50	Queues Likely Ahead		
51	Low flying Aircraft		
52	Unguarded Railway Crossing		
53	Guarded Railway Crossing		
54	Crash prone area ahead		
55	U- Turn	-	
III	Chevron Signs		
1	Single Chevron	387	
2	Double Chevron		
3	Triple Chevron		
IV	Object Hazard Marker Sign		

Sl. No.	Road Signs	Number	Remarks
1	Left /Right side Object Hazard Marker	384	
2	Two-way Object Hazard Marker	-	
V	Informatory/Guide		
1	Direction and Place Identification signs	24	
2	Stack Type Advance Direction Sign (Shoulder Mounted)		
3	Stack Type Advance Direction Sign with cautionary / regulatory signs (Shoulder Mounted)		
4	Map Type Advance Direction Sign (Shoulder Mounted)		
5	Map Type Advance Direction Sign for roundabout (Shoulder Mounted)		
6	Flag Type Direction Sign	18	
7	Reassurance Sign	6	
8	Place Identification Sign		
9	Bus Lay Bay	-	
10	Toll Booth Ahead	12	
11	Weigh Bridge Ahead		
12	Shoulder Mounted Sign in Advance of a Grade Separated Junction/ Interchange		
13	Expressway Sign		
14	Gantry Mounted Advanced Direction Sign Ahead of a Flyover in Urban/City Roads		Instead of continuous sign board, Separate Signs shall be provided for each information
15	Gantry Mounted advance Direction Sign Ahead of a Grade Separated Junction		
16	Gantry Mounted advance Direction Sign Ahead of a At Grade Intersection		
17	Gantry Mounted Advance Direction Sign for Interchange	6	
18	Cantilever Gantry Mounted Advance Direction Sign for Interchange	6	
19	Lane Dedicated Gantry Sign	2	
20	Definition/Supplementary Plates		
21	Tourism Related Sign		
22	Tourist Destination Direction Information Signs Without Photograph		
23	Tourist Destination Direction Information Signs With Photograph		
24	Finger Destination direction Information Sign for Pedestrians		
25	Tourist Map Information Sign		
26	Boundary Sign at Entrance to a City/Place		
27	Boundary Sign at Entrance to a Tourist Destination		
VI	Facility Information signs		
1	Eating Place	10	
2	Light Refreshment		
3	Resting Place		

Sl. No.	Road Signs	Number	Remarks
4	First Aid Post		
5	Toilet		
6	Filling Station (Fuel Pump)	-	
7	Hospital	-	
9	U-Turn Ahead		
10	Pedestrian Subway		
11	Police Station		
12	Picnic Site		
13	Repair Facility		
14	Railway Station/Metro Station/Monorail Station	-	
15	Industrial Area		
16	Cycle Rickshaw Stand		
17	Taxi Stand		
18	Auto Rickshaw Stand		
19	Home Zone		
20	Camp Site		
21	Airport		
22	Golf Course		
23	National Heritage		
24	No Through Road		
25	No Through Side Road		
26	Toll Road Ahead	12	
27	Guide Sign on Toll Lane Portal		
28	Country Border		
29	Entry Ramp for Expressway	12	
30	Exit Ramp for Expressway	12	
31	Expressway Symbol		
32	End of Expressway		
33	Bus Stop	-	
34	Bus Lane		
35	Contra Flow Bus Lane		
36	Cycle Lane		
37	Contra Flow Cycle Lane		
38	Holiday Chalets		
39	Emergency Exit		
VII	Other Useful Information Signs		
1	Signs For Persons with Disabilities		
2	International symbol of Accessibility		
3	Parking Information		
4	Parking Areas		
5	Ramped Entrance to Subway/Over Bridge		
6	Telephone Facilities	8	

Sl. No.	Road Signs	Number	Remarks
7	Toilet Facilities	12	
8	Way Finding		
9	Parking Signs		
10	Auto Rickshaw Parking		
11	Cycle Parking		
12	Cycle Rickshaw Parking		
13	Scooter and Motorcycle Parking		
14	Taxi Parking		
15	Park and Ride		
16	Parking Restrictions Signs for Traffic Management		
17	Flood Gauge Sign		
VIII	Route Maker Signs		
1	State Highway Route Marker Sign		
2	National Highway Route Marker Sign		
3	Asian Highway Route Marker Sign		
4	Expressway Route Marker Sign	14	

2.3 Road Marking

Road Markings shall be Hot applied thermoplastic materials with reflectorized beads to achieve visibility confirming to clause 2.7.2 of IRC 35.

The cold applied plastics pavement markings shall be used for School Zone Markings, Audible Raised Profile Edge Lines and Block Markings (BM 01/02/03).

S. No.	Item	For Main Carriageway		Remarks
		Length/Area	Number	
1	Longitudinal Marking	-		As per Manual
2	Transverse Marking			As per Manual
3	Hazard Marking			As per Manual
4	Block Marking			As per Manual
5	Arrow Marking			As per Manual
6	Directional Marking			As per Manual
7	Facility Marking			As per Manual
8	Center Line			As per Manual
9	Traffic Lane Lines			As per Manual
10	No Overtaking Lines			As per Manual
11	Warning Lines			As per Manual
12	Border or Edge Lines			As per Manual
13	Longitudinal Markings for Undivided Roads			As per Manual
14	Longitudinal Markings for Divided Roads			As per Manual
15	Longitudinal Markings for Ramps/Slip Roads/One Way Streets			As per Manual

S. No.	Item	For Main Carriageway		Remarks
		Length/Area	Number	
16	Stop Line			As per Manual
17	Give Way Lines			As per Manual
18	Ghost Island			As per Manual
19	Chevron Markings			As per Manual
20	Continuity Line			As per Manual
21	Word Messages			As per Manual
22	Lane Change			As per Manual
23	Merging/Diverging Markings			As per Manual
24	Hatch Markings			As per Manual
25	Raised Profile Edge Lines			As per Manual
26	Lane Reduction/Narrowing Situations and Transitions (lane Balancing)			As per Manual
27	Directional Arrows			As per Manual
28	Mandatory Turn Arrows			As per Manual
29	Guidance Arrows			As per Manual
30	Deflection Arrows			As per Manual
31	Bifurcation Arrows			As per Manual
32	Arrows on Side Road Approaches			As per Manual
33	Arrows on Main Road Approaches			As per Manual
34	Word Messages			As per Manual
35	Yellow Box Markings			As per Manual
36	Diagonal Markings for ramps			As per Manual
37	Marking for Speed Breakers			As per Manual
38	Pedestrian Crossing			As per Manual
39	Markings when highway passes through settlement fig 9.4 of IRC SP 84/87			As per Manual
40	Transverse Bar Markings			Rumble Strips
41	Bus bay Marking			As per Manual
42	Truck Lay-by Markings			As per Manual
43	Toll Plaza Marking		-	As per Manual
44	School Zone Markings			As per Manual
45	Object Markings within Carriageway			As per Manual
46	Objects Markings Adjacent to Carriageway			As per Manual
47	i. Subway Piers, Abutments, Culverts Head Walls, Concrete Barrier			As per Manual
48	ii. Electrical Poles			As per Manual
49	iii. Guard Rails			As per Manual
50	iv. Trees			As per Manual

S. No.	Item	For Main Carriageway		Remarks
		Length/Area	Number	
51	v. Kerbs			As per Manual
52	Directional Markings as per Annexure: A 6 of IRC:35-2015			As per Manual
53	Facility Markings as per Annexure A 6 of IRC:35-2015			As per Manual

Note: The number & locations of the Road Marking mentioned above are minimum and shall be finalized in consultation with Independent Engineer/NHIDCL, as per site requirement.

2.4 Road Delineators: The road delineators shall be provided in accordance with Schedule-D.

S.No.	Item	Number/ Length (m)	Remarks
1	Roadway Indicators	-	On Curves & in Slip Road at underpass
2	Median Marker on Median/ RCC Barrier (Clause 4 of IRC 79)	6313	
3	Object Markers	-	At Intersections, Grade Separators, Bridges & ROB locations
4	Road Delineators	1184	
5	Flexible Object Markers (Clause 6 of IRC 79) i. On Metal Beam Barrier ii. On Toll Booth/Toll Island iii. On Entry/Exit of Tunnel iv. On Exit from Main carriageway		On Thrie Beam Crash Barrier as shown in Typical cross section.
6	Solar Blinkers on Median opening, on exit from main carriageway and traffic island of grade separated intersections.	-	

Note: The number & locations of the Road Delineators/flexible object markers are minimum and shall be finalized in consultation with Independent Engineer/NHIDCL, as per site requirement.

2.5 Reflective Pavement Markers & Solar Studs

The Prismatic Retro-Reflective type conforming to ASTM D-4280 Pavement Markers & Solar Power Studs on Highway shall be provided in accordance with Schedule –D.

S.No.	Item	Number	Location	Remarks
A– For 4 Lane Projects				
1	White Colour one coloured face Road Studs	3989	Traffic lane line & center of carriageway	-
2	Red Colour one coloured face Road Studs	3989	Left hand edge of the carriageway, entry to bus bay, start of service road, chevron/diagonal markings on gorge	
3	Yellow / Amber Colour one coloured face Road Studs	3989	Median side edge line, zebra crossing	

S.No.	Item	Number	Location	Remarks
4	Green Colour one coloured face Road Studs	As per Manual	Lay byes, left hand side of the carriageway in case of multi-lane divided carriageways, crossable continuous line like in acceleration/deceleration lanes involving lane changing	
5	Solar Studs on Major/Minor bridge, RoB, and all structures (Interchange/Flyover/VUP) and Builtup areas, In storage lane of median opening and Exit/Entry from main carriageway	-	NIL	

Note: The number & locations of Studs are minimum and shall be finalized in consultation with Independent Engineer/NHIDCL, as per site requirement.

2.6 Traffic Impact Attenuators: The Traffic Impact Attenuators shall be provided as per Schedule D.

3.

2.6.1 Provide Impact Attenuators in Gore Areas

It shall be self-restoring confirming to section 6 of IRC SP 84 at the following locations.

S.No.	Item	Chainage / Number	Remarks
1	On flyover/grade separated structure at exit from main carriageway	3 Interchanges- At Ch. 54+760, 64+970 & 77+750	As per site requirement
2	Any other location which Safety Hazard -Before Toll Plaza	On the Ramps at 3 Interchanges- At Ch. 54+760, 64+970 & 77+750	As per site requirement

2.6.2 Providing End Terminals

Provide End Terminals confirming to EN 1317 part-2 to Parapet Walls of Culverts, Structures ends for the safety of approaching traffic etc.

S.No.	Item	Chainage / Number	Remarks
	At all bridges as per Sch-B		

2.6 Boundary Wall and Fencing (Clause No. 12.2 IRC-SP-84):

Boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations). Road boundary walls shall be provided at the boundary on both sides of the right of way in entire length for both Cutting & Filling locations available under the control of the Authority in except at ingress and egress points. The boundary walls shall be of reinforced cement concrete as per figure enclosed as Annexure A of Schedule C.

At all CD structure locations, the boundary wall shall be discontinued by turning and joining it with the wing/return wall to allow crossing through these structures during dry seasons.

3. Operation and Maintenance centers-

There shall be operation and maintenance center(s) as per Clause 12.15 of Schedule-D, either near the toll plaza location or at any other location along the Project Highway, as identified by the Concessionaire. The minimum land for O & M center shall be 2000 sq.m and shall be acquired by the Concessionaire at his own cost and risk. Dedicated operation and maintenance center shall be provided in accordance to Schedule C.

4. Wayside Amenities / Service Areas/Rest Area

S.No	Item	Design Chainage (Km)	Side	Remarks
1	Way side amenities	-	BHS	One on each side

The site needs to be levelled/graded/paved for the whole of way side amenities area and boundary wall of the height of 1.5m shall be constructed along the periphery of the area. The Site need to be connected to the Main Road by construction a approach Service Road for both entry & exit.

5. Truck lay-byes:

5.1 The truck lay-bye shall be provided at below given location and as per the design mentioned in Schedule-D.

Sr. No.	Existing Chainage (Km)	Design Chainage (Km)	Side	Remarks
NIL				

5.2 Deleted**5.3 Truck Lay Bye Pavement**

Pavement Composition (Flexible/Rigid/ Paver Blocks)
NIL

6. Bus shelter:

Provision of bus shelter on highways as per IRC 80 including paving of laybye, signs, markings, speed calming measures, drainage, lighting etc., in built-up areas, intersections of NH/SH/MDR and roads leading to large settlements is as follows:

6.1 Bus Shelters locations

Bus shelters shall be constructed at the following locations:

Sr. No.	Chainage (Km)	SIDE
1	Interchange locations on each side	

6.2 Kerb Side Bus Stop with Pedestrian shelter

Kerb Side Bus Stop with Pedestrian shelter shall be provided at the following locations.

Sr. No.	Design (Existing) Chainage (Km)		Pedestrian Shelter Length	Remark
	Left	Right		
NIL				

6.3 Bus Bay Pavement

Flexible Pavement as per Clause-5 of Schedule-B.

7. Pedestrian Facilities

Pedestrian Facilities shall be provided in accordance with the Manual of Specifications and Standards as referred in Clause 9.8 of Schedule D and IRC 103. This shall consist of footpath (sidewalks), pedestrian guard rails and pedestrian crossing.

The details are as mentioned below:

S. No.	Pedestrian Facilities	Chainge		Side	Remarks
		From	To		
1	Pedestrian guardrails shall be 150 mm from Carriageway/Paved Shoulder i. Hazardous Locations on Straight Stretches ii. At Junctions/Intersections iii. Schools iv. Bus Stop/Railway Stations v. Overpass, Subway vi. Central Reserve	Nil			
2	Footpath paving including fixing pavers	Nil			
3	Pedestrian Crossing i. With Zebra Marking ii. With Tabletop Crossing iii. At Intersections iv. At Schools	Nil			

8. Highway Lighting

The street light poles shall be 1 piece, continuous-tapered, Octagonal poles and shall be manufactured from one length of steel sheet, formed in continuous tapered tube, with one continuous arc-welded vertical seam. The minimum wall thickness for lighting poles shall not be less than 4 mm. The Bottom Diameter shall be minimum 175 mm. The Top Diameter shall be minimum 75 mm. The door on window of pole shall be antitheft. All electrical cable should be concealed. All electrical lighting fixers shall be LED. The fixtures shall be concealed except on poles. Lighting poles shall be fixed on outer side of steel/concrete barrier. The lighting shall be providing at the following location having an illumination of min. 40 lux at the extreme edge of Highway. (Drawing Attached as

Annexure A of Schedule C)

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
1	High mast lighting of 25m height (In interchanges and Entry-Exit ramps)	1. 3 Interchanges- At Ch. 54+760, 64+970 & 77+750 2. Ramps Entry-Exit- At Ch. 54.660 Exit, 55.360 Entry, 55.150 Exit, 54.620 Entry. 54.580 Exit, 65.460 Entry, 65.460 Exit, 64.900 Entry. 77.460 Entry, 77.460 Exit, 78.080 Entry & 78.050 Exit 3. At Emergency Lay Bye location 1 no.			Electricity Board/ Generator/ Solar
2	On Major/Minor Bridges, viaducts and Underpasses and its approaches (Both side Over hanged) for main carriageway and service road	46+440	46+560	Both	Electricity Board/ Generator/ Solar
		46+955	46+961	Both	
		46+961	46+969	Both	
		46+969	47+040	Both	
		48+274	48+386	Both	
		48+386	48+570	Both	
		48+570	48+590	Both	
		48+590	48+640	Both	
		49+160	49+214	Both	
		49+214	49+226	Both	
		49+226	49+340	Both	
		50+542	50+572	Both	
		51+060	51+096	Both	
		51+096	51+104	Both	
		51+104	51+140	Both	
		51+450	51+490	Both	
		53+450	53+475	Both	
		54+625	55+024	Both	
		55+024	55+036	Both	
		55+036	55+080	Both	
		56+000	56+010	Both	
		56+560	56+616	Both	
		56+616	56+624	Both	
		56+624	56+720	Both	
		56+975	57+000	Both	
		57+256	57+264	Both	
		57+264	57+320	Both	
		58+680	58+700	Both	
		58+940	58+960	Both	
		60+435	60+445	Both	
61+200	61+215	Both			

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
		61+300	61+310	Both	
		64+594	64+606	Both	
		66+180	66+200	Both	
		66+940	67+000	Both	
		67+000	67+010	Both	
		67+010	67+040	Both	
		67+379	67+391	Both	
		67+520	67+550	Both	
		67+550	67+560	Both	
		67+700	67+740	Both	
		67+740	67+760	Both	
		68+610	68+620	Both	
		69+020	69+310	Both	
		70+025	70+145	Both	
		70+600	70+650	Both	
		70+650	70+687	Both	
		70+687	70+740	Both	
		71+935	71+975	Both	
		72+094	72+106	Both	
		72+220	72+312	Both	
		72+312	72+320	Both	
		72+320	72+360	Both	
		73+234	73+246	Both	
		73+660	73+670	Both	
		73+740	73+780	Both	
		73+780	73+790	Both	
		73+790	73+820	Both	
		73+994	74+006	Both	
		75+905	75+915	Both	
		76+600	76+654	Both	
		76+654	76+666	Both	
		76+666	76+676	Both	
		76+676	76+684	Both	
		76+684	76+700	Both	
		77+420	77+560	Both	
		77+560	77+700	Both	
		77+700	77+730	Both	
		78+220	78+236	Both	
		78+236	78+244	Both	
		78+244	78+280	Both	
		78+474	78+486	Both	

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
3	Grade separated interchanges, underpasses pedestrian overpasses: Lighting requirement shall be as per section 12 of the manual. The top and underside of the grade separated structures including service road/ slip road, interchange area at the ground level up to 50m beyond the point from where flaring of the main carriageway takes place shall be provided with lighting. Also, on all legs of at grade interchange/ crossings the lighting shall be provided 50m beyond the point of Centre on all legs. The minimum illumination shall be 40 Lux., at the extreme edge of the Highway	Ch 54+760, Ch 64+970, Ch 77+750			Electricity Board/ Generator/ Solar

9. Rainwater Harvesting

A minimum 01 (One) Nos of Rainwater harvesting units per km length of the project stretch shall be provided as part of the scope of the project. Location shall be finalized by the Independent Engineer in consultation with the Authority. The Locations and design of stretch (i.e.) diameter/length of recharge shaft etc. shall be based on the rain fall intensity and geo-technical strata and based on enclosed drawing. The guidelines and norms issued by the Central Ground Board may also be adopted while finalizing the location and design of rainwater harvesting units along with requirement given in IRC SP: 42 and IRC SP: 50.

S.No.	Rain water Harvesting Type	Chainage	Side	Depth of Recharge Structure
As Above				

10. Environmental Management Plan

The contractor shall ensure

1. Tree Plantation and Protection

The Contractor shall ensure the plantation of **1,00,000 (one lakh) trees**, each with a **tree guard**, at locations identified in coordination with the Authority or the Independent Engineer.

2. Sanitation and Environmental Management

The Concessionaire/Contractor shall:

- Provide adequate **sanitation arrangements** at the camp site;
- Implement effective **dust suppression measures** throughout the project area;
- Carry out **solid waste management** in accordance with relevant environmental guidelines and regulations.

3. Environmental Monitoring

The Concessionaire/Contractor shall:

- Monitor **Ambient Air Quality, Ambient Noise Levels, Surface Water Quality, and Soil Quality**;
- Engage a **NABL-accredited laboratory** for all environmental monitoring activities;
- Submit environmental monitoring reports to the Authority on a **quarterly basis**, during both the construction and maintenance periods.

11. Land Scaping and Tree Plantation

The Concessionaire shall plant trees and shrubs (as per green Highway Policy) of required numbers and types at the appropriate locations within Right of Way and in the land earmarked by the Authority for compensatory afforestation. The number of trees which are required to be planted by the Concessionaire as compensatory afforestation should be as per Forest Conservation Act of state government.

Sl. No.	Types of Plantations	Location (Km)	Number of trees to be planted	Remarks
1	Shrubs	NIL		
2	Land Scaping	O & M Centers, Vacant land parcels, land within loops of flyovers, Toll Plaza building and surroundings Vacant spaces below the flyovers	Landscaping plans will be submitted by the Concessionaire/Contractor which shall include ornamental trees, decorative statues and landscaping.	The number of Ornamental type plantations and other things shall be decided on the basis availability of land.
3	Plantations	Available open land within ROW towards edge of ROW & Land earmarked by authority for compensatory afforestation	13200/- (Thirteen Thousand two hundred) Trees on both sides of project highway at the edge of ROW @10m c/c in Two Rows. 100000/- (One Lakh) trees for compensatory afforestation	Trees on both sides of project highway at the edge of ROW @10m c/c in Two Rows preferably local like mango, Neem, Sheesham, Babul, Peepal etc. shall be planted

The Concessionaire shall maintain the trees and shrubs in good condition during concession period as per the concession agreement.

12. Advanced Traffic Management System (ATMS)

The Concessionaire is required to design, install, operate and maintain Advanced Traffic

Management System (ATMS) as part of the project facilities. Advanced Traffic Management System shall be provided as per standards and specifications specified in the manual and as per NHAI circular and shall be maintained throughout the contract period. (NHA Policy circular no.11.53/2023 dated 10.10.2023).

The ATMS components to be deployed shall inter alia include:

12.1 General

The ATMS Project shall broadly include the following sub-systems to be provided as per the standards & specifications mentioned in NHAI policy circular technical (NHA Policy circular no.11.53/2023 dated 10.10.2023):

- 12.1.1** Video Surveillance System / Traffic Monitoring Camera System (TMCS)
- 12.1.2** Video Incident Detection and Enforcement System (VIDES)
- 12.1.3** Vehicle Actuated Speed Display System (VASD)
- 12.1.4** Fixed and Portable Variable Message Sign (VMS) System
- 12.1.5** Communication Network with OFC Backbone
- 12.1.6** Emergency Roadside Telephone System (ECB)
- 12.1.7** Emergency Call Box*
- 12.1.8** Mobile Radio Communication System*
- 12.1.9** ATMS Command & Control Center with ATMS Software.
- 12.1.10** Power Supply for Field Equipment as well as for ATMS Command & Control Center.

The requirements stated herein shall be construed as minimum requirement and meeting the respective requirements individually shall not relieve the Concessionaire from the responsibility. The entire system should function efficiently as an integrated solution during the entire O&M period.

12.1.1 Video Surveillance System / Traffic Monitoring Camera System (TMCS)

- (i) The system monitors vehicular and other road related activity along the highway stretch through PTZ Camera mounted on Poles. Generally, the camera should be placed at a distance not greater than 1km so as to effectively monitor all the lanes of the entire stretch of Highway. In case certain stretches include regular curves, ramps etc. not allowing central line of sight, then additional TMCS camera shall be put to ensure effective surveillance of the entire stretch. The TMCS cameras should also be placed on the following Junctions below the Grade Separated Structure.
- (ii) The TMCS should also be provided at the following locations so as to monitor the traffic at the following locations:

Sr. no	Equipment name	Location (Km)	LHS/RHS/BHS	Remarks
1	TMCS+RSU	46+000	Median	Pole Mounted
2	TMCS+RSU	47+000	Median	Pole Mounted

Sr. no	Equipment name	Location (Km)	LHS/RHS/BHS	Remarks
3	TMCS+RSU	48+000	Median	Pole Mounted
4	TMCS+RSU	49+000	Median	Pole Mounted
5	TMCS+RSU	50+000	Median	Pole Mounted
6	TMCS+RSU	51+000	Median	Pole Mounted
7	TMCS+RSU	52+000	Median	Pole Mounted
8	TMCS+RSU	53+000	Median	Pole Mounted
9	TMCS+RSU	54+000	Median	Pole Mounted
10	TMCS+RSU	55+000	Median	Pole Mounted
11	TMCS+RSU	56+000	Median	Pole Mounted
12	TMCS+RSU	57+000	Median	Pole Mounted
13	TMCS+RSU	58+000	Median	Pole Mounted
14	TMCS+RSU	59+000	Median	Pole Mounted
15	TMCS+RSU	60+000	Median	Pole Mounted
16	TMCS+RSU	61+000	Median	Pole Mounted
17	TMCS+RSU	62+000	Median	Pole Mounted
18	TMCS+RSU	63+000	Median	Pole Mounted
19	TMCS+RSU	64+000	Median	Pole Mounted
20	TMCS+RSU	65+000	Median	Pole Mounted
21	TMCS+RSU	66+000	Median	Pole Mounted
22	TMCS+RSU	67+000	Median	Pole Mounted
23	TMCS+RSU	68+000	Median	Pole Mounted
24	TMCS+RSU	69+000	Median	Pole Mounted
25	TMCS+RSU	70+000	Median	Pole Mounted
26	TMCS+RSU	71+000	Median	Pole Mounted
27	TMCS+RSU	72+000	Median	Pole Mounted
28	TMCS+RSU	73+000	Median	Pole Mounted
29	TMCS+RSU	74+000	Median	Pole Mounted
30	TMCS+RSU	75+000	Median	Pole Mounted
31	TMCS+RSU	76+000	Median	Pole Mounted
32	TMCS+RSU	77+000	Median	Pole Mounted
33	TMCS+RSU	78+000	Median	Pole Mounted

12.1.2 Video Incident Detection and Enforcement System (VIDES)

The VIDES include Gantry Mounted ANPR Cameras, Overview Cameras and associated incident detection software system to effectively detect pre-defined actionable incidents which triggers enforcement and incident response system. The VIDES should also act as Automatic Traffic Counting and Classifying (ATCC) system. The VIDES should be provided at following locations:

SI No	Location (Km)	Remarks	Availability of Full Gantry**
1	58+800	BHS	No

2	65+000	BHS	No
3	77+800	BHS	No

** [VIDS system requires full Gantry on both LHS & RHS]

12.1.3 Vehicle Actuated Speed Display (VASD) System

The VASD system shall include gantry mounted Radar and Speed Display system for each lane to warn the road users of their speed. The system shall act as a Speed Calming Measure. VASD System should be provided at following locations along the Expressways:

SI No	Location (Km)	Remarks	Availability of Full Gantry**
1	60+650	BHS VASD on Butterfly type Gantry	No

** [VASD system requires full Gantry on both LHS & RHS]

12.1.4 Fixed and Portable Variable Message Sign (VMS) System

The VMS shall provide road users advance information of road conditions ahead and shall be controlled from the local ATMS Control center. The VMS shall be installed at following locations:

12.1.4.1 Fixed VMS

12.1.4.1.2 Gantry (M Type)

SI No	Location (Km)	Remarks	Availability of Full Gantry**
1	49+775	on VOP	No
2	49+776	on VOP	No

** [VMS system requires full Gantry on both LHS & RHS]

12.1.4.1.2 Cantilever (L Type)

SI No	Location (Km)	Remarks	Availability of Gantry**
1		Nil	

** [VMS system requires full Gantry on both LHS & RHS]

12.1.4.2 Portable VMS

The Concessionaire shall provide 02 (Nos) Trolley Mounted Portable VMS.

12.1.5 Communication Network with OFC Backbone

The entire stretch shall be provided with a minimum of 24 Core OFC Backbone as per the standards & specifications. The short haul connections, like between field equipment to access points, access points to OFC backbone etc., shall be done with a minimum of 12 Core cable. The OFC shall be laid strictly as per the Standards and Specification.

12.1.6 Emergency Roadside Telephone System (ECB)

The existing emergency call box shall be provided as per NHAI Policy circular no.11.53/2023 dated 10.10.2023.

12.1.7 ATMS Command and Control Center

The Concessionaire shall integrate ATMS with existing Control Centre and operate the ATMS

Command and Control Center as per the Standards and Specification. The Concessionaire shall undertake any additional civil works, interior works, MEP works, for setting up the Command Center, including all additional related electrical, lighting, electrical connection, DG set, power backup, HVAC works, access control, building CCTV, PTZ cameras outside building, firefighting system, alarm, fire extinguishers, raised floor, housekeeping, building cleaning, maintenance, recurring charges including electricity bills, telephone bills, DG fuel, servicing, security.

12.1.8 Power Supply for ATMS Command & Control Center and Field Equipment

The Concessionaire shall ensure 24x7 supply for the ATMS Command and Control Centre and Field Equipment with supply power from Electricity Department as primary source supported by UPS renewable power (solar etc.) and DG Set of adequate capacity.

There shall be NO obligation of NHIDCL with regard to providing power/ electricity supply/connections for testing commission, operation & maintenance of any component of the ATMS. Further, the following points are also to be observed by the ATMS Concessionaire:

- a. The Concessionaire shall perform all the necessary application procedures to the Power Company required for the power to be supplied to the Traffic Management Centre, Sub-Centre and the field equipment in their own name. All the expenses charged by Power Companies regarding such applications and execution of work shall be borne by the Concessionaire as part of the scope of this contract. Any damage to the highway during such execution of work shall have to be repaired by the ATMS Concessionaire to the pre-existing condition without any cost implications to NHIDCL.
- b. The Concessionaire shall make all necessary arrangements for the electricity needed for the execution of the Works and O&M period for the entire period of the Contract. In case electricity is not made available through electricity companies, alternate electricity arrangement such as through renewable energy/DG Set should be made by the Concessionaire. Under no circumstances NHIDCL shall grant an extension of time for achieving the milestones if the Concessionaire is unable to make the electricity arrangement either for the execution of the work or for the O&M activities.
- c. The fixed charges, installation charges, recurring charges, electricity bill, DG set fuel, maintenance etc. for each field equipment, TMC, Control Centre, Sub-centre, Concessionaire's site office, or any other facility being used by the Concessionaire under the scope of this Contract shall be in the scope of the Concessionaire only for the entire Contract period i.e., Design phase, procurement, installation, testing, trial-run, commissioning, operations, and maintenance period. The Authority shall not be responsible for any provision for power supply during implementation as well as operations and maintenance period.

12.1.9 Operation & Maintenance (O&M) of the entire ATMS Facility.

- a. The O&M period after the successful completion of works shall include Operation & Maintenance of the entire ATMS Facility as per the Service Level Agreement (SLA) with Qualified Manpower mentioned in Standards & Specifications including supply of adequate spares, parts, consumables and maintenance equipment required for the facility. The Concessionaire shall maintain required spare parts to maintain required

service levels.

- b. The Concessionaire shall have sufficient infrastructure and capability to keep/store spares required for maintenances and will at all times during the contract period maintain sufficient inventory of spares and consumables for operating and maintaining the ATMS and to meet the Service Level requirements.
- c. Before the start of O&M Period, the Concessionaire shall deploy the O&M Personal mentioned at Appendix-C of Standards & Specification (NHAI Policy circular no. 11.53/2023 dated 10.10.2023) with prior approval of the Authority.

12.1.10 Maintenance Vehicle-The Concessionaire shall keep adequate numbers of dedicated vehicles (minimum 1 vehicle per 50km) to attend the maintenance requirement during the Operation & Maintenance period.

13. Highway Patrol Units

Highway Patrol units shall be established and operate at toll plaza location as per Schedule-D Clause 12.10, which shall continuously patrol the highway in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of patrol vehicle per 50 km or less shall be provided). The vehicle shall be brand new with fuel, driver, and insurance all inclusive for the entire contract period. Highway Patrol units shall be fitted with GPS and GSM based vehicle tracker system. Highway Patrol Vehicles shall be stationed on layby constructed on Project Highway @ every 20 km of each Toll Plaza.

14. Emergency medical services

The Contractor shall, at its own cost, construct a medical aid post at each toll plaza with a minimum size of 5 x 5 sq.m with a toilet (to be used for the patients of minimum size of 3 x3 sq.m) and hand it over to the Authority, no later than 30 (thirty) days prior to PCOD/COD. The Medical Aid Post(s) shall be deemed to be part of the project and shall vest in the Authority. Medical Aid Post shall be set up at Administrative Block with round-the-clock services for victims of accidents on the Project Highway.

One number Ambulance shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of ambulances per 50 km or less shall be provided). The Ambulance shall be brand new with fuel, driver, medical staff and insurance all-inclusive for the entire contract period. Ambulance fitted with GPS and GSM based vehicle tracker system shall be provided to be integrated with the Video Incident Detection System with ATMS, as per Schedule - D, Clause 12. 11 (strictly as per details mentioned in Annex-I of Schedule D), along with all necessary manpower (including paramedical staff), medicines, equipment's etc. and shall be maintained in an effective manner throughout the contract period starting from the appointed date. Ambulance shall be stationed on lay by constructed on Project Highway@ every 20 km of each Toll Plaza.

15. Crane Service:

Crane Service shall be provided on project highway, as specified in the manual Clause 12. 1One number crane shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of cranes per 50 km or less shall be provided). Crane having capacity of minimum 20T shall be made available. The crane shall be brand new with fuel, driver, and insurance all-inclusive for the entire contract period. Cranes shall be stationed on layby constructed on Project Highway@ every 20 km of each Toll Plaza.

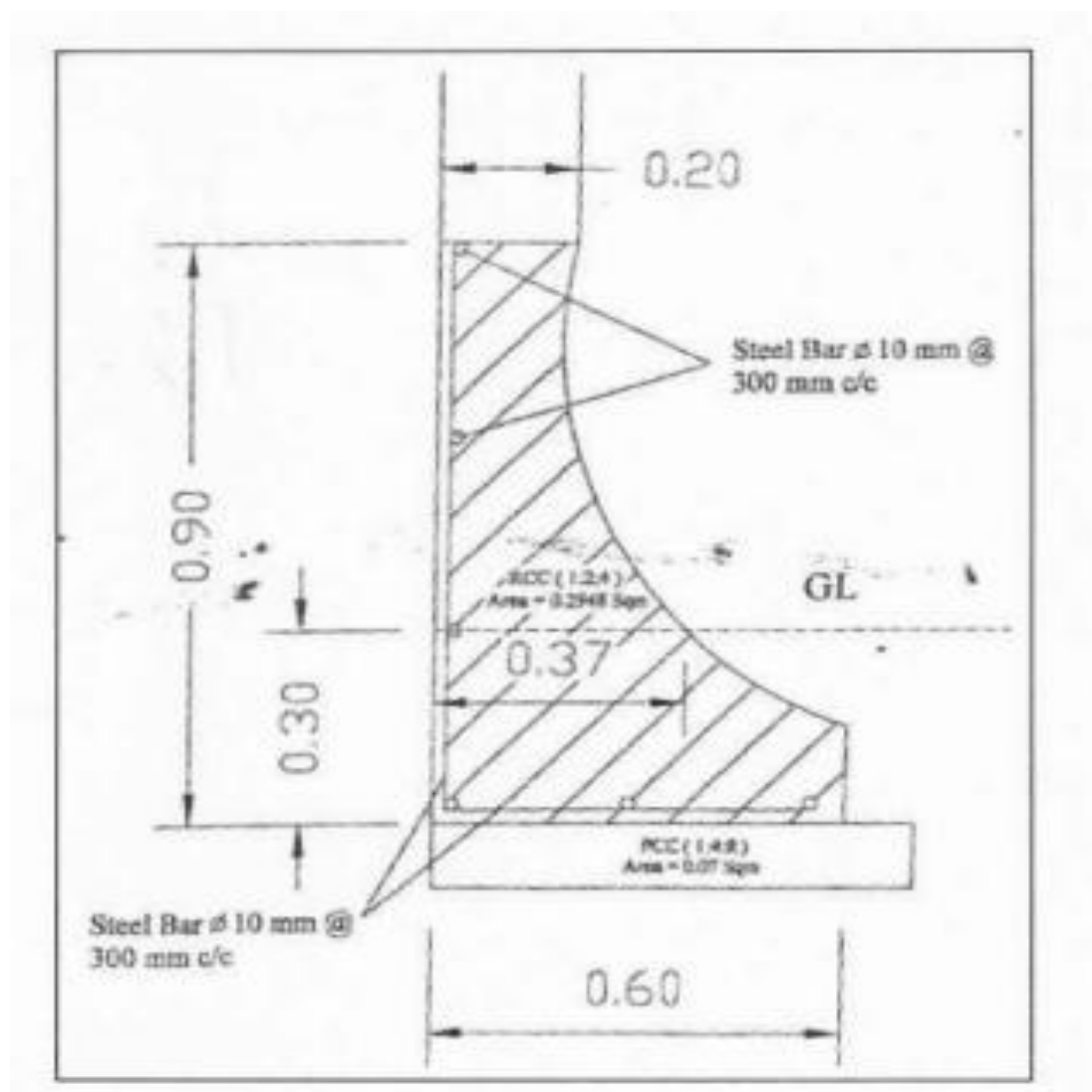
16. Buildings for Traffic Aid Posts

Nil.

17. Building for Medical Aid Post

Nil.

Annexure-A Schedule C Typical Drawing for Boundary Wall



Street Light



SCHEDULE – D
(See Clause 2.1)
SPECIFICATIONS AND STANDARDS

1. Specification and Standards for the Project

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

2. Design Standards

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

Manual of Specifications and Standards for Four laning of Highways through IRC SP: 84, referred to herein as the manual.

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

Annex - I

(Schedule-D)

SPECIFICATIONS AND STANDARDS

1 Manual of Specifications and Standards to apply

Four laning of the Project Highway shall conform to the 'Manual of Specifications and Standards for Four Laning of Highways' published as IRC: SP: 84 with all amendments and additions until date. (Referred to as "Manuals" in this Schedule) and MORTH Specifications for Road & Bridge Works (5th revision). Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Independent Engineer.

2 Deviations from the Specifications and Standards

- 2.1 Notwithstanding anything to the contrary contained in the aforesaid Manual, the following Specifications and Standards shall apply to the Four-Lane Project Highway, and for purposes of this Agreement, the aforesaid Manual shall deemed to be amended to the extent set forth below:

S. No.	Clause as per Manual	Manual Provision	Modified Provision
1	2.2	Design Speed as per Table 2.1 is 40-60 Kmph for Mountainous terrain	Ruling Design Speed is 80 Kmph
2	6.2.2 of IRC-92	Desirable design speed for loops/ramps	As per IRC 92
3	2.3	A minimum Right of Way (ROW) of 45 m should be available for development of a 4-lane highway	As per manual. The proposed Right of Way (PROW) shall be as specified in Annex-II of Schedule-A.
4	2.5	Table 2.2 – Width of Median is 5m in Built Up and 7.0 m Depressed Median in Open country with isolated built-up area	Flushed Median of Width 5.0m (with turfing on both side of the Median Drain).
5	2.6	- Built up area – 2.5m Paved Shoulders - Approaches to grade separated structures – 2.5m Paved.	Width of Paved and Earthen Shoulders is as per TCS Drawing attached.
6	2.17	Typical cross-sections	The typical cross sections are not as per manual.

S. No.	Clause as per Manual	Manual Provision	Modified Provision
7	6.2	Surface Drains	RCC drain of 1.2 m width is provisioned along approaches of grade separated structures, extension of slip road, hillside cutting location and built-up sections. Unlined Side Drains are provided throughout the Project on either side except at approaches of Grade Separators, built up sections.
8	12	Project Facilities	The project facilities and building structures shall be provided in accordance with Schedule-C and Schedule D.
9	12.2	Road Boundary Wall/ Road Boundary stones walls shall be provided at the boundary on both sides of the right of way available under the control of the Authority, except at ingress and egress points.	Road Boundary wall is provisioned on both sides of the ROW as per Morth Circular RW/NH-24036/27/2010-PPP, Dated 04.02.2019.).
10	Section 11 of Manual	Landscaping and Tree Plantation As per Section 11 of Manual	Specifications for plantations shall be followed as per IRC:SP:21 i.e. Guidelines on Landscaping and Tree Plantation and as per circular no. 7.4.7/2022 dated 12.07.2022, 7.4.8/2022 dated 06.10.2022 & 7.4.16/2024 dated 19.12.2024.
11	9.7.1	Roadside safety barriers	Thrie-beam metal crash barriers shall be provided in the entire length as shown in TCS drawings in median and outer edge loops/ramps etc.
12	Section 12	Project Facilities	The project facilities and building structures shall be constructed in accordance to Annex I of Schedule-C.

- 2.2 MoRT&H circular no. RW/NH-34066/09/2017 S&R dated 21.07.2020 (regarding use of manufactured aggregates) shall be applicable on the project.
- 2.3 The Concessionaire is permitted to use waste plastic as per IRC: 98 and Ministry's circulars dated 26.11.2019, 27.08.2019, 27.12.2016 & 09.11.2015 in consultation with IE.
- 2.4 As regards the work of Utility Shifting/relocation, the relevant specifications, rules, regulations and acts of Utility Owning Department/Agencies shall be applicable.
- 2.5 For specification for landscaping/tree plantation NHAI policy circular no. 7.4.7/2022 dated 12.07.2022, 7.4.8/2022 dated 06.10.2022 & 7.4.16/2024 dated 19.12.2024 will be applicable.
- 2.6 Concessionaire is encouraged to do value engineering in line with MoRT&H circular dated 30.08.2022 & amendments thereof with prior approval from independent Engineer & Authority.

3. Adoption of Machine Guidance & Control System

The concessionaire/contractor shall, at its own cost and expense adopt Automated & Intelligent Machine aided Construction (AI-MC) for execution of the project in line with MoRTH circular No. RW/NH-33044/31/2024-S&R(P&B)(Computer No. 245397) dt. 23.06.2025.

SPECIFICATIONS AND STANDARDS FOR 3D DIGITAL MODELS AND 3D MACHINE GUIDANCE AND CONTROL SYSTEM

Machine Guidance & Control System (MGCS) is a technology that is applied to highway construction projects to provide construction efficiencies through enhanced location referencing. MGCS involves using construction equipment mounted with on-board computers. Using a combination of 3D modelling data along with global navigation satellite system (GNSS) technology. MGCS assists agencies and contractors in finishing project in less time and with lower overall cost while providing higher quality and safety. Using MGCS, equipment have the potential to achieve designed grades on the first pass, reducing cost and taken compared with traditional staking.

Contractor/concessionaire should use 3D digital models and 3D Machine guidance and control systems for Motors Graders, Compactors and Pavers for productivity improvement and ensuring quality standards as per IRC specification. Further, contractor should generate measurable digital records that can be shared on a digital drive or can viewed in real time. The hardware and software used by the contractor should have following features and specifications:

A. Office Software for Preparing design data for Field System and Processing Results:

A contractor/concessionaire should use office software for preparing design data which will be able to generate 3D constructible models out of provided design that can be carried in construction grade survey instruments and 3D Machine control tools for construction purpose. The office software should be able to generate Triangulated Surface models, 3D linework and should have ability to overlay machine guidance as-built record and generate reports.

B. 3D Machine Control System for Motor Grader for Accurate grading to design.

A contractor/concessionaire should utilize motor grader controlled with GNSS Machine Control System in the construction of Subgrade & GSB Surface Grades. The requirement includes the finishing of final subgrade & GSB surface as per the IRC Specification Clause 902.

The contractor may use type of GNSS Machine Control system that result in achieving the finished grading requirements.

The 3D Machine guidance and control system should be able to control the depth of the motor grader blade in relation to the 3D model during the grading process. The 3D machine control systems should have dual mast GPS system for earthworks and GPS/Universal Robotic Total Station system for pavements/GSB. Sonic sensors and/or laser-based systems will not be acceptable. Swapping between GPS and Total Station should be achieved by changing the target and loading a configuration file on the machine control system box.

C. 3D Machine Control System for Pavers

A contractor/concessionaire should utilize Paving equipment controlled with Universal Robotics Total Station and Machine control system in the construction of roadway pavement. The requirement includes the finishing of final pavement surface as per the IRC Specification Clause 902.

Every Paver should be equipped with 3D Machine guidance and system for automatic control of elevation and slope of the screed in relation to the 3D model for accurate paving.

The 3D machine guidance system should be guided by a Universal Robotics Total Station. A sonic sensor can be used for joint matching to existing paved areas. The Universal Robotics Total Station needs to be a 1" Angular accuracy instrument, incorporate send synchronized corrections at 20Hz for accurate blade positioning and support multitrack technology via active prisms to avoid the wrong target being tracked in the field. The solution needs to support the ability to hot swap, or instantly transition to the next universal Robotics Total Station without stopping the paver.

D. Compaction Control System for Pass Counts and Temperature

The compaction control system on Compactor should allow operator to monitor the number of passes completed in real time for every layer of soil, GSB or asphalt to achieve a target pass count. In addition to this, the operator needs to be able to monitor the temperature of the asphalt during the compaction process. Pass counts for all layers and temperature values in asphalt layer must be stored to prove that targets have been met.

E. File transfer between field and office

Productivity monitoring software should have the ability to send design updates to the field and ensure all crews are working from the same design. It is also important that all field data be sent back to the office for later use in the validation process.

It is essential that surface elevation information recorded on machines along with compaction information like pass counts or temperature maps can be seen in the office.

F. Monitoring of Construction

During the construction period, the concessionaire/consultant shall furnish all the physical Process Data (All type Surface Grading Data, Compaction Data) obtained through Machine Control and Guidance System to Authority for monitoring of construction on daily bases.

4. Mandatory use of Precast Concrete Components

The concessionaire/contractor shall, use Precast Concrete Components in line with MoRTH circular No. RW/NH-33049/01/2020-S&R(B) (Computer No. 182692) dt. 24.06.2025.