

**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-3: From Km 78+600 to Km 133+320,
Design Length – 54.720 Km)**

TECHNICAL SCHEDULES (A to D)

June, 2026

Bian
K
Page

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.

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Page

**Annex – I
(Schedule-A)**

Site for Four Laning

1. Site

The Site of the [Four-Lane] Project Highway starts from Design Chainage 78+600 near Dkhiah West Village in East Jaintia Hills District in Meghalaya and terminates at Design Chainage 133+320 near Kuliang Village in East Jaintia Hills District in Meghalaya. The total design length of the project alignment is 54.720 km in the State of Meghalaya.

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	-	-	78+600	133+320	Proposed alignment for PKG-3 (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-3 (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-3 (Entire Length Greenfield)						

4. Major Bridges-

The site includes the following major bridge:

Main Carriageway

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

Cross Road/Approach Road

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)
Nil					

Cross Road/Approach Road

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Span arrangement (No. x Span) (m)	Width (m)
1.		0+080 (Cross Road-3 Near Ch. 128+400 of Main carriageway)	RCC Slab Bridge	1x11.0	7.50

8. Railway Line / Level Crossings

The Site includes the following Railway Line / Level Crossing:

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:

Main Carriageway

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

Cross Road/Approach Road

S. No.	Existing Chainage (km)	Design Chainage (km)	Type of Structure	Span arrangement (No. x Span) (m)	Width (m)
1.		0+050 (Cross Road-1 Near Ch. 122+800 of Main carriageway)	HPC	1x1.10	-
2.		8+820 (Cross Road-2 Near Ch. 127+750 of Main carriageway)	HPC	1x1.10	-
3.		13+850 (Cross Road-5 Near Ch. 130+100 of Main carriageway)	HPC	1x1.10	-
4.		14+125 (Cross Road-3 Near Ch. 130+350 of Main carriageway)	HPC	1x1.10	-

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 – 01 Cross Road/Approach Road
- (f) No. of Culverts – 04 Cross Road/Approach Road
- (g) Toll Plaza – Nil

13. Bus bays/Bus shelters and Truck lay-byes

The location of existing Bus bays/Bus shelters and 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/ Right/ Both)	Type of Junction	Category of Road	Remarks
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)

S. No.	Design Chainage (m)	Crossings						Remarks	Authority
		765KV	400KV	500KV	230KV	132KV	110KV		
1	79+365					1		Towers outside ROW. Requisite vertical clearance available	MePTCL
2	82+140		1					Towers outside ROW. Requisite vertical clearance available	NETCL
3	83+810					1		Towers outside ROW. Requisite vertical clearance available	MePTCL
4	84+720					1		Towers outside ROW. Requisite vertical clearance available	MePTCL

- SC – Single Circuit, DC – Double Circuit

Note: Shutdown charges, supervision charges, land charges shall be borne by the Authority.

(b) Low Tension Lines (LT Lines)

Main Carriageway

S. No.	Design Chainage	Length (in Km)			LT (UG)	Crossings			Transformer (63 KV/ 100 KV/ 200KV) No.
		33 KV	11 KV	LT		33 KV	11 KV	LT	
1	78+900	-	-	-	-	-	1	-	-
2	83+380 to 83+650	-	0.27	-	-	-	1	-	-
3	84+550	-	-	-	-	-	1	-	-
4	84+800	-	-	-	-	1	-	-	-
5	84+810	-	-	-	-	-	1	-	-
6	85+700 to 86+300	-	0.60	-	-	-	1	-	-
7	85+800	-	-	-	-	1	-	-	-
8	88+900	-	-	-	-	1	-	-	-
9	90+140 to 90+500	-	0.35	-	-	-	2	-	-
10	94+200 to 94+820	-	0.62	-	-	-	1	-	-
11	96+820 to 98+150	-	1.33	-	-	-	2	-	-
12	131+700	-	-	-	-	1	-	-	-

Note: Shutdown charges, supervision charges, land charges shall be borne by the Authority.

20. Water Pipeline Utilities

The site includes the following water pipeline utilities:

S. No.	Design Chainage (m)	Length (m)	Dia. (mm)	Type of pipe	Crossings (Nos.)
1	80+150		350	DI	1
2	81+000		200	DI	1
3	81+000		100	DI	1
4	83+340 to 84+100	760	350	DI	1
5	83+340 to 84+100	760	250	DI	1

S. No.	Design Chainage (m)	Length (m)	Dia. (mm)	Type of pipe	Crossings (Nos.)
6	83+340 to 84+100	760	80	GI	1
7	84+250 to 84+580	330	200	DI	1
8	84+560		350	DI	1
9	84+560		150	DI	1
10	84+560		80	GI	1
11	85+900		80	GI	1
12	85+900		150	DI	1
13	94+400 to 94+600	200	150	DI	1
14	95+850		50	GI	1
15	97+100 to 97+250	150	150	Di	1
16	121+880		100	DI	1
17	121+880		15	GI	1
18	122+190		50	GI	1
19	122+400 to 122+600	200	40	GI	1
20	122+400 to 122+600	200	25	GI	1
21	122+400 to 122+600	200	15	GI	1
22	122+460 to 122+610	150	15	GI	1
23	122+650 to 122+900	250	150	DI	1
24	130+700 to 131+000	300	15	GI	1

Note: Shutdown charges, Supervision charges, land charges shall be borne by the Authority.

21. IGGL

The site includes the following gas pipeline utilities:

S. No.	Design Chainage (km)		Length (m)	Dia (mm)	Type of pipe	Crossings (Nos.)
	From	To				
1	82+430	82+665		458	CAST STEEL	1

Note: Shutdown charges, Supervision charges, land charges shall be borne by the Authority.

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:

SI. 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

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
1	78+600	78+750	150	24	28	52
2	78+750	79+050	300	27	28	55
3	79+050	79+170	120	37	35	72
4	79+170	79+490	320	27	35	62
5	79+490	79+550	60	22.5	22.5	45
6	79+550	79+610	60	34	41	75
7	79+610	79+730	120	25	28	53
8	79+730	80+030	300	34	35	69
9	80+030	80+550	520	25	35	60
10	80+550	80+650	100	30	35	65
11	80+650	80+830	180	22.5	22.5	45
12	80+830	81+010	180	37	35	72

Development, Maintenance, Management & 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-3: From Km 78+600 to Km 133+320, Design Length-54.720 Km)

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
13	81+010	81+160	150	40	38	78
14	81+160	81+260	100	36	38	74
15	81+260	81+380	120	30	30	60
16	81+380	81+610	230	26	36	62
17	81+610	81+820	210	37	26	63
18	81+820	81+890	70	22.5	22.5	45
19	81+890	82+320	430	38	31	69
20	82+320	82+460	140	30	32	62
21	82+460	82+630	170	22.5	22.5	45
22	82+630	82+760	130	34	34	68
23	82+760	83+100	340	30	34	64
24	83+100	83+380	280	35	30	65
25	83+380	83+550	170	28	30	58
26	83+550	83+760	210	33	43	76
27	83+760	83+910	150	22.5	22.5	45
28	83+910	84+420	510	35	38	73
29	84+420	84+580	160	40	45	85
30	84+580	84+710	130	31	45	76
31	84+710	84+820	110	40	40	80
32	84+820	85+060	240	30	26	56
33	85+060	85+150	90	38	78	116
34	85+150	85+260	110	52	78	130
35	85+260	85+390	130	24	30	54
36	85+390	85+600	210	30	34	64
37	85+600	85+690	90	22	30	52
38	85+690	86+020	330	29	26	55
39	86+020	86+120	100	22	23	45
40	86+120	86+200	80	48	23	71
41	86+200	86+670	470	27	30	57
42	86+670	86+850	180	30	34	64
43	86+850	87+160	310	36	36	72
44	87+160	87+340	180	32	45	77
45	87+340	87+440	100	36	57	93
46	87+440	87+580	140	42	68	110
47	87+580	87+920	340	30	46	76
48	87+920	88+140	220	23	49	72
49	88+140	88+260	120	37	30	67
50	88+260	88+900	640	22.5	22.5	45
51	88+900	89+100	200	42	36	78
52	89+100	89+440	340	36	47	83
53	89+440	89+640	200	28	30	58

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
54	89+640	89+740	100	43	26	69
55	89+740	89+860	120	36	26	62
56	89+860	90+000	140	22.5	22.5	45
57	90+000	90+180	180	47	30	77
58	90+180	90+340	160	81	65	146
59	90+340	90+460	120	75	65	140
60	90+460	91+000	540	63	65	128
61	91+000	91+080	80	63	65	128
62	91+080	91+380	300	54	63	117
63	91+380	91+520	140	45	48	93
64	91+520	91+940	420	22.5	22.5	45
65	91+940	92+020	80	58	40	98
66	92+020	92+100	80	35	26	61
67	92+100	92+240	140	28	26	54
68	92+240	92+340	100	54	26	80
69	92+340	92+580	240	44	42	86
70	92+580	92+740	160	38	30	68
71	92+740	92+840	100	30	48	78
72	92+840	92+940	100	38	38	76
73	92+940	93+080	140	62	74	136
74	93+080	93+210	130	30	74	104
75	93+210	93+340	130	30	30	60
76	93+340	93+480	140	22.5	22.5	45
77	93+480	93+580	100	35	64	99
78	93+580	93+720	140	27	64	91
79	93+720	93+820	100	35	34	69
80	93+820	94+020	200	50	28	78
81	94+020	94+120	100	31	35	66
82	94+120	94+240	120	52	27	79
83	94+240	94+520	280	35	36	71
84	94+520	94+600	80	48	45	93
85	94+600	94+800	200	32	36	68
86	94+800	94+900	100	35	28	63
87	94+900	95+000	100	46	60	106
88	95+000	95+100	100	31	42	73
89	95+100	95+240	140	45	42	87
90	95+240	95+420	180	39	66	105
91	95+420	95+540	120	63	82	145
92	95+540	95+640	100	52	56	108
93	95+640	95+860	220	61	56	117
94	95+860	96+010	150	38	60	98

Development, Maintenance, Management & 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-3: From Km 78+600 to Km 133+320, Design Length-54.720 Km)

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
95	96+010	96+170	160	34	34	68
96	96+170	96+610	440	27	29	56
97	96+610	96+710	100	22.5	22.5	45
98	96+710	96+830	120	30	29	59
99	96+830	97+010	180	40	29	69
100	97+010	97+110	100	53	29	82
101	97+110	97+230	120	28	29	57
102	97+230	97+330	100	45	34	79
103	97+330	97+490	160	39	30	69
104	97+490	97+750	260	27	30	57
105	97+750	97+850	100	35	38	73
106	97+850	98+180	330	29	38	67
107	98+180	98+400	220	33	28	61
108	98+400	98+960	560	22.5	22.5	45
109	98+960	99+080	120	29	53	82
110	99+080	99+180	100	70	60	130
111	99+180	99+340	160	55	60	115
112	99+340	99+580	240	37	90	127
113	99+580	99+680	100	52	38	90
114	99+680	99+780	100	76	50	126
115	99+780	99+900	120	67	37	104
116	99+900	100+040	140	29	27	56
117	100+040	100+260	220	22.5	22.5	45
118	100+260	100+340	80	30	28	58
119	100+340	100+620	280	26	28	54
120	100+620	100+800	180	30	28	58
121	100+800	100+900	100	41	37	78
122	100+900	101+040	140	30	28	58
123	101+040	101+280	240	26	34	60
124	101+280	101+420	140	34	84	118
125	101+420	101+660	240	37	97	134
126	101+660	101+760	100	57	37	94
127	101+760	101+860	100	30	37	67
128	101+860	101+960	100	35	93	128
129	101+960	102+240	280	30	74	104
130	102+240	102+360	120	37	70	107
131	102+360	102+440	80	28	40	68
132	102+440	102+540	100	68	35	103
133	102+540	102+700	160	38	24	62
134	102+700	102+760	60	67	32	99
135	102+760	103+000	240	36	58	94

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S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
136	103+000	103+160	160	30	36	66
137	103+160	103+260	100	35	28	63
138	103+260	103+580	320	30	34	64
139	103+580	103+720	140	36	47	83
140	103+720	103+820	100	28	55	83
141	103+820	103+880	60	35	37	72
142	103+880	104+480	600	30	28	58
143	104+480	104+780	300	45	42	87
144	104+780	104+880	100	30	30	60
145	104+880	104+940	60	58	66	124
146	104+940	105+000	60	40	66	106
147	105+000	105+260	260	45	25	70
148	105+260	105+380	120	38	25	63
149	105+380	105+460	80	48	35	83
150	105+460	105+620	160	50	66	116
151	105+620	105+860	240	22.5	22.5	45
152	105+860	105+960	100	31	38	69
153	105+960	106+040	80	22.5	22.5	45
154	106+040	106+180	140	26	28	54
155	106+180	106+400	220	39	32	71
156	106+400	106+480	80	27	36	63
157	106+480	106+600	120	34	62	96
158	106+600	106+700	100	40	62	102
159	106+700	106+800	100	28	62	90
160	106+800	107+000	200	25	37	62
161	107+000	107+080	80	30	25	55
162	107+080	107+380	300	35	25	60
163	107+380	107+600	220	57	92	149
164	107+600	107+760	160	47	62	109
165	107+760	107+940	180	39	38	77
166	107+940	108+100	160	33	30	63
167	108+100	108+840	740	22.5	22.5	45
168	108+840	109+100	260	30	26	56
169	109+100	109+240	140	34	39	73
170	109+240	109+380	140	29	55	84
171	109+380	109+850	470	22.5	22.5	45
172	109+850	110+020	170	42	44	86
173	110+020	110+140	120	38	76	114
174	110+140	110+240	100	43	88	131
175	110+240	110+380	140	38	63	101
176	110+380	110+440	60	47	143	190

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S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
177	110+440	110+540	100	34	93	127
178	110+540	110+620	80	46	110	156
179	110+620	110+760	140	34	110	144
180	110+760	110+880	120	29	85	114
181	110+880	111+020	140	36	30	66
182	111+020	111+120	100	32	37	69
183	111+120	111+210	90	22.5	22.5	45
184	111+210	111+320	110	43	74	117
185	111+320	111+500	180	30	52	82
186	111+500	111+770	270	22.5	22.5	45
187	111+770	111+880	110	28	48	76
188	111+880	111+960	80	67	79	146
189	111+960	112+060	100	35	53	88
190	112+060	112+460	400	22.5	22.5	45
191	112+460	112+520	60	37	61	98
192	112+520	112+620	100	68	61	129
193	112+620	112+780	160	34	29	63
194	112+780	112+860	80	42	104	146
195	112+860	112+980	120	22.5	22.5	45
196	112+980	113+280	300	39	32	71
197	113+280	113+580	300	30	108	138
198	113+580	113+700	120	43	80	123
199	113+700	113+800	100	22.5	22.5	45
200	113+800	113+880	80	117	29	146
201	113+880	113+960	80	99	36	135
202	113+960	114+280	320	22.5	22.5	45
203	114+280	114+420	140	54	120	174
204	114+420	114+660	240	22.5	22.5	45
205	114+660	114+760	100	36	45	81
206	114+760	114+920	160	22.5	22.5	45
207	114+920	115+020	100	39	39	78
208	115+020	115+180	160	30	39	69
209	115+180	115+540	360	22.5	22.5	45
210	115+540	115+680	140	36	30	66
211	115+680	116+380	700	22.5	22.5	45
212	116+380	116+480	100	56	22.5	78.5
213	116+480	116+580	100	44	22.5	66.5
214	116+580	117+020	440	22.5	22.5	45
215	117+020	117+280	260	63	90	153
216	117+280	117+380	100	46	64	110
217	117+380	117+480	100	36	34	70

Development, Maintenance, Management & 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-3: From Km 78+600 to Km 133+320, Design Length-54.720 Km)

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
218	117+480	118+340	860	22.5	22.5	45
219	118+340	118+420	80	59	62	121
220	118+420	118+560	140	110	62	172
221	118+560	118+640	80	59	35	94
222	118+640	118+840	200	22.5	22.5	45
223	118+840	118+980	140	37	36	73
224	118+980	119+060	80	64	36	100
225	119+060	119+300	240	91	32	123
226	119+300	119+420	120	61	32	93
227	119+420	119+520	100	66	67	133
228	119+520	119+620	100	83	45	128
229	119+620	119+720	100	46	29	75
230	119+720	119+820	100	22.5	22.5	45
231	119+820	119+980	160	66	36	102
232	119+980	120+320	340	22.5	22.5	45
233	120+320	120+700	380	36	29	65
234	120+700	120+920	220	30	80	110
235	120+920	121+080	160	44	73	117
236	121+080	121+180	100	22.5	22.5	45
237	121+180	121+240	60	34	30	64
238	121+240	121+400	160	55	30	85
239	121+400	121+520	120	30	83	113
240	121+520	121+680	160	46	35	81
241	121+680	121+840	160	22.5	22.5	45
242	121+840	121+920	80	44	36	80
243	121+920	122+220	300	22.5	22.5	45
244	122+220	122+300	80	49	37	86
245	122+300	122+400	100	39	52	91
246	122+400	122+680	280	22.5	22.5	45
247	122+680	122+780	100	36	65	101
248	122+780	123+000	220	30	75	105
249	123+000	123+100	100	37	30	67
250	123+100	123+240	140	30	34	64
251	123+240	123+540	300	45	27	72
252	123+540	123+820	280	30	29	59
253	123+820	123+940	120	47	29	76
254	123+940	124+160	220	38	35	73
255	124+160	124+480	320	36	36	72
256	124+480	124+580	100	22.5	22.5	45
257	124+580	124+640	60	50	44	94
258	124+640	124+780	140	70	27	97

Development, Maintenance, Management & 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-3: From Km 78+600 to Km 133+320, Design Length-54.720 Km)

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
259	124+780	124+940	160	48	44	92
260	124+940	125+040	100	30	26	56
261	125+040	125+160	120	22.5	22.5	45
262	125+160	125+280	120	34	42	76
263	125+280	125+420	140	59	29	88
264	125+420	125+560	140	28	43	71
265	125+560	125+640	80	22.5	22.5	45
266	125+640	125+740	100	45	40	85
267	125+740	125+800	60	22.5	22.5	45
268	125+800	125+880	80	46	34	80
269	125+880	126+200	320	22.5	22.5	45
270	126+200	126+340	140	40	36	76
271	126+340	126+480	140	56	36	92
272	126+480	126+580	100	36	44	80
273	126+580	126+660	80	49	35	84
274	126+660	126+780	120	80	46	126
275	126+780	126+840	60	22.5	30	52.5
276	126+840	126+940	100	43	30	73
277	126+940	127+060	120	36	110	146
278	127+060	127+160	100	54	41	95
279	127+160	127+280	120	43	64	107
280	127+280	127+460	180	22.5	22.5	45
281	127+460	127+600	140	38	22.5	60.5
282	127+600	127+700	100	31	34	65
283	127+700	127+880	180	72	34	106
284	127+880	128+310	430	22.5	22.5	45
285	128+310	128+400	90	30	52	82
286	128+400	128+500	100	46	52	98
287	128+500	128+700	200	81	67	148
288	128+700	128+820	120	62	77	139
289	128+820	128+920	100	72	36	108
290	128+920	128+980	60	31	29	60
291	128+980	129+120	140	22.5	22.5	45
292	129+120	129+280	160	49	84	133
293	129+280	129+330	50	75	54	129
294	129+330	129+500	170	54	54	108
295	129+500	129+580	80	34	49	83
296	129+580	129+880	300	22.5	22.5	45
297	129+880	129+980	100	32	77	109
298	129+980	130+060	80	36	77	113
299	130+060	130+160	100	22.5	22.5	45

Development, Maintenance, Management & 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-3: From Km 78+600 to Km 133+320, Design Length-54.720 Km)

S. No.	Design Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
300	130+160	130+220	60	56	62	118
301	130+220	130+360	140	99	62	161
302	130+360	130+420	60	56	35	91
303	130+420	130+520	100	22.5	22.5	45
304	130+520	130+620	100	55	49	104
305	130+620	130+760	140	82	72	154
306	130+760	130+860	100	67	105	172
307	130+860	131+000	140	36	105	141
308	131+000	131+140	140	40	68	108
309	131+140	131+580	440	22.5	22.5	45
310	131+580	131+660	80	42	36	78
311	131+660	131+720	60	89	36	125
312	131+720	131+820	100	57	30	87
313	131+820	131+920	100	130	30	160
314	131+920	132+040	120	57	38	95
315	132+040	132+280	240	22.5	22.5	45
316	132+280	132+440	160	36	31	67
317	132+440	132+500	60	49	59	108
318	132+500	132+600	100	28	34	62
319	132+600	132+720	120	47	59	106
320	132+720	132+840	120	93	59	152
321	132+840	132+940	100	56	48	104
322	132+940	133+060	120	30	32	62
323	133+060	133+160	100	37	32	69
324	133+160	133+300	140	28	32	60
325	133+300	133+320	20	48	63	111

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 & locations 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.

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Page

ANNEX-IV

(Schedule-A)

ENVIRONMENTAL CLEARANCES

Environmental Clearance : Not Applicable

Forest Clearance : **Deemed Forest identification under progress.**

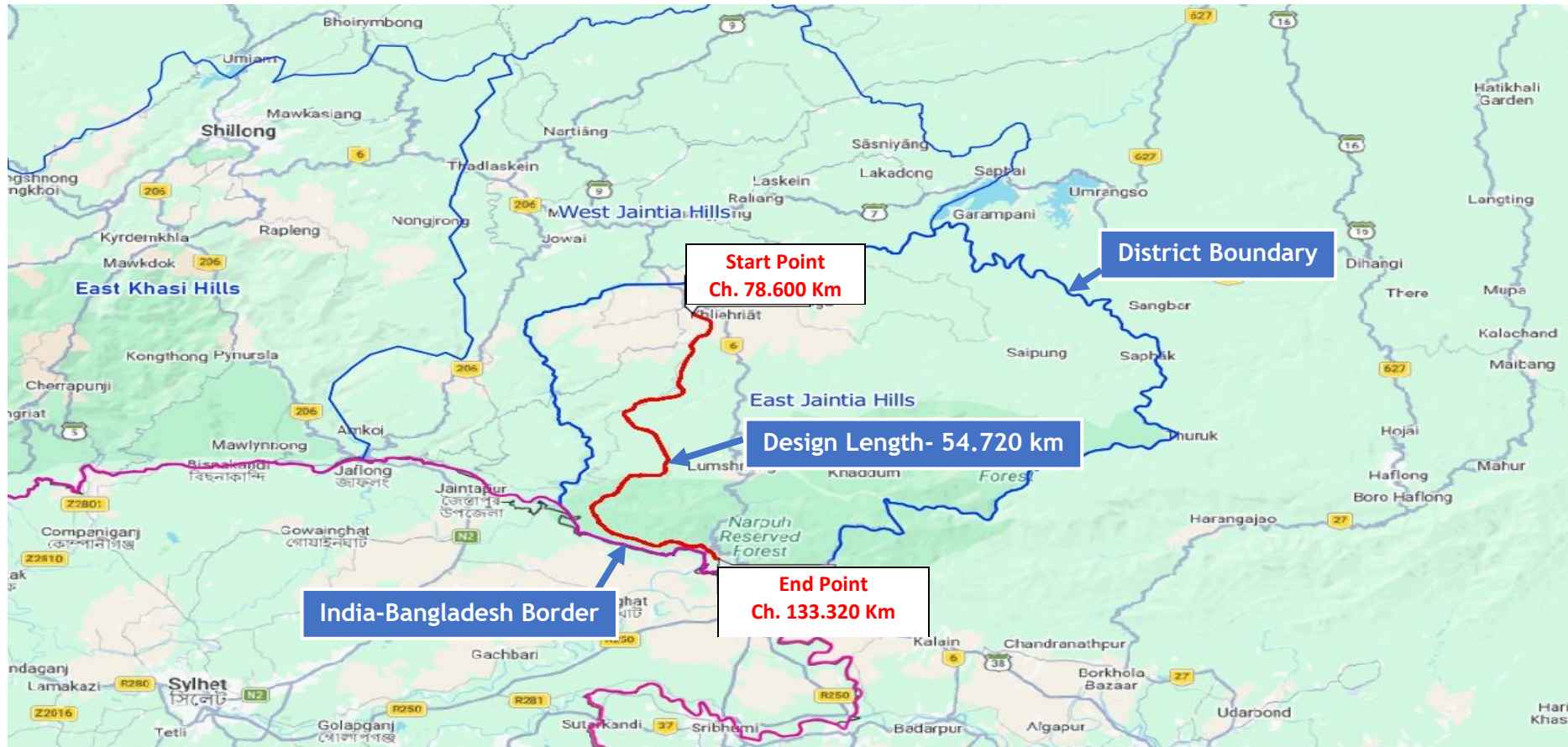
Wildlife Clearance/ESZ : **Required for an area of 11.96 Ha (Approx Chainage km 130+400 to km 131+900)**

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Page

Appendix A-I (Schedule-A)

INDEX MAP/LOCATION

PLAN OF THE PROJECT HIGHWAY



B1an
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Page

Appendix A-II (Schedule-A)**Proposed ROW Co-ordinates****Main Carriageway**

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
1	78+600	433042.72	2805178.06	433065.02	2805186.94	433016.70	2805167.71
2	78+650	433063.97	2805132.84	433085.01	2805144.39	433039.43	2805119.37
3	78+700	433090.70	2805090.62	433110.13	2805104.70	433068.02	2805074.20
4	78+750	433122.47	2805052.06	433142.20	2805070.50	433102.02	2805032.94
5	78+800	433158.81	2805017.76	433176.08	2805038.52	433140.90	2804996.24
6	78+850	433199.14	2804988.26	433213.69	2805011.01	433184.06	2804964.68
7	78+900	433242.58	2804963.53	433255.14	2804987.43	433229.56	2804938.75
8	78+950	433286.93	2804940.44	433299.39	2804964.39	433274.00	2804915.60
9	79+000	433331.28	2804917.36	433343.74	2804941.31	433318.36	2804892.52
10	79+050	433375.64	2804894.28	433392.72	2804927.10	433359.48	2804863.23
11	79+100	433419.99	2804871.20	433437.07	2804904.02	433403.84	2804840.15
12	79+150	433464.35	2804848.12	433481.43	2804880.94	433448.19	2804817.07
13	79+200	433508.70	2804825.04	433521.16	2804848.99	433492.55	2804793.99
14	79+250	433553.06	2804801.96	433565.52	2804825.91	433541.05	2804778.90
15	79+300	433597.41	2804778.88	433609.87	2804802.84	433585.41	2804755.82
16	79+350	433641.77	2804755.80	433654.23	2804779.76	433629.76	2804732.74
17	79+400	433686.12	2804732.73	433698.58	2804756.68	433674.12	2804709.66
18	79+450	433730.48	2804709.65	433742.94	2804733.60	433714.32	2804678.60
19	79+500	433774.83	2804686.57	433785.22	2804706.53	433764.44	2804666.61
20	79+550	433819.19	2804663.49	433834.88	2804693.65	433800.26	2804627.12
21	79+600	433863.54	2804640.41	433879.23	2804670.57	433844.61	2804604.04
22	79+650	433907.89	2804617.33	433919.43	2804639.51	433894.97	2804592.49
23	79+700	433952.25	2804594.25	433963.79	2804616.43	433939.33	2804569.41
24	79+750	433996.60	2804571.17	434012.30	2804601.33	433980.45	2804540.12
25	79+800	434040.96	2804548.09	434056.65	2804578.25	434024.80	2804517.04
26	79+850	434085.31	2804525.01	434101.01	2804555.17	434069.16	2804493.96
27	79+900	434129.67	2804501.93	434145.36	2804532.09	434113.51	2804470.89
28	79+950	434174.02	2804478.85	434189.72	2804509.02	434157.87	2804447.81
29	80+000	434218.38	2804455.78	434234.07	2804485.94	434202.22	2804424.73
30	80+050	434262.73	2804432.70	434274.27	2804454.87	434246.58	2804401.65
31	80+100	434307.09	2804409.62	434318.63	2804431.79	434294.16	2804384.78
32	80+150	434351.44	2804386.54	434362.98	2804408.72	434338.52	2804361.70
33	80+200	434395.80	2804363.46	434407.34	2804385.64	434382.87	2804338.62
34	80+250	434440.15	2804340.38	434451.69	2804362.56	434427.23	2804315.54
35	80+300	434484.51	2804317.30	434496.05	2804339.48	434471.58	2804292.46
36	80+350	434528.85	2804294.21	434540.48	2804316.34	434515.83	2804269.42

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
37	80+400	434572.29	2804269.47	434585.76	2804290.53	434557.20	2804245.88
38	80+450	434612.62	2804239.97	434628.61	2804259.19	434594.71	2804218.45
39	80+500	434648.95	2804205.67	434667.22	2804222.74	434628.50	2804186.55
40	80+550	434680.73	2804167.11	434705.03	2804184.70	434652.38	2804146.58
41	80+600	434707.45	2804124.88	434733.75	2804139.31	434676.76	2804108.05
42	80+650	434728.70	2804079.66	434749.62	2804087.94	434707.77	2804071.38
43	80+700	434744.14	2804032.14	434765.93	2804037.74	434722.35	2804026.53
44	80+750	434753.54	2803983.06	434775.86	2803985.91	434731.22	2803980.22
45	80+800	434756.98	2803933.20	434779.47	2803933.75	434734.49	2803932.66
46	80+850	434757.66	2803883.21	434794.66	2803883.64	434722.67	2803882.80
47	80+900	434758.25	2803833.21	434795.24	2803833.65	434723.25	2803832.80
48	80+950	434758.83	2803783.22	434795.83	2803783.65	434723.83	2803782.81
49	81+000	434759.42	2803733.22	434796.41	2803733.65	434724.42	2803732.81
50	81+050	434760.00	2803683.22	434800.00	2803683.69	434722.00	2803682.78
51	81+100	434760.59	2803633.23	434800.58	2803633.69	434722.59	2803632.78
52	81+150	434761.17	2803583.23	434801.17	2803583.70	434723.17	2803582.79
53	81+200	434761.75	2803533.23	434797.75	2803533.65	434731.76	2803532.88
54	81+250	434762.34	2803483.24	434798.34	2803483.66	434732.34	2803482.89
55	81+300	434762.92	2803433.24	434792.92	2803433.59	434726.93	2803432.82
56	81+350	434763.51	2803383.24	434793.51	2803383.59	434727.51	2803382.82
57	81+400	434764.09	2803333.25	434790.09	2803333.55	434738.09	2803332.94
58	81+450	434764.55	2803283.25	434790.55	2803283.21	434738.55	2803283.29
59	81+500	434762.64	2803233.30	434788.54	2803231.10	434736.73	2803235.50
60	81+550	434755.92	2803183.78	434781.48	2803179.00	434730.37	2803188.55
61	81+600	434744.30	2803135.17	434769.25	2803127.86	434719.35	2803142.47
62	81+650	434727.88	2803087.96	434762.18	2803074.09	434703.78	2803097.71
63	81+700	434707.67	2803042.23	434741.24	2803026.67	434677.73	2803056.12
64	81+750	434686.62	2802996.88	434720.18	2802981.30	434656.68	2803010.78
65	81+800	434665.56	2802951.53	434699.12	2802935.95	434635.63	2802965.43
66	81+850	434644.51	2802906.18	434664.92	2802896.71	434624.10	2802915.65
67	81+900	434623.45	2802860.83	434657.92	2802844.83	434595.34	2802873.88
68	81+950	434602.40	2802815.48	434636.87	2802799.48	434574.28	2802828.53
69	82+000	434581.35	2802770.13	434615.81	2802754.13	434547.79	2802785.71
70	82+050	434560.29	2802724.78	434594.76	2802708.77	434526.73	2802740.36
71	82+100	434539.24	2802679.42	434573.71	2802663.42	434505.68	2802695.00
72	82+150	434518.19	2802634.07	434552.65	2802618.07	434484.63	2802649.65
73	82+200	434497.13	2802588.72	434531.60	2802572.72	434463.57	2802604.30
74	82+250	434476.08	2802543.37	434510.54	2802527.35	434447.06	2802556.86
75	82+300	434454.25	2802498.39	434487.93	2802480.80	434425.88	2802513.20
76	82+350	434429.13	2802455.18	434454.36	2802438.94	434402.23	2802472.50
77	82+400	434400.20	2802414.42	434423.85	2802395.96	434374.98	2802434.11

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
78	82+450	434367.69	2802376.46	434389.56	2802355.93	434344.36	2802398.36
79	82+500	434331.86	2802341.60	434346.80	2802324.78	434316.92	2802358.43
80	82+550	434293.02	2802310.14	434306.37	2802292.03	434279.67	2802328.26
81	82+600	434251.48	2802282.34	434263.14	2802263.10	434239.83	2802301.59
82	82+650	434207.59	2802258.43	434222.49	2802227.86	434192.70	2802288.99
83	82+700	434161.71	2802238.59	434173.77	2802206.80	434149.66	2802270.38
84	82+750	434114.22	2802223.01	434123.35	2802190.26	434105.10	2802255.76
85	82+800	434065.51	2802211.80	434070.91	2802182.29	434059.40	2802245.24
86	82+850	434016.01	2802204.84	434019.26	2802175.02	434012.33	2802238.64
87	82+900	433966.27	2802199.82	433969.23	2802169.96	433962.90	2802233.65
88	82+950	433916.51	2802194.87	433919.48	2802165.02	433913.15	2802228.70
89	83+000	433866.76	2802189.92	433869.72	2802160.07	433863.39	2802223.76
90	83+050	433817.07	2802184.35	433821.34	2802154.65	433812.81	2802214.04
91	83+100	433768.12	2802174.30	433777.28	2802140.52	433760.28	2802203.26
92	83+150	433720.81	2802158.25	433734.10	2802125.87	433709.41	2802186.00
93	83+200	433675.86	2802136.42	433693.09	2802105.95	433661.09	2802162.53
94	83+250	433633.99	2802109.15	433654.88	2802081.07	433613.09	2802137.23
95	83+300	433595.84	2802076.88	433620.07	2802051.63	433571.61	2802102.14
96	83+350	433562.01	2802040.11	433589.20	2802018.07	433534.82	2802062.15
97	83+400	433532.75	2801999.59	433556.09	2801984.13	433507.74	2802016.15
98	83+450	433505.45	2801957.70	433528.93	2801942.44	433480.30	2801974.05
99	83+500	433478.20	2801915.78	433501.68	2801900.52	433442.15	2801939.21
100	83+550	433450.95	2801873.85	433478.62	2801855.87	433414.90	2801897.29
101	83+600	433423.70	2801831.93	433451.37	2801813.95	433387.65	2801855.37
102	83+650	433396.45	2801790.01	433424.12	2801772.03	433360.40	2801813.45
103	83+700	433369.20	2801748.09	433396.87	2801730.10	433341.53	2801766.07
104	83+750	433341.95	2801706.17	433369.62	2801688.18	433314.28	2801724.15
105	83+800	433314.70	2801664.25	433333.57	2801651.98	433295.84	2801676.51
106	83+850	433287.45	2801622.32	433306.32	2801610.06	433268.59	2801634.59
107	83+900	433260.20	2801580.40	433279.07	2801568.14	433241.34	2801592.66
108	83+950	433232.95	2801538.48	433262.30	2801519.40	433201.09	2801559.19
109	84+000	433205.70	2801496.56	433235.05	2801477.48	433173.84	2801517.27
110	84+050	433178.45	2801454.64	433207.80	2801435.56	433149.11	2801473.71
111	84+100	433151.20	2801412.71	433180.55	2801393.64	433121.86	2801431.79
112	84+150	433123.95	2801370.79	433153.30	2801351.72	433094.61	2801389.87
113	84+200	433096.70	2801328.87	433126.05	2801309.80	433067.36	2801347.95
114	84+250	433069.45	2801286.95	433098.80	2801267.87	433040.11	2801306.02
115	84+300	433042.20	2801245.03	433071.55	2801225.95	433018.72	2801260.29
116	84+350	433014.95	2801203.11	433044.30	2801184.03	432991.47	2801218.37
117	84+400	432987.70	2801161.18	433017.05	2801142.11	432964.22	2801176.44
118	84+450	432960.45	2801119.26	432993.99	2801097.46	432922.72	2801143.79

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
119	84+500	432933.20	2801077.34	432966.74	2801055.54	432895.47	2801101.87
120	84+550	432906.35	2801035.16	432940.63	2801014.55	432867.79	2801058.36
121	84+600	432883.03	2800990.97	432911.29	2800978.22	432846.58	2801007.42
122	84+650	432865.36	2800944.23	432894.99	2800935.10	432827.14	2800956.01
123	84+700	432853.65	2800895.65	432884.19	2800890.29	432814.26	2800902.58
124	84+750	432848.09	2800846.00	432888.05	2800844.04	432808.14	2800847.96
125	84+800	432848.77	2800796.03	432888.65	2800799.07	432808.88	2800793.00
126	84+850	432855.67	2800746.54	432885.06	2800752.53	432830.19	2800741.35
127	84+900	432868.68	2800698.30	432897.10	2800707.91	432844.05	2800689.98
128	84+950	432887.61	2800652.06	432914.61	2800665.13	432864.21	2800640.73
129	85+000	432912.12	2800608.51	432937.38	2800624.70	432890.23	2800594.49
130	85+050	432940.20	2800567.14	432964.84	2800584.25	432918.84	2800552.32
131	85+100	432968.68	2800526.05	433000.03	2800547.52	432904.33	2800481.97
132	85+150	432995.35	2800483.78	433040.76	2800509.11	432927.23	2800445.77
133	85+200	433016.92	2800438.71	433065.13	2800458.18	432989.10	2800427.47
134	85+250	433032.70	2800391.30	433082.97	2800404.61	433003.70	2800383.62
135	85+300	433042.45	2800342.29	433066.24	2800345.49	433012.72	2800338.29
136	85+350	433046.02	2800292.45	433070.02	2800292.66	433016.02	2800292.18
137	85+400	433043.34	2800242.55	433073.14	2800239.08	433009.57	2800246.49
138	85+450	433034.49	2800193.38	433063.65	2800186.35	433001.43	2800201.34
139	85+500	433021.45	2800145.11	433050.33	2800136.99	432992.57	2800153.23
140	85+550	433007.92	2800096.98	433036.80	2800088.86	432979.04	2800105.09
141	85+600	432994.39	2800048.84	433015.57	2800042.89	432965.51	2800056.96
142	85+650	432980.86	2800000.71	433002.04	2799994.75	432951.98	2800008.83
143	85+700	432967.33	2799952.57	432995.24	2799944.73	432942.30	2799959.61
144	85+750	432953.64	2799904.48	432981.42	2799896.16	432928.74	2799911.95
145	85+800	432937.20	2799857.28	432964.08	2799846.41	432909.39	2799868.54
146	85+850	432916.16	2799811.95	432941.82	2799798.44	432889.61	2799825.92
147	85+900	432890.70	2799768.94	432914.90	2799752.95	432865.67	2799785.48
148	85+950	432862.08	2799727.95	432885.70	2799711.12	432837.64	2799745.35
149	86+000	432833.08	2799687.22	432856.70	2799670.40	432814.34	2799700.56
150	86+050	432804.07	2799646.49	432822.00	2799633.73	432785.34	2799659.83
151	86+100	432775.07	2799605.76	432792.99	2799593.00	432756.34	2799619.10
152	86+150	432746.07	2799565.03	432785.17	2799537.19	432721.63	2799582.43
153	86+200	432717.07	2799524.30	432739.06	2799508.64	432692.63	2799541.70
154	86+250	432688.06	2799483.57	432710.06	2799467.91	432663.63	2799500.97
155	86+300	432659.06	2799442.84	432681.06	2799427.18	432634.62	2799460.24
156	86+350	432630.06	2799402.11	432652.05	2799386.45	432602.36	2799421.84
157	86+400	432601.16	2799361.31	432623.38	2799345.97	432573.18	2799380.63
158	86+450	432574.04	2799319.32	432597.16	2799305.38	432544.91	2799336.86
159	86+500	432549.59	2799275.71	432573.54	2799263.25	432519.43	2799291.40

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
160	86+550	432527.91	2799230.66	432552.60	2799219.72	432496.83	2799244.44
161	86+600	432509.10	2799184.35	432534.41	2799174.97	432477.21	2799196.16
162	86+650	432492.76	2799137.09	432518.35	2799128.48	432460.54	2799147.94
163	86+700	432476.81	2799089.71	432505.24	2799080.14	432444.58	2799100.55
164	86+750	432460.85	2799042.32	432489.29	2799032.75	432434.32	2799051.25
165	86+800	432444.83	2798994.96	432473.15	2798985.08	432418.39	2799004.18
166	86+850	432426.95	2798948.27	432460.15	2798934.36	432393.75	2798962.19
167	86+900	432406.20	2798902.79	432438.47	2798886.84	432373.93	2798918.74
168	86+950	432383.51	2798858.24	432415.54	2798841.82	432351.47	2798874.66
169	87+000	432360.70	2798813.74	432392.73	2798797.32	432328.66	2798830.16
170	87+050	432337.89	2798769.25	432369.94	2798752.85	432305.84	2798785.64
171	87+100	432316.27	2798724.17	432349.30	2798709.84	432274.99	2798742.08
172	87+150	432298.31	2798677.53	432332.41	2798666.00	432255.68	2798691.94
173	87+200	432284.05	2798629.61	432314.93	2798621.21	432240.63	2798641.43
174	87+250	432270.94	2798581.36	432301.82	2798572.97	432227.51	2798593.16
175	87+300	432257.82	2798533.11	432288.70	2798524.72	432202.82	2798548.06
176	87+350	432244.71	2798484.86	432279.45	2798475.42	432189.71	2798499.81
177	87+400	432231.60	2798436.61	432266.34	2798427.17	432165.98	2798454.45
178	87+450	432218.48	2798388.36	432259.01	2798377.35	432152.86	2798406.20
179	87+500	432205.37	2798340.11	432245.90	2798329.10	432126.24	2798361.62
180	87+550	432192.26	2798291.86	432232.79	2798280.85	432113.13	2798313.37
181	87+600	432179.14	2798243.61	432208.09	2798235.75	432134.75	2798255.68
182	87+650	432166.03	2798195.36	432194.98	2798187.50	432121.64	2798207.43
183	87+700	432152.92	2798147.12	432181.87	2798139.25	432123.97	2798154.98
184	87+750	432139.33	2798099.00	432168.12	2798090.56	432110.54	2798107.44
185	87+800	432124.78	2798051.16	432153.40	2798042.15	432063.74	2798070.39
186	87+850	432109.28	2798003.63	432137.71	2797994.04	432048.64	2798024.07
187	87+900	432092.83	2797956.41	432121.06	2797946.26	432032.61	2797978.07
188	87+950	432075.45	2797909.53	432096.93	2797901.32	432029.68	2797927.03
189	88+000	432057.13	2797863.01	432078.46	2797854.42	432011.68	2797881.31
190	88+050	432038.45	2797816.63	432059.79	2797808.04	431993.00	2797834.93
191	88+100	432019.77	2797770.25	432041.11	2797761.65	431974.32	2797788.55
192	88+150	432001.10	2797723.87	432035.42	2797710.04	431973.27	2797735.07
193	88+200	431982.42	2797677.49	432016.74	2797663.66	431954.59	2797688.69
194	88+250	431963.74	2797631.11	431998.06	2797617.28	431935.91	2797642.31
195	88+300	431945.06	2797584.72	431965.94	2797576.32	431924.19	2797593.13
196	88+350	431926.62	2797538.25	431947.65	2797530.25	431905.59	2797546.26
197	88+400	431910.01	2797491.10	431931.41	2797484.15	431888.61	2797498.04
198	88+450	431895.77	2797443.17	431917.50	2797437.31	431874.05	2797449.04
199	88+500	431883.95	2797394.59	431905.94	2797389.82	431861.96	2797399.37
200	88+550	431874.57	2797345.49	431896.77	2797341.82	431852.37	2797349.15

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
201	88+600	431867.66	2797295.97	431890.02	2797293.42	431845.31	2797298.53
202	88+650	431863.23	2797246.17	431885.69	2797244.74	431840.78	2797247.61
203	88+700	431861.23	2797196.22	431883.72	2797195.73	431838.74	2797196.71
204	88+750	431860.26	2797146.23	431882.76	2797145.80	431837.77	2797146.66
205	88+800	431859.31	2797096.24	431881.80	2797095.81	431836.81	2797096.67
206	88+850	431858.35	2797046.25	431880.85	2797045.82	431835.86	2797046.68
207	88+900	431857.40	2796996.26	431899.39	2796995.45	431821.40	2796996.94
208	88+950	431856.43	2796946.27	431898.42	2796945.34	431820.44	2796947.06
209	89+000	431854.59	2796896.30	431896.53	2796894.06	431818.64	2796898.22
210	89+050	431851.09	2796846.43	431892.93	2796842.79	431815.23	2796849.54
211	89+100	431845.94	2796796.69	431881.68	2796792.39	431799.27	2796802.31
212	89+150	431839.64	2796747.09	431875.34	2796742.51	431793.02	2796753.08
213	89+200	431833.26	2796697.50	431868.97	2796692.91	431786.65	2796703.49
214	89+250	431826.89	2796647.91	431862.60	2796643.32	431791.18	2796652.50
215	89+300	431820.52	2796598.32	431856.22	2796593.73	431784.81	2796602.90
216	89+350	431813.81	2796548.77	431849.41	2796543.41	431778.21	2796554.13
217	89+400	431805.14	2796499.53	431840.42	2796492.40	431769.85	2796506.66
218	89+450	431794.01	2796450.79	431821.15	2796443.88	431764.94	2796458.20
219	89+500	431780.47	2796402.67	431807.22	2796394.41	431751.80	2796411.52
220	89+550	431764.53	2796355.28	431790.84	2796345.69	431736.34	2796365.55
221	89+600	431746.25	2796308.75	431772.04	2796297.86	431718.61	2796320.41
222	89+650	431725.67	2796263.18	431764.44	2796244.59	431702.23	2796274.43
223	89+700	431703.63	2796218.30	431742.17	2796199.24	431680.33	2796229.83
224	89+750	431681.46	2796173.49	431713.73	2796157.53	431658.16	2796185.01
225	89+800	431659.33	2796128.65	431691.70	2796112.89	431635.96	2796140.04
226	89+850	431638.68	2796083.13	431672.00	2796069.49	431614.62	2796092.98
227	89+900	431621.69	2796036.12	431643.15	2796029.36	431600.23	2796042.88
228	89+950	431608.66	2795987.86	431630.61	2795982.91	431586.71	2795992.81
229	90+000	431599.70	2795938.68	431646.25	2795932.19	431569.99	2795942.83
230	90+050	431594.87	2795888.93	431641.79	2795886.34	431564.91	2795890.59
231	90+100	431594.19	2795838.95	431641.17	2795840.27	431564.20	2795838.11
232	90+150	431597.67	2795789.09	431644.38	2795794.31	431567.86	2795785.75
233	90+200	431605.29	2795739.69	431684.76	2795755.36	431541.52	2795727.11
234	90+250	431617.00	2795691.09	431694.89	2795713.33	431554.50	2795673.25
235	90+300	431632.71	2795643.64	431708.48	2795672.28	431571.91	2795620.65
236	90+350	431652.32	2795597.66	431720.03	2795629.93	431593.65	2795569.69
237	90+400	431675.69	2795553.47	431740.47	2795591.26	431619.54	2795520.72
238	90+450	431702.63	2795511.37	431764.22	2795554.18	431649.26	2795474.27
239	90+500	431731.85	2795470.79	431782.76	2795507.89	431679.31	2795432.51
240	90+550	431761.29	2795430.38	431812.21	2795467.48	431708.76	2795392.10
241	90+600	431790.74	2795389.97	431841.65	2795427.07	431738.20	2795351.69

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
242	90+650	431820.18	2795349.56	431871.10	2795386.66	431767.65	2795311.28
243	90+700	431849.63	2795309.15	431900.54	2795346.25	431797.09	2795270.87
244	90+750	431879.07	2795268.74	431929.99	2795305.84	431826.54	2795230.46
245	90+800	431908.52	2795228.33	431959.43	2795265.43	431855.98	2795190.05
246	90+850	431937.96	2795187.92	431988.88	2795225.02	431885.43	2795149.64
247	90+900	431967.41	2795147.51	432018.32	2795184.61	431914.87	2795109.23
248	90+950	431996.81	2795107.07	432048.00	2795143.79	431944.00	2795069.18
249	91+000	432024.59	2795065.52	432079.13	2795097.06	431968.33	2795032.97
250	91+050	432048.31	2795021.52	432105.19	2795048.61	431991.43	2794994.44
251	91+100	432067.52	2794975.38	432118.35	2794993.61	432008.22	2794954.11
252	91+150	432082.02	2794927.55	432134.42	2794940.62	432020.89	2794912.31
253	91+200	432091.68	2794878.52	432145.11	2794886.29	432035.27	2794870.31
254	91+250	432096.39	2794828.76	432150.34	2794831.16	432039.45	2794826.23
255	91+300	432096.11	2794778.78	432150.03	2794775.78	432039.20	2794781.95
256	91+350	432090.84	2794729.08	432144.19	2794720.71	432043.42	2794736.52
257	91+400	432080.64	2794680.15	432124.18	2794668.78	432034.20	2794692.29
258	91+450	432065.61	2794632.49	432107.79	2794616.82	432020.61	2794649.20
259	91+500	432045.89	2794586.56	432086.30	2794566.76	432002.78	2794607.68
260	91+550	432021.68	2794542.84	432040.80	2794530.97	432002.57	2794554.70
261	91+600	431993.23	2794501.75	432011.07	2794488.03	431975.40	2794515.46
262	91+650	431960.82	2794463.70	431977.20	2794448.27	431944.44	2794479.13
263	91+700	431924.78	2794429.08	431939.53	2794412.09	431910.02	2794446.07
264	91+750	431885.45	2794398.23	431898.44	2794379.86	431872.47	2794416.60
265	91+800	431843.25	2794371.46	431854.33	2794351.88	431832.16	2794391.04
266	91+850	431798.97	2794348.25	431809.06	2794328.14	431788.87	2794368.36
267	91+900	431754.28	2794325.82	431764.38	2794305.71	431744.19	2794345.93
268	91+950	431709.59	2794303.39	431735.62	2794251.55	431691.65	2794339.14
269	92+000	431664.91	2794280.96	431690.93	2794229.12	431646.96	2794316.71
270	92+050	431620.22	2794258.53	431635.93	2794227.25	431608.56	2794281.76
271	92+100	431575.54	2794236.09	431588.10	2794211.07	431563.87	2794259.33
272	92+150	431530.85	2794213.66	431543.41	2794188.64	431519.19	2794236.90
273	92+200	431486.03	2794191.50	431498.20	2794166.27	431474.74	2794214.91
274	92+250	431440.76	2794170.29	431463.10	2794121.13	431430.00	2794193.96
275	92+300	431395.01	2794150.12	431416.23	2794100.46	431378.50	2794188.74
276	92+350	431348.81	2794130.99	431365.18	2794090.15	431333.19	2794169.98
277	92+400	431302.19	2794112.92	431317.63	2794071.72	431291.67	2794141.01
278	92+450	431255.17	2794095.91	431269.67	2794054.37	431245.29	2794124.24
279	92+500	431207.78	2794079.98	431221.33	2794038.12	431198.54	2794108.52
280	92+550	431160.04	2794065.13	431172.63	2794022.97	431151.45	2794093.87
281	92+600	431111.97	2794051.36	431122.02	2794014.71	431104.04	2794080.30
282	92+650	431063.61	2794038.69	431072.82	2794001.83	431051.97	2794085.26

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
283	92+700	431014.96	2794027.13	431023.33	2793990.06	431004.39	2794073.95
284	92+750	430966.11	2794016.46	430972.45	2793987.14	430955.98	2794063.38
285	92+800	430917.24	2794005.91	430923.57	2793976.58	430909.22	2794043.05
286	92+850	430868.37	2793995.35	430876.39	2793958.21	430860.35	2794032.50
287	92+900	430819.49	2793984.80	430827.51	2793947.66	430811.47	2794021.94
288	92+950	430770.62	2793974.25	430783.71	2793913.64	430755.00	2794046.58
289	93+000	430721.75	2793963.69	430734.83	2793903.09	430706.13	2794036.02
290	93+050	430672.87	2793953.14	430685.96	2793892.53	430657.25	2794025.47
291	93+100	430624.00	2793942.58	430630.33	2793913.26	430617.67	2793971.91
292	93+150	430575.13	2793932.03	430581.46	2793902.70	430568.79	2793961.35
293	93+200	430526.25	2793921.47	430532.59	2793892.15	430519.92	2793950.80
294	93+250	430477.38	2793910.92	430483.71	2793881.60	430468.30	2793952.95
295	93+300	430428.51	2793900.37	430434.84	2793871.04	430419.43	2793942.40
296	93+350	430379.63	2793889.81	430384.38	2793867.82	430374.88	2793911.80
297	93+400	430330.76	2793879.26	430335.51	2793857.26	430326.01	2793901.25
298	93+450	430281.89	2793868.70	430286.64	2793846.71	430277.14	2793890.70
299	93+500	430233.01	2793858.15	430240.40	2793823.94	430219.50	2793920.71
300	93+550	430184.14	2793847.59	430191.53	2793813.38	430170.63	2793910.15
301	93+600	430135.27	2793837.04	430140.97	2793810.65	430121.76	2793899.60
302	93+650	430086.39	2793826.49	430092.09	2793800.09	430079.22	2793859.72
303	93+700	430037.52	2793815.93	430043.22	2793789.54	430030.34	2793849.17
304	93+750	429988.65	2793805.38	429996.03	2793771.17	429981.47	2793838.61
305	93+800	429939.77	2793794.82	429947.16	2793760.61	429933.86	2793822.19
306	93+850	429890.90	2793784.27	429901.45	2793735.40	429884.99	2793811.64
307	93+900	429842.03	2793773.71	429852.58	2793724.84	429836.12	2793801.08
308	93+950	429793.15	2793763.16	429803.71	2793714.29	429787.24	2793790.53
309	94+000	429744.28	2793752.61	429754.83	2793703.73	429736.89	2793786.82
310	94+050	429695.41	2793742.05	429701.95	2793711.75	429688.02	2793776.26
311	94+100	429646.53	2793731.50	429653.08	2793701.20	429640.83	2793757.89
312	94+150	429597.66	2793720.94	429608.61	2793670.11	429591.97	2793747.34
313	94+200	429548.56	2793711.56	429556.25	2793660.14	429543.23	2793747.17
314	94+250	429498.82	2793706.64	429500.52	2793671.68	429497.07	2793742.60
315	94+300	429448.83	2793706.48	429447.81	2793671.50	429449.89	2793742.47
316	94+350	429398.86	2793708.12	429397.70	2793673.14	429400.06	2793744.10
317	94+400	429348.89	2793709.78	429347.73	2793674.80	429350.08	2793745.76
318	94+450	429298.92	2793711.44	429297.75	2793676.46	429300.11	2793747.42
319	94+500	429248.94	2793713.10	429247.78	2793678.12	429250.44	2793758.08
320	94+550	429198.97	2793714.76	429197.38	2793666.79	429200.46	2793759.74
321	94+600	429149.00	2793716.42	429147.94	2793684.44	429150.19	2793752.40
322	94+650	429099.03	2793718.08	429097.96	2793686.10	429100.22	2793754.06
323	94+700	429049.05	2793719.74	429047.99	2793687.76	429050.25	2793755.72

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
324	94+750	428999.08	2793721.40	428998.02	2793689.42	429000.28	2793757.38
325	94+800	428949.11	2793723.06	428947.95	2793688.08	428950.04	2793751.05
326	94+850	428899.13	2793724.48	428898.78	2793689.48	428899.41	2793752.47
327	94+900	428849.20	2793722.36	428853.93	2793676.60	428843.03	2793782.04
328	94+950	428799.92	2793714.12	428810.32	2793669.31	428786.35	2793772.57
329	95+000	428751.95	2793700.10	428761.87	2793670.74	428738.50	2793739.89
330	95+050	428704.71	2793683.70	428714.92	2793654.43	428690.88	2793723.36
331	95+100	428657.50	2793667.24	428672.32	2793624.75	428643.67	2793706.90
332	95+150	428610.29	2793650.77	428625.11	2793608.28	428588.56	2793713.09
333	95+200	428563.08	2793634.31	428577.90	2793591.82	428541.35	2793696.63
334	95+250	428515.87	2793617.85	428528.71	2793581.02	428494.13	2793680.17
335	95+300	428468.66	2793601.38	428481.50	2793564.56	428444.62	2793670.31
336	95+350	428421.44	2793584.92	428434.29	2793548.09	428397.41	2793653.85
337	95+400	428374.23	2793568.45	428387.07	2793531.63	428347.23	2793645.88
338	95+450	428327.02	2793551.99	428347.76	2793492.50	428300.02	2793629.42
339	95+500	428279.81	2793535.53	428300.55	2793476.04	428252.81	2793612.95
340	95+550	428232.60	2793519.06	428249.72	2793469.96	428214.16	2793571.94
341	95+600	428185.39	2793502.60	428202.51	2793453.50	428166.95	2793555.48
342	95+650	428138.17	2793486.13	428158.26	2793428.54	428119.73	2793539.01
343	95+700	428090.96	2793469.67	428111.05	2793412.07	428072.52	2793522.55
344	95+750	428043.75	2793453.21	428063.84	2793395.61	428025.31	2793506.08
345	95+800	427996.74	2793436.19	428019.18	2793379.47	427974.66	2793491.98
346	95+850	427951.24	2793415.50	427979.23	2793361.30	427923.71	2793468.82
347	95+900	427908.04	2793390.38	427928.75	2793358.53	427875.32	2793440.68
348	95+950	427866.99	2793361.83	427889.11	2793330.93	427847.21	2793389.48
349	96+000	427826.33	2793332.73	427848.44	2793301.83	427806.55	2793360.39
350	96+050	427785.67	2793303.64	427805.45	2793275.99	427765.88	2793331.29
351	96+100	427745.01	2793274.54	427764.79	2793246.89	427725.22	2793302.20
352	96+150	427704.34	2793245.45	427724.13	2793217.80	427687.47	2793269.03
353	96+200	427663.68	2793216.35	427679.39	2793194.40	427646.81	2793239.94
354	96+250	427623.02	2793187.26	427638.73	2793165.30	427606.14	2793210.84
355	96+300	427582.35	2793158.16	427598.07	2793136.21	427565.48	2793181.75
356	96+350	427541.69	2793129.07	427557.40	2793107.11	427524.82	2793152.65
357	96+400	427501.13	2793099.83	427517.23	2793078.16	427483.84	2793123.11
358	96+450	427462.46	2793068.17	427480.76	2793048.32	427442.81	2793089.50
359	96+500	427427.90	2793032.08	427448.53	2793014.66	427405.75	2793050.79
360	96+550	427398.11	2792991.97	427420.75	2792977.26	427373.80	2793007.77
361	96+600	427373.56	2792948.45	427397.85	2792936.68	427347.46	2792961.10
362	96+650	427354.62	2792902.21	427375.93	2792895.00	427333.30	2792909.42
363	96+700	427341.03	2792854.11	427362.88	2792848.74	427319.18	2792859.48
364	96+750	427329.33	2792805.50	427358.50	2792798.50	427301.13	2792812.26

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
365	96+800	427317.67	2792756.88	427346.84	2792749.88	427289.47	2792763.64
366	96+850	427306.00	2792708.26	427344.90	2792698.93	427277.80	2792715.02
367	96+900	427294.21	2792659.67	427332.96	2792649.76	427266.11	2792666.86
368	96+950	427279.68	2792611.85	427317.22	2792598.05	427252.46	2792621.86
369	97+000	427259.54	2792566.12	427295.07	2792547.75	427233.78	2792579.44
370	97+050	427233.86	2792523.26	427277.54	2792493.23	427209.96	2792539.69
371	97+100	427203.04	2792483.93	427242.63	2792448.69	427181.37	2792503.21
372	97+150	427167.55	2792448.75	427185.98	2792427.68	427145.17	2792474.35
373	97+200	427127.95	2792418.28	427143.61	2792395.07	427108.94	2792446.46
374	97+250	427084.87	2792392.96	427105.34	2792352.88	427071.23	2792419.68
375	97+300	427039.65	2792371.65	427058.24	2792330.67	427027.25	2792398.97
376	97+350	426994.12	2792350.99	427010.23	2792315.47	426981.72	2792378.31
377	97+400	426948.59	2792330.33	426964.70	2792294.81	426936.19	2792357.64
378	97+450	426903.05	2792309.66	426919.17	2792274.15	426890.66	2792336.98
379	97+500	426857.52	2792289.00	426868.68	2792264.42	426845.13	2792316.32
380	97+550	426811.99	2792268.34	426823.15	2792243.76	426799.59	2792295.66
381	97+600	426766.46	2792247.68	426777.62	2792223.09	426754.06	2792275.00
382	97+650	426720.93	2792227.02	426732.08	2792202.43	426708.53	2792254.34
383	97+700	426675.40	2792206.36	426686.55	2792181.77	426659.69	2792240.96
384	97+750	426629.86	2792185.70	426644.33	2792153.83	426614.16	2792220.30
385	97+800	426584.33	2792165.04	426598.80	2792133.17	426568.62	2792199.64
386	97+850	426539.21	2792143.52	426552.64	2792117.81	426521.61	2792177.20
387	97+900	426496.41	2792117.72	426512.91	2792093.87	426479.35	2792142.40
388	97+950	426457.17	2792086.79	426476.50	2792065.18	426437.16	2792109.15
389	98+000	426422.08	2792051.22	426443.96	2792032.18	426399.45	2792070.91
390	98+050	426391.71	2792011.54	426415.79	2791995.39	426366.79	2792028.26
391	98+100	426366.51	2791968.39	426392.42	2791955.36	426339.71	2791981.87
392	98+150	426346.90	2791922.43	426374.23	2791912.74	426318.63	2791932.46
393	98+200	426333.17	2791874.39	426365.40	2791867.32	426305.82	2791880.39
394	98+250	426325.53	2791825.01	426358.39	2791822.01	426297.65	2791827.55
395	98+300	426324.11	2791775.06	426357.09	2791776.19	426296.13	2791774.11
396	98+350	426328.93	2791725.33	426361.51	2791730.56	426301.28	2791720.89
397	98+400	426339.91	2791676.58	426371.59	2791685.83	426318.31	2791670.28
398	98+450	426356.88	2791629.59	426377.53	2791638.54	426336.24	2791620.64
399	98+500	426379.54	2791585.05	426398.99	2791596.35	426360.09	2791573.74
400	98+550	426405.75	2791542.47	426424.80	2791554.45	426386.70	2791530.50
401	98+600	426432.36	2791500.14	426451.41	2791512.12	426413.31	2791488.17
402	98+650	426458.97	2791457.81	426478.02	2791469.79	426439.92	2791445.84
403	98+700	426485.58	2791415.48	426504.63	2791427.46	426466.53	2791403.51
404	98+750	426512.19	2791373.15	426531.24	2791385.13	426493.15	2791361.18
405	98+800	426538.81	2791330.82	426557.85	2791342.80	426519.76	2791318.85

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
406	98+850	426565.42	2791288.49	426584.47	2791300.47	426546.37	2791276.52
407	98+900	426592.03	2791246.16	426611.08	2791258.14	426572.98	2791234.19
408	98+950	426618.64	2791203.83	426643.19	2791219.27	426573.77	2791175.62
409	99+000	426645.25	2791161.50	426669.80	2791176.94	426600.38	2791133.29
410	99+050	426671.87	2791119.17	426696.42	2791134.61	426627.00	2791090.96
411	99+100	426698.48	2791076.84	426757.74	2791114.10	426647.68	2791044.91
412	99+150	426725.09	2791034.51	426784.35	2791071.77	426674.29	2791002.58
413	99+200	426751.70	2790992.18	426798.26	2791021.46	426700.90	2790960.25
414	99+250	426778.31	2790949.85	426824.87	2790979.13	426702.12	2790901.95
415	99+300	426804.92	2790907.52	426851.49	2790936.80	426728.73	2790859.62
416	99+350	426831.54	2790865.19	426862.86	2790884.89	426755.34	2790817.29
417	99+400	426858.15	2790822.86	426889.47	2790842.56	426820.05	2790798.91
418	99+450	426884.76	2790780.53	426916.08	2790800.23	426846.66	2790756.58
419	99+500	426911.37	2790738.20	426942.69	2790757.90	426873.27	2790714.25
420	99+550	426937.98	2790695.87	426969.31	2790715.57	426905.81	2790675.65
421	99+600	426964.59	2790653.54	427008.62	2790681.22	426932.42	2790633.32
422	99+650	426991.21	2790611.21	427035.23	2790638.89	426959.03	2790590.99
423	99+700	427017.82	2790568.88	427082.16	2790609.33	426975.49	2790542.27
424	99+750	427044.43	2790526.55	427108.77	2790567.00	427002.10	2790499.94
425	99+800	427071.04	2790484.22	427127.76	2790519.88	427039.72	2790464.53
426	99+850	427097.65	2790441.89	427154.37	2790477.55	427066.33	2790422.20
427	99+900	427124.26	2790399.56	427148.82	2790415.00	427101.41	2790385.19
428	99+950	427150.88	2790357.23	427175.43	2790372.67	427128.02	2790342.86
429	100+000	427177.49	2790314.90	427202.04	2790330.34	427154.63	2790300.53
430	100+050	427204.10	2790272.57	427223.15	2790284.55	427185.05	2790260.60
431	100+100	427230.71	2790230.25	427249.76	2790242.22	427211.66	2790218.27
432	100+150	427257.32	2790187.92	427276.37	2790199.89	427238.27	2790175.94
433	100+200	427283.93	2790145.59	427302.98	2790157.56	427264.89	2790133.61
434	100+250	427310.60	2790103.29	427335.85	2790119.49	427287.03	2790088.17
435	100+300	427339.31	2790062.38	427362.86	2790080.97	427317.33	2790045.03
436	100+350	427372.66	2790025.17	427390.90	2790043.70	427353.02	2790005.22
437	100+400	427410.39	2789992.41	427426.18	2790013.06	427393.38	2789970.16
438	100+450	427451.90	2789964.60	427464.99	2789987.07	427437.81	2789940.41
439	100+500	427496.56	2789942.19	427506.75	2789966.11	427485.59	2789916.43
440	100+550	427543.64	2789925.42	427551.09	2789950.33	427535.61	2789898.59
441	100+600	427591.78	2789911.93	427598.68	2789937.00	427584.35	2789884.94
442	100+650	427639.99	2789898.67	427647.95	2789927.59	427632.56	2789871.67
443	100+700	427688.20	2789885.40	427696.16	2789914.32	427678.38	2789849.72
444	100+750	427736.40	2789872.13	427744.37	2789901.05	427726.59	2789836.46
445	100+800	427784.61	2789858.86	427795.49	2789898.39	427774.79	2789823.19
446	100+850	427832.82	2789845.59	427843.70	2789885.12	427825.39	2789818.60

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
447	100+900	427881.03	2789832.32	427888.99	2789861.25	427873.60	2789805.33
448	100+950	427929.23	2789819.06	427937.20	2789847.98	427921.80	2789792.06
449	101+000	427977.44	2789805.79	427985.40	2789834.71	427968.42	2789773.01
450	101+050	428025.65	2789792.52	428032.55	2789817.59	428016.63	2789759.74
451	101+100	428073.86	2789779.25	428080.76	2789804.32	428064.83	2789746.47
452	101+150	428122.06	2789765.98	428128.96	2789791.05	428105.61	2789706.21
453	101+200	428170.27	2789752.72	428177.17	2789777.78	428153.82	2789692.94
454	101+250	428218.48	2789739.45	428225.38	2789764.52	428196.19	2789658.46
455	101+300	428266.69	2789726.18	428275.71	2789758.96	428244.40	2789645.19
456	101+350	428314.89	2789712.91	428323.92	2789745.69	428292.60	2789631.92
457	101+400	428363.10	2789699.64	428372.12	2789732.43	428340.81	2789618.66
458	101+450	428411.31	2789686.38	428421.13	2789722.05	428385.57	2789592.85
459	101+500	428459.52	2789673.11	428469.33	2789708.78	428433.78	2789579.59
460	101+550	428507.72	2789659.84	428517.54	2789695.51	428481.98	2789566.32
461	101+600	428555.84	2789646.24	428566.62	2789681.63	428527.57	2789553.45
462	101+650	428603.03	2789629.76	428624.01	2789682.75	428589.41	2789595.35
463	101+700	428648.71	2789609.47	428673.96	2789660.57	428632.32	2789576.30
464	101+750	428692.58	2789585.51	428708.03	2789611.23	428673.53	2789553.79
465	101+800	428734.40	2789558.12	428751.61	2789582.70	428713.18	2789527.81
466	101+850	428775.19	2789529.20	428795.46	2789557.73	428721.33	2789453.39
467	101+900	428815.95	2789500.24	428836.22	2789528.78	428762.09	2789424.43
468	101+950	428856.71	2789471.29	428874.08	2789495.74	428813.85	2789410.96
469	102+000	428897.47	2789442.33	428914.84	2789466.79	428854.61	2789382.00
470	102+050	428938.23	2789413.37	428955.61	2789437.83	428895.37	2789353.05
471	102+100	428978.99	2789384.41	428996.37	2789408.87	428936.14	2789324.09
472	102+150	429019.75	2789355.45	429037.16	2789379.88	428979.12	2789298.45
473	102+200	429060.14	2789325.98	429078.22	2789349.91	429017.93	2789270.13
474	102+250	429099.39	2789295.01	429122.91	2789323.58	429054.90	2789240.97
475	102+300	429137.32	2789262.44	429162.00	2789290.00	429118.63	2789241.58
476	102+350	429173.85	2789228.31	429199.67	2789254.82	429145.95	2789199.65
477	102+400	429208.94	2789192.69	429229.29	2789211.92	429179.86	2789165.22
478	102+450	429242.51	2789155.64	429293.84	2789200.24	429216.09	2789132.68
479	102+500	429274.51	2789117.22	429327.65	2789159.65	429247.15	2789095.39
480	102+550	429304.88	2789077.51	429335.54	2789099.96	429285.51	2789063.33
481	102+600	429333.57	2789036.56	429365.14	2789057.72	429306.98	2789018.75
482	102+650	429360.53	2788994.46	429392.95	2789014.28	429333.22	2788977.77
483	102+700	429385.71	2788951.27	429444.28	2788983.80	429357.73	2788935.73
484	102+750	429409.07	2788907.06	429468.94	2788937.13	429357.24	2788881.04
485	102+800	429430.57	2788861.93	429463.38	2788876.73	429377.70	2788838.08
486	102+850	429450.17	2788815.93	429483.56	2788829.41	429396.39	2788794.23
487	102+900	429468.43	2788769.39	429502.00	2788782.38	429434.85	2788756.39

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
488	102+950	429486.48	2788722.76	429520.05	2788735.76	429452.91	2788709.76
489	103+000	429504.53	2788676.13	429532.51	2788686.96	429470.96	2788663.13
490	103+050	429522.58	2788629.50	429550.56	2788640.34	429489.01	2788616.51
491	103+100	429540.64	2788582.88	429568.61	2788593.71	429514.53	2788572.77
492	103+150	429558.69	2788536.25	429586.67	2788547.08	429532.58	2788526.14
493	103+200	429576.74	2788489.62	429609.38	2788502.26	429550.63	2788479.51
494	103+250	429594.80	2788443.00	429627.44	2788455.63	429563.09	2788430.72
495	103+300	429612.85	2788396.37	429640.83	2788407.20	429581.14	2788384.09
496	103+350	429630.90	2788349.74	429658.88	2788360.57	429599.20	2788337.47
497	103+400	429648.96	2788303.11	429676.93	2788313.95	429611.65	2788288.67
498	103+450	429667.01	2788256.49	429694.99	2788267.32	429629.71	2788242.04
499	103+500	429685.06	2788209.86	429713.04	2788220.69	429641.23	2788192.89
500	103+550	429703.11	2788163.23	429731.09	2788174.06	429659.29	2788146.26
501	103+600	429721.17	2788116.61	429754.74	2788129.60	429677.34	2788099.64
502	103+650	429739.22	2788069.98	429772.79	2788082.98	429687.93	2788050.12
503	103+700	429757.27	2788023.35	429790.85	2788036.35	429705.98	2788003.49
504	103+750	429775.33	2787976.72	429801.44	2787986.83	429724.04	2787956.87
505	103+800	429793.38	2787930.10	429819.49	2787940.21	429758.88	2787916.74
506	103+850	429811.43	2787883.47	429844.07	2787896.11	429776.93	2787870.11
507	103+900	429829.49	2787836.84	429857.46	2787847.67	429803.37	2787826.73
508	103+950	429847.54	2787790.22	429875.52	2787801.05	429821.43	2787780.11
509	104+000	429865.59	2787743.59	429893.57	2787754.42	429839.48	2787733.48
510	104+050	429883.64	2787696.96	429911.62	2787707.79	429857.53	2787686.85
511	104+100	429901.70	2787650.33	429929.67	2787661.17	429875.59	2787640.22
512	104+150	429919.75	2787603.71	429947.73	2787614.54	429893.64	2787593.60
513	104+200	429937.80	2787557.08	429965.78	2787567.91	429911.69	2787546.97
514	104+250	429955.86	2787510.45	429983.83	2787521.28	429929.75	2787500.34
515	104+300	429973.91	2787463.83	430001.89	2787474.66	429947.80	2787453.72
516	104+350	429991.96	2787417.20	430019.94	2787428.03	429965.85	2787407.09
517	104+400	430010.02	2787370.57	430037.99	2787381.40	429970.85	2787355.41
518	104+450	430028.07	2787323.94	430056.05	2787334.78	429988.90	2787308.78
519	104+500	430046.12	2787277.32	430088.09	2787293.57	430004.16	2787261.07
520	104+550	430064.18	2787230.69	430106.14	2787246.94	430022.21	2787214.44
521	104+600	430082.23	2787184.06	430124.19	2787200.31	430040.26	2787167.82
522	104+650	430100.28	2787137.44	430142.25	2787153.68	430058.32	2787121.19
523	104+700	430118.33	2787090.81	430160.30	2787107.06	430067.04	2787070.95
524	104+750	430136.39	2787044.18	430178.35	2787060.43	430085.10	2787024.32
525	104+800	430154.44	2786997.55	430182.42	2787008.39	430126.46	2786986.72
526	104+850	430172.49	2786950.93	430200.47	2786961.76	430144.52	2786940.10
527	104+900	430190.55	2786904.30	430244.63	2786925.24	430129.00	2786880.47
528	104+950	430208.60	2786857.67	430245.90	2786872.12	430147.05	2786833.84

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
529	105+000	430226.65	2786811.05	430268.62	2786827.29	430203.34	2786802.02
530	105+050	430244.71	2786764.42	430286.67	2786780.67	430221.39	2786755.39
531	105+100	430262.76	2786717.79	430304.72	2786734.04	430239.44	2786708.77
532	105+150	430280.81	2786671.16	430322.78	2786687.41	430214.60	2786645.53
533	105+200	430298.86	2786624.54	430340.83	2786640.79	430275.55	2786615.51
534	105+250	430316.92	2786577.91	430352.35	2786591.63	430293.60	2786568.88
535	105+300	430334.97	2786531.28	430370.41	2786545.00	430285.55	2786512.15
536	105+350	430353.02	2786484.66	430388.46	2786498.38	430320.38	2786472.02
537	105+400	430371.08	2786438.03	430415.84	2786455.36	430338.44	2786425.39
538	105+450	430389.13	2786391.40	430435.76	2786409.46	430327.58	2786367.57
539	105+500	430407.18	2786344.77	430453.81	2786362.83	430367.08	2786329.25
540	105+550	430425.24	2786298.15	430471.86	2786316.20	430385.14	2786282.62
541	105+600	430443.29	2786251.52	430489.92	2786269.57	430403.19	2786236.00
542	105+650	430461.34	2786204.89	430482.32	2786213.02	430440.36	2786196.77
543	105+700	430479.39	2786158.27	430500.38	2786166.39	430458.41	2786150.14
544	105+750	430497.45	2786111.64	430518.43	2786119.76	430476.47	2786103.52
545	105+800	430515.50	2786065.01	430536.48	2786073.14	430494.52	2786056.89
546	105+850	430533.55	2786018.39	430562.46	2786029.58	430498.12	2786004.66
547	105+900	430551.61	2785971.76	430580.52	2785982.95	430516.17	2785958.04
548	105+950	430569.66	2785925.13	430598.57	2785936.32	430534.22	2785911.41
549	106+000	430587.69	2785878.50	430608.71	2785886.54	430566.68	2785870.45
550	106+050	430604.38	2785831.37	430629.20	2785839.10	430577.65	2785823.04
551	106+100	430616.37	2785782.86	430641.95	2785787.52	430588.82	2785777.85
552	106+150	430622.24	2785733.24	430648.20	2785734.68	430594.28	2785731.70
553	106+200	430621.87	2785683.28	430660.78	2785680.55	430589.95	2785685.51
554	106+250	430615.28	2785633.75	430653.54	2785626.20	430583.88	2785639.94
555	106+300	430602.56	2785585.42	430639.59	2785573.16	430572.19	2785595.48
556	106+350	430583.96	2785539.04	430619.28	2785522.50	430551.36	2785554.32
557	106+400	430561.25	2785494.51	430585.04	2785481.75	430529.52	2785511.52
558	106+450	430537.57	2785450.47	430561.35	2785437.68	430505.86	2785467.52
559	106+500	430513.89	2785406.44	430543.83	2785390.33	430459.28	2785435.80
560	106+550	430490.20	2785362.40	430520.15	2785346.30	430435.60	2785391.77
561	106+600	430466.52	2785318.37	430501.75	2785299.42	430411.92	2785347.73
562	106+650	430442.84	2785274.33	430478.06	2785255.38	430388.23	2785303.70
563	106+700	430419.15	2785230.29	430443.81	2785217.03	430364.55	2785259.66
564	106+750	430395.47	2785186.26	430420.13	2785173.00	430362.88	2785203.78
565	106+800	430371.79	2785142.22	430393.82	2785130.41	430339.18	2785159.71
566	106+850	430349.27	2785097.59	430372.04	2785087.28	430326.49	2785107.90
567	106+900	430331.54	2785050.88	430355.42	2785043.48	430307.66	2785058.27
568	106+950	430319.77	2785002.31	430344.39	2784997.96	430295.16	2785006.67
569	107+000	430314.16	2784952.66	430344.12	2784951.16	430289.19	2784953.92

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
570	107+050	430314.56	2784902.69	430344.51	2784904.31	430289.59	2784901.33
571	107+100	430317.95	2784852.80	430352.86	2784855.29	430293.02	2784851.03
572	107+150	430321.51	2784802.93	430356.42	2784805.42	430291.58	2784800.80
573	107+200	430325.07	2784753.06	430359.98	2784755.55	430295.14	2784750.92
574	107+250	430328.62	2784703.18	430363.53	2784705.67	430275.76	2784699.41
575	107+300	430332.18	2784653.31	430367.09	2784655.80	430279.31	2784649.54
576	107+350	430335.74	2784603.44	430370.65	2784605.93	430243.97	2784596.89
577	107+400	430339.29	2784553.56	430396.15	2784557.62	430247.53	2784547.02
578	107+450	430342.85	2784503.69	430399.70	2784507.75	430281.01	2784499.28
579	107+500	430346.41	2784453.82	430403.26	2784457.87	430284.56	2784449.41
580	107+550	430349.96	2784403.94	430406.82	2784408.00	430288.12	2784399.53
581	107+600	430353.52	2784354.07	430400.40	2784357.41	430291.68	2784349.66
582	107+650	430356.59	2784304.17	430403.56	2784306.07	430299.64	2784301.86
583	107+700	430356.40	2784254.19	430403.32	2784251.42	430299.50	2784257.55
584	107+750	430350.35	2784204.59	430396.56	2784195.99	430294.31	2784215.02
585	107+800	430338.16	2784156.13	430375.31	2784144.27	430301.96	2784167.69
586	107+850	430320.02	2784109.57	430355.40	2784093.18	430285.54	2784125.55
587	107+900	430296.22	2784065.64	430329.28	2784044.96	430264.00	2784085.79
588	107+950	430267.12	2784025.01	430292.70	2784004.16	430243.87	2784043.97
589	108+000	430233.21	2783988.31	430256.10	2783964.54	430212.41	2784009.93
590	108+050	430195.89	2783955.05	430217.18	2783929.84	430176.54	2783977.97
591	108+100	430157.51	2783923.01	430178.63	2783897.66	430138.31	2783946.06
592	108+150	430119.09	2783891.01	430133.49	2783873.72	430104.69	2783908.30
593	108+200	430080.68	2783859.01	430095.08	2783841.72	430066.28	2783876.29
594	108+250	430042.26	2783827.00	430056.66	2783809.72	430027.86	2783844.29
595	108+300	430003.84	2783795.00	430018.24	2783777.71	429989.44	2783812.29
596	108+350	429965.43	2783763.00	429979.83	2783745.71	429951.03	2783780.28
597	108+400	429927.01	2783731.00	429941.39	2783713.69	429912.63	2783748.30
598	108+450	429888.07	2783699.64	429901.75	2783681.78	429874.39	2783717.51
599	108+500	429847.13	2783670.97	429859.13	2783651.94	429835.12	2783689.99
600	108+550	429803.58	2783646.44	429813.63	2783626.31	429793.53	2783666.58
601	108+600	429757.80	2783626.39	429765.78	2783605.36	429749.81	2783647.43
602	108+650	429710.25	2783611.01	429716.09	2783589.28	429704.40	2783632.74
603	108+700	429661.39	2783600.45	429665.04	2783578.25	429657.75	2783622.65
604	108+750	429611.73	2783594.82	429613.15	2783572.37	429610.32	2783617.28
605	108+800	429561.76	2783594.10	429561.11	2783571.61	429562.40	2783616.60
606	108+850	429511.83	2783596.81	429509.72	2783566.89	429513.66	2783622.75
607	108+900	429461.96	2783600.41	429459.80	2783570.49	429463.84	2783626.34
608	108+950	429412.09	2783604.02	429409.93	2783574.09	429414.90	2783642.91
609	109+000	429362.22	2783607.62	429360.06	2783577.70	429365.03	2783646.52
610	109+050	429312.35	2783611.22	429310.19	2783581.30	429315.16	2783650.12

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
611	109+100	429262.48	2783614.83	429260.03	2783580.92	429265.29	2783653.73
612	109+150	429212.61	2783618.43	429210.16	2783584.52	429216.58	2783673.29
613	109+200	429162.74	2783622.04	429160.29	2783588.13	429166.71	2783676.89
614	109+250	429112.87	2783625.64	429110.78	2783596.72	429116.84	2783680.50
615	109+300	429063.00	2783629.25	429060.91	2783600.32	429065.60	2783665.15
616	109+350	429013.13	2783632.85	429011.04	2783603.93	429015.73	2783668.76
617	109+400	428963.26	2783636.46	428961.64	2783614.01	428964.89	2783658.90
618	109+450	428913.39	2783640.06	428911.78	2783617.62	428915.01	2783662.50
619	109+500	428863.49	2783643.11	428862.45	2783620.63	428864.53	2783665.58
620	109+550	428813.51	2783644.64	428813.18	2783622.14	428813.85	2783667.14
621	109+600	428763.52	2783644.61	428763.88	2783622.11	428763.15	2783667.10
622	109+650	428713.54	2783643.01	428714.61	2783620.54	428712.48	2783665.49
623	109+700	428663.64	2783639.86	428665.41	2783617.43	428661.88	2783662.29
624	109+750	428613.86	2783635.21	428616.17	2783612.83	428611.55	2783657.59
625	109+800	428564.13	2783630.07	428566.44	2783607.69	428561.81	2783652.45
626	109+850	428514.39	2783624.93	428518.71	2783583.16	428509.87	2783668.70
627	109+900	428464.66	2783619.79	428468.97	2783578.02	428460.13	2783663.56
628	109+950	428414.92	2783614.65	428419.24	2783572.88	428407.11	2783690.25
629	110+000	428365.19	2783609.51	428369.50	2783567.74	428357.37	2783685.11
630	110+050	428315.45	2783604.37	428319.36	2783566.58	428307.64	2783679.97
631	110+100	428265.72	2783599.23	428269.62	2783561.44	428256.67	2783686.77
632	110+150	428215.98	2783594.09	428220.40	2783551.32	428206.94	2783681.63
633	110+200	428166.25	2783588.95	428170.67	2783546.18	428157.20	2783676.49
634	110+250	428116.51	2783583.81	428120.42	2783546.02	428110.04	2783646.48
635	110+300	428066.78	2783578.67	428070.68	2783540.88	428057.63	2783667.20
636	110+350	428017.04	2783573.54	428020.88	2783535.74	428002.58	2783715.81
637	110+400	427967.24	2783569.06	427970.81	2783522.20	427956.38	2783711.65
638	110+450	427917.34	2783565.96	427918.98	2783532.00	427912.85	2783658.85
639	110+500	427867.37	2783564.24	427868.07	2783530.25	427865.46	2783657.22
640	110+550	427817.38	2783563.86	427817.31	2783517.86	427817.54	2783673.86
641	110+600	427767.38	2783563.94	427767.30	2783517.95	427767.57	2783673.94
642	110+650	427717.38	2783564.03	427717.32	2783530.03	427717.52	2783649.03
643	110+700	427667.38	2783564.12	427667.32	2783530.12	427667.52	2783649.12
644	110+750	427617.38	2783564.20	427617.33	2783535.20	427617.52	2783649.20
645	110+800	427567.38	2783564.29	427567.33	2783535.29	427567.47	2783617.29
646	110+850	427517.38	2783564.38	427517.33	2783535.38	427517.43	2783594.38
647	110+900	427467.38	2783564.46	427467.31	2783528.46	427467.43	2783594.46
648	110+950	427417.38	2783564.55	427417.31	2783528.55	427417.43	2783594.55
649	111+000	427367.38	2783564.64	427367.31	2783528.64	427367.43	2783594.64
650	111+050	427317.38	2783564.72	427317.32	2783532.72	427317.44	2783601.72
651	111+100	427267.38	2783564.81	427267.32	2783532.81	427267.44	2783601.81

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
652	111+150	427217.38	2783564.89	427217.34	2783542.39	427217.41	2783587.39
653	111+200	427167.38	2783564.88	427167.77	2783521.88	427166.70	2783638.88
654	111+250	427117.43	2783562.87	427120.98	2783520.02	427111.31	2783636.62
655	111+300	427067.97	2783555.73	427076.76	2783513.64	427052.85	2783628.17
656	111+350	427019.79	2783542.49	427029.54	2783514.11	427002.91	2783591.67
657	111+400	426973.64	2783523.34	426986.84	2783496.40	426930.07	2783612.24
658	111+450	426930.23	2783498.59	426946.69	2783473.51	426875.92	2783581.36
659	111+500	426890.25	2783468.62	426904.85	2783451.49	426875.66	2783485.74
660	111+550	426854.30	2783433.91	426870.85	2783418.67	426837.75	2783449.15
661	111+600	426821.90	2783395.84	426839.43	2783381.74	426804.37	2783409.95
662	111+650	426790.79	2783356.70	426808.43	2783342.72	426773.16	2783370.68
663	111+700	426759.73	2783317.52	426777.36	2783303.54	426742.10	2783331.50
664	111+750	426728.67	2783278.34	426746.30	2783264.36	426711.04	2783292.32
665	111+800	426697.60	2783239.16	426719.54	2783221.76	426659.99	2783268.98
666	111+850	426666.54	2783199.98	426688.48	2783182.58	426628.93	2783229.80
667	111+900	426635.47	2783160.80	426687.97	2783119.18	426573.57	2783209.88
668	111+950	426604.41	2783121.62	426631.84	2783099.88	426562.88	2783154.55
669	112+000	426573.35	2783082.44	426600.77	2783060.70	426531.82	2783115.37
670	112+050	426542.28	2783043.26	426569.71	2783021.52	426500.75	2783076.19
671	112+100	426511.22	2783004.08	426528.85	2782990.11	426493.59	2783018.06
672	112+150	426480.15	2782964.90	426497.78	2782950.93	426462.52	2782978.88
673	112+200	426449.09	2782925.73	426466.72	2782911.75	426431.46	2782939.70
674	112+250	426418.02	2782886.55	426435.66	2782872.57	426400.39	2782900.53
675	112+300	426386.96	2782847.37	426404.59	2782833.39	426369.33	2782861.35
676	112+350	426355.90	2782808.19	426373.53	2782794.21	426338.27	2782822.17
677	112+400	426325.04	2782768.85	426342.95	2782755.24	426307.12	2782782.46
678	112+450	426296.16	2782728.04	426327.10	2782707.76	426245.15	2782761.49
679	112+500	426270.26	2782685.29	426302.57	2782667.26	426216.99	2782715.01
680	112+550	426247.48	2782640.79	426309.07	2782611.98	426221.21	2782653.08
681	112+600	426227.89	2782594.80	426291.23	2782570.06	426200.87	2782605.35
682	112+650	426210.15	2782548.05	426241.97	2782536.06	426183.01	2782558.27
683	112+700	426192.53	2782501.26	426224.34	2782489.27	426095.20	2782537.92
684	112+750	426174.90	2782454.47	426206.72	2782442.48	426077.58	2782491.13
685	112+800	426157.27	2782407.68	426196.58	2782392.87	426109.55	2782425.66
686	112+850	426139.65	2782360.89	426178.95	2782346.08	426091.92	2782378.87
687	112+900	426122.02	2782314.10	426143.08	2782306.17	426100.97	2782322.03
688	112+950	426104.40	2782267.31	426125.45	2782259.38	426083.34	2782275.24
689	113+000	426086.61	2782220.58	426122.90	2782206.30	426056.83	2782232.30
690	113+050	426067.46	2782174.39	426103.22	2782158.82	426006.04	2782201.14
691	113+100	426046.69	2782128.92	426081.86	2782112.08	425986.25	2782157.85
692	113+150	426024.30	2782084.21	426058.87	2782066.16	425937.43	2782129.58

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
693	113+200	426000.94	2782040.01	426035.41	2782021.76	425914.33	2782085.86
694	113+250	425977.54	2781995.82	426012.01	2781977.57	425882.09	2782046.35
695	113+300	425954.15	2781951.63	425980.66	2781937.59	425858.70	2782002.16
696	113+350	425930.75	2781907.44	425957.26	2781893.40	425817.63	2781967.33
697	113+400	425907.35	2781863.25	425933.87	2781849.21	425794.23	2781923.15
698	113+450	425883.96	2781819.06	425910.47	2781805.03	425858.33	2781832.63
699	113+500	425860.56	2781774.87	425887.07	2781760.84	425834.93	2781788.44
700	113+550	425837.16	2781730.69	425863.68	2781716.65	425766.46	2781768.12
701	113+600	425813.77	2781686.50	425851.77	2781666.38	425743.07	2781723.93
702	113+650	425790.37	2781642.31	425828.37	2781622.19	425719.67	2781679.74
703	113+700	425766.98	2781598.12	425786.86	2781587.59	425747.09	2781608.65
704	113+750	425743.58	2781553.93	425763.46	2781543.40	425723.69	2781564.46
705	113+800	425719.94	2781509.87	425822.20	2781453.03	425694.59	2781523.96
706	113+850	425694.34	2781466.93	425792.93	2781403.92	425669.91	2781482.55
707	113+900	425666.12	2781425.67	425746.13	2781367.36	425637.03	2781446.87
708	113+950	425636.10	2781385.68	425714.98	2781325.85	425607.42	2781407.44
709	114+000	425605.88	2781345.85	425623.81	2781332.25	425587.96	2781359.45
710	114+050	425575.66	2781306.01	425593.59	2781292.42	425557.74	2781319.61
711	114+100	425545.44	2781266.18	425563.37	2781252.58	425527.52	2781279.78
712	114+150	425515.22	2781226.35	425533.15	2781212.75	425497.30	2781239.95
713	114+200	425485.00	2781186.51	425502.93	2781172.91	425467.08	2781200.11
714	114+250	425454.37	2781147.00	425471.85	2781132.82	425436.90	2781161.17
715	114+300	425421.17	2781109.64	425459.47	2781071.57	425336.06	2781194.24
716	114+350	425383.80	2781076.47	425417.05	2781033.93	425309.90	2781171.02
717	114+400	425342.59	2781048.22	425370.28	2781001.86	425324.64	2781078.27
718	114+450	425298.17	2781025.33	425307.21	2781004.72	425289.13	2781045.93
719	114+500	425251.26	2781008.13	425257.74	2780986.58	425244.77	2781029.68
720	114+550	425202.85	2780995.63	425207.87	2780973.70	425197.84	2781017.57
721	114+600	425154.04	2780984.80	425158.89	2780962.83	425149.19	2781006.77
722	114+650	425105.21	2780974.03	425110.06	2780952.06	425100.37	2780996.00
723	114+700	425056.39	2780963.26	425064.14	2780928.10	425046.69	2781007.20
724	114+750	425007.56	2780952.49	425015.32	2780917.33	424997.87	2780996.43
725	114+800	424958.74	2780941.71	424963.58	2780919.74	424953.89	2780963.69
726	114+850	424909.91	2780930.94	424914.76	2780908.97	424905.06	2780952.92
727	114+900	424861.08	2780920.17	424865.93	2780898.20	424856.24	2780942.14
728	114+950	424812.26	2780909.40	424820.66	2780871.32	424803.86	2780947.49
729	115+000	424763.43	2780898.63	424771.83	2780860.54	424755.03	2780936.71
730	115+050	424714.61	2780887.86	424721.07	2780858.56	424706.20	2780925.94
731	115+100	424665.78	2780877.09	424672.24	2780847.79	424655.87	2780922.01
732	115+150	424616.95	2780866.31	424623.42	2780837.02	424607.04	2780911.23
733	115+200	424568.13	2780855.52	424573.06	2780833.57	424563.21	2780877.48

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
734	115+250	424519.61	2780843.48	424525.78	2780821.84	424513.45	2780865.12
735	115+300	424472.39	2780827.13	424481.04	2780806.36	424463.74	2780847.91
736	115+350	424427.55	2780805.09	424438.72	2780785.55	424416.38	2780824.62
737	115+400	424385.81	2780777.62	424399.33	2780759.63	424372.29	2780795.61
738	115+450	424347.82	2780745.16	424363.47	2780729.00	424332.16	2780761.33
739	115+500	424314.17	2780708.22	424331.72	2780694.14	424296.62	2780722.31
740	115+550	424285.28	2780667.45	424315.70	2780648.20	424259.93	2780683.49
741	115+600	424259.81	2780624.43	424291.12	2780606.66	424233.72	2780639.23
742	115+650	424235.19	2780580.91	424266.52	2780563.18	424209.08	2780595.69
743	115+700	424210.56	2780537.40	424230.14	2780526.31	424190.98	2780548.48
744	115+750	424185.94	2780493.88	424205.52	2780482.80	424166.36	2780504.96
745	115+800	424161.31	2780450.36	424180.90	2780439.28	424141.73	2780461.44
746	115+850	424136.69	2780406.85	424156.27	2780395.77	424117.11	2780417.93
747	115+900	424112.06	2780363.33	424131.65	2780352.25	424092.48	2780374.41
748	115+950	424087.30	2780319.89	424106.69	2780308.48	424067.91	2780331.31
749	116+000	424060.00	2780278.04	424078.10	2780264.67	424041.90	2780291.40
750	116+050	424027.86	2780239.78	424044.15	2780224.26	424011.57	2780255.30
751	116+100	423991.20	2780205.82	424005.43	2780188.39	423976.97	2780223.25
752	116+150	423950.60	2780176.70	423962.54	2780157.63	423938.65	2780195.77
753	116+200	423906.70	2780152.83	423916.31	2780132.49	423897.08	2780173.17
754	116+250	423860.95	2780132.65	423869.83	2780111.97	423852.08	2780153.32
755	116+300	423815.01	2780112.92	423823.88	2780092.25	423806.13	2780133.60
756	116+350	423769.06	2780093.20	423777.94	2780072.52	423760.19	2780113.88
757	116+400	423723.12	2780073.47	423745.21	2780022.02	423714.24	2780094.15
758	116+450	423677.55	2780052.91	423702.41	2780002.72	423667.57	2780073.07
759	116+500	423634.21	2780028.04	423658.44	2779991.31	423614.38	2780058.09
760	116+550	423594.30	2779997.97	423622.93	2779964.55	423570.89	2780025.31
761	116+600	423558.46	2779963.16	423575.11	2779948.03	423541.81	2779978.29
762	116+650	423527.23	2779924.15	423545.64	2779911.21	423508.82	2779937.09
763	116+700	423500.59	2779881.86	423520.02	2779870.51	423481.16	2779893.20
764	116+750	423475.58	2779838.56	423495.07	2779827.32	423456.09	2779849.80
765	116+800	423450.60	2779795.25	423470.09	2779784.01	423431.11	2779806.50
766	116+850	423425.61	2779751.94	423445.10	2779740.70	423406.12	2779763.19
767	116+900	423400.63	2779708.63	423420.12	2779697.39	423381.14	2779719.88
768	116+950	423375.64	2779665.32	423395.13	2779654.08	423356.15	2779676.57
769	117+000	423350.66	2779622.01	423370.14	2779610.77	423331.17	2779633.26
770	117+050	423325.67	2779578.70	423380.24	2779547.22	423247.71	2779623.68
771	117+100	423300.68	2779535.39	423355.25	2779503.91	423202.80	2779591.86
772	117+150	423275.70	2779492.08	423330.27	2779460.60	423177.82	2779548.55
773	117+200	423250.78	2779448.74	423305.66	2779417.80	423163.66	2779497.84
774	117+250	423227.99	2779404.25	423285.56	2779378.65	423136.62	2779444.89

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
775	117+300	423210.58	2779357.42	423254.62	2779344.11	423149.32	2779375.93
776	117+350	423199.15	2779308.78	423244.49	2779301.06	423136.05	2779319.51
777	117+400	423193.86	2779259.09	423229.83	2779257.53	423159.89	2779260.57
778	117+450	423194.81	2779209.13	423230.69	2779212.06	423160.93	2779206.36
779	117+500	423201.98	2779159.68	423224.01	2779164.24	423179.94	2779155.12
780	117+550	423213.75	2779111.09	423235.53	2779116.75	423191.98	2779105.43
781	117+600	423226.33	2779062.70	423248.10	2779068.36	423204.55	2779057.04
782	117+650	423238.90	2779014.30	423260.68	2779019.96	423217.12	2779008.65
783	117+700	423251.47	2778965.91	423273.25	2778971.57	423229.69	2778960.25
784	117+750	423264.04	2778917.52	423285.82	2778923.17	423242.27	2778911.86
785	117+800	423276.62	2778869.12	423298.39	2778874.78	423254.84	2778863.47
786	117+850	423289.19	2778820.73	423310.97	2778826.39	423267.41	2778815.07
787	117+900	423301.76	2778772.34	423323.54	2778777.99	423279.99	2778766.68
788	117+950	423314.33	2778723.94	423336.11	2778729.60	423292.56	2778718.29
789	118+000	423326.91	2778675.55	423348.68	2778681.21	423305.13	2778669.89
790	118+050	423339.48	2778627.16	423361.26	2778632.81	423317.70	2778621.50
791	118+100	423352.06	2778578.76	423373.83	2778584.46	423330.29	2778573.07
792	118+150	423365.72	2778530.67	423387.15	2778537.51	423344.28	2778523.83
793	118+200	423382.73	2778483.67	423403.58	2778492.14	423361.88	2778475.20
794	118+250	423403.31	2778438.11	423423.44	2778448.16	423383.17	2778428.07
795	118+300	423427.32	2778394.27	423446.63	2778405.82	423408.02	2778382.72
796	118+350	423453.91	2778351.93	423503.59	2778383.75	423401.70	2778318.49
797	118+400	423480.87	2778309.82	423530.56	2778341.64	423428.66	2778276.38
798	118+450	423507.84	2778267.72	423600.47	2778327.04	423455.63	2778234.28
799	118+500	423534.80	2778225.61	423627.44	2778284.94	423482.59	2778192.17
800	118+550	423561.77	2778183.51	423611.45	2778215.33	423532.30	2778164.63
801	118+600	423588.74	2778141.40	423638.42	2778173.22	423559.26	2778122.53
802	118+650	423615.70	2778099.30	423634.65	2778111.43	423596.76	2778087.16
803	118+700	423642.67	2778057.19	423661.62	2778069.33	423623.72	2778045.06
804	118+750	423669.44	2778014.96	423688.61	2778026.75	423650.27	2778003.18
805	118+800	423694.27	2777971.58	423714.16	2777982.10	423674.39	2777961.05
806	118+850	423716.17	2777926.64	423749.95	2777941.73	423683.30	2777911.96
807	118+900	423735.02	2777880.34	423769.74	2777893.14	423701.25	2777867.88
808	118+950	423750.75	2777832.88	423786.24	2777843.35	423716.22	2777822.70
809	119+000	423763.93	2777784.66	423825.82	2777800.97	423729.12	2777775.48
810	119+050	423776.68	2777736.31	423838.56	2777752.62	423741.87	2777727.13
811	119+100	423789.42	2777687.96	423877.42	2777711.15	423758.48	2777679.80
812	119+150	423802.17	2777639.61	423890.16	2777662.81	423771.22	2777631.45
813	119+200	423814.91	2777591.26	423902.90	2777614.46	423783.97	2777583.10
814	119+250	423827.65	2777542.91	423915.65	2777566.11	423796.71	2777534.76
815	119+300	423840.40	2777494.56	423899.38	2777510.11	423809.46	2777486.41

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
816	119+350	423853.14	2777446.22	423912.13	2777461.76	423788.36	2777429.14
817	119+400	423865.89	2777397.87	423924.87	2777413.42	423801.10	2777380.79
818	119+450	423878.76	2777349.55	423942.32	2777367.32	423811.43	2777341.75
819	119+500	423894.33	2777302.06	423955.77	2777326.19	423852.45	2777285.61
820	119+550	423915.47	2777256.79	423988.34	2777296.53	423875.97	2777235.24
821	119+600	423942.09	2777214.50	424009.43	2777263.02	423918.56	2777197.55
822	119+650	423973.77	2777175.86	424007.45	2777207.19	423945.33	2777164.05
823	119+700	424009.90	2777141.33	424040.07	2777176.06	423990.88	2777119.44
824	119+750	424048.13	2777109.11	424062.56	2777126.36	424033.69	2777091.85
825	119+800	424086.48	2777077.02	424100.91	2777094.28	424072.04	2777059.77
826	119+850	424124.83	2777044.94	424167.18	2777095.56	424101.73	2777017.33
827	119+900	424163.18	2777012.86	424205.53	2777063.48	424140.08	2776985.25
828	119+950	424201.53	2776980.77	424243.88	2777031.40	424178.43	2776953.16
829	120+000	424239.87	2776948.69	424254.34	2776965.92	424225.40	2776931.45
830	120+050	424277.52	2776915.80	424292.84	2776932.28	424262.21	2776899.31
831	120+100	424312.81	2776880.39	424329.35	2776895.65	424296.28	2776865.13
832	120+150	424345.27	2776842.38	424362.93	2776856.32	424327.62	2776828.44
833	120+200	424374.72	2776801.99	424393.40	2776814.53	424356.04	2776789.44
834	120+250	424401.49	2776759.76	424420.67	2776771.53	424382.32	2776747.99
835	120+300	424427.64	2776717.14	424446.82	2776728.90	424408.46	2776705.38
836	120+350	424453.78	2776674.52	424484.47	2776693.34	424429.06	2776659.36
837	120+400	424479.92	2776631.90	424510.61	2776650.72	424455.20	2776616.74
838	120+450	424506.06	2776589.28	424536.75	2776608.10	424474.52	2776569.93
839	120+500	424532.61	2776546.91	424562.75	2776566.60	424506.66	2776529.95
840	120+550	424561.24	2776505.93	424590.09	2776527.45	424536.39	2776487.39
841	120+600	424592.37	2776466.81	424619.83	2776490.10	424568.73	2776446.76
842	120+650	424625.89	2776429.72	424651.83	2776454.68	424568.23	2776374.26
843	120+700	424661.65	2776394.79	424681.94	2776416.90	424607.57	2776335.85
844	120+750	424699.15	2776361.72	424718.77	2776384.41	424646.84	2776301.19
845	120+800	424736.98	2776329.02	424756.60	2776351.72	424684.67	2776268.49
846	120+850	424774.81	2776296.33	424794.43	2776319.03	424722.50	2776235.80
847	120+900	424812.64	2776263.64	424832.26	2776286.33	424764.91	2776208.40
848	120+950	424850.47	2776230.94	424879.24	2776264.23	424802.74	2776175.71
849	121+000	424888.30	2776198.25	424917.07	2776231.54	424852.34	2776156.64
850	121+050	424926.13	2776165.56	424954.90	2776198.85	424890.17	2776123.94
851	121+100	424963.96	2776132.86	424978.67	2776149.89	424949.25	2776115.84
852	121+150	425001.79	2776100.17	425016.50	2776117.19	424987.08	2776083.14
853	121+200	425039.62	2776067.48	425061.85	2776093.20	425020.01	2776044.78
854	121+250	425077.46	2776034.79	425113.35	2776076.47	425057.88	2776012.05
855	121+300	425115.82	2776002.72	425150.26	2776045.60	425071.98	2775948.15
856	121+350	425155.44	2775972.23	425188.07	2776016.50	425113.91	2775915.88

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
857	121+400	425196.30	2775943.41	425213.07	2775968.28	425149.88	2775874.60
858	121+450	425238.32	2775916.32	425254.04	2775941.87	425194.81	2775845.64
859	121+500	425281.43	2775891.01	425296.08	2775917.19	425240.91	2775818.58
860	121+550	425325.56	2775867.51	425346.33	2775908.56	425309.76	2775836.28
861	121+600	425370.63	2775845.87	425389.67	2775887.75	425356.15	2775814.01
862	121+650	425416.57	2775826.13	425433.85	2775868.76	425403.42	2775793.69
863	121+700	425463.18	2775808.04	425471.18	2775829.07	425455.18	2775787.01
864	121+750	425509.91	2775790.27	425517.91	2775811.30	425501.91	2775769.24
865	121+800	425556.65	2775772.49	425564.65	2775793.52	425548.65	2775751.46
866	121+850	425603.38	2775754.72	425619.02	2775795.84	425590.58	2775721.07
867	121+900	425650.12	2775736.94	425665.76	2775778.07	425637.32	2775703.30
868	121+950	425696.85	2775719.17	425704.85	2775740.20	425688.85	2775698.14
869	122+000	425743.58	2775701.40	425751.58	2775722.43	425735.59	2775680.37
870	122+050	425790.32	2775683.62	425798.32	2775704.65	425782.32	2775662.59
871	122+100	425837.05	2775665.85	425845.05	2775686.88	425829.05	2775644.82
872	122+150	425883.79	2775648.07	425891.78	2775669.10	425875.79	2775627.04
873	122+200	425930.52	2775630.30	425938.52	2775651.33	425922.52	2775609.27
874	122+250	425977.25	2775612.52	425994.72	2775633.56	425964.06	2775591.50
875	122+300	426023.98	2775594.75	426038.63	2775615.79	426003.94	2775573.73
876	122+350	426069.66	2775577.00	426085.72	2775600.02	426048.25	2775556.00
877	122+400	426114.87	2775559.25	426124.82	2775582.25	426104.93	2775538.25
878	122+450	426159.52	2775541.50	426169.71	2775564.50	426149.33	2775520.50
879	122+500	426204.10	2775523.75	426214.29	2775546.75	426193.90	2775502.75
880	122+550	426248.68	2775506.00	426258.83	2775529.00	426238.53	2775485.00
881	122+600	426293.68	2775488.25	426303.01	2775511.25	426284.36	2775467.25
882	122+650	426339.69	2775470.50	426347.98	2775493.50	426331.41	2775449.50
883	122+700	426386.62	2775452.75	426398.19	2775475.75	426365.73	2775431.75
884	122+750	426434.32	2775435.00	426444.56	2775458.00	426415.82	2775414.00
885	122+800	426482.27	2775417.25	426490.77	2775440.25	426461.02	2775396.25
886	122+850	426530.22	2775400.00	426538.72	2775422.50	426511.52	2775378.50
887	122+900	426578.17	2775382.25	426586.67	2775404.75	426559.47	2775360.75
888	122+950	426626.12	2775364.50	426634.62	2775387.00	426610.82	2775343.00
889	123+000	426674.07	2775346.75	426684.55	2775369.25	426665.57	2775325.25
890	123+050	426722.02	2775329.00	426732.51	2775351.50	426713.52	2775307.50
891	123+100	426769.97	2775311.25	426778.47	2775333.75	426760.34	2775289.75
892	123+150	426817.92	2775293.50	426826.42	2775316.00	426808.29	2775272.00
893	123+200	426865.88	2775275.75	426874.38	2775298.25	426858.23	2775254.25
894	123+250	426913.83	2775258.00	426926.58	2775280.50	426906.18	2775236.50
895	123+300	426961.78	2775240.25	426974.53	2775262.75	426950.73	2775218.75
896	123+350	427009.73	2775222.50	427022.48	2775245.00	426998.68	2775201.00
897	123+400	427057.68	2775204.75	427070.43	2775227.25	427049.46	2775183.25

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
898	123+450	427105.63	2775213.30	427118.38	2775256.46	427097.41	2775185.49
899	123+500	427153.58	2775199.14	427166.33	2775242.29	427145.37	2775171.33
900	123+550	427201.53	2775184.97	427210.03	2775213.74	427193.32	2775157.16
901	123+600	427249.48	2775170.80	427257.98	2775199.58	427241.27	2775142.99
902	123+650	427297.40	2775156.52	427306.22	2775185.20	427288.88	2775128.80
903	123+700	427344.95	2775141.08	427354.66	2775169.46	427335.57	2775113.64
904	123+750	427392.00	2775124.16	427402.59	2775152.23	427381.76	2775097.03
905	123+800	427438.50	2775105.77	427449.96	2775133.50	427427.42	2775078.98
906	123+850	427484.40	2775085.95	427503.71	2775128.80	427470.02	2775054.04
907	123+900	427529.65	2775064.70	427550.29	2775106.92	427514.28	2775033.25
908	123+950	427574.26	2775042.11	427591.72	2775075.87	427558.18	2775011.03
909	124+000	427618.67	2775019.14	427636.13	2775052.89	427607.64	2774997.82
910	124+050	427663.08	2774996.16	427680.54	2775029.92	427652.05	2774974.85
911	124+100	427707.49	2774973.19	427724.95	2775006.94	427690.95	2774941.21
912	124+150	427751.90	2774950.21	427768.44	2774982.19	427735.35	2774918.24
913	124+200	427796.31	2774927.24	427812.85	2774959.21	427776.09	2774888.16
914	124+250	427840.71	2774904.26	427857.26	2774936.24	427823.71	2774871.40
915	124+300	427885.12	2774881.29	427901.67	2774913.26	427868.12	2774848.43
916	124+350	427929.53	2774858.31	427946.07	2774890.29	427918.96	2774837.89
917	124+400	427973.94	2774835.34	427990.48	2774867.31	427963.37	2774814.91
918	124+450	428018.35	2774812.36	428034.89	2774844.34	428007.78	2774791.94
919	124+500	428062.76	2774789.39	428073.10	2774809.37	428052.42	2774769.40
920	124+550	428107.17	2774766.41	428117.51	2774786.40	428096.83	2774746.43
921	124+600	428151.58	2774743.44	428174.55	2774787.85	428131.36	2774704.36
922	124+650	428195.99	2774720.46	428228.15	2774782.64	428183.58	2774696.48
923	124+700	428240.39	2774697.49	428272.56	2774759.66	428227.99	2774673.51
924	124+750	428284.80	2774674.51	428316.97	2774736.69	428264.58	2774635.43
925	124+800	428329.21	2774651.54	428351.27	2774694.17	428304.40	2774603.58
926	124+850	428373.62	2774628.56	428395.68	2774671.20	428348.81	2774580.60
927	124+900	428418.03	2774605.59	428440.09	2774648.22	428393.22	2774557.63
928	124+950	428462.44	2774582.61	428476.22	2774609.26	428450.49	2774559.52
929	125+000	428506.85	2774559.64	428520.63	2774586.28	428494.90	2774536.54
930	125+050	428551.26	2774536.66	428561.59	2774556.65	428540.92	2774516.68
931	125+100	428595.72	2774513.79	428605.84	2774533.88	428585.59	2774493.69
932	125+150	428640.64	2774491.85	428655.18	2774522.58	428622.69	2774453.88
933	125+200	428686.11	2774471.04	428699.87	2774502.13	428669.10	2774432.63
934	125+250	428732.07	2774451.37	428745.06	2774482.79	428721.00	2774424.57
935	125+300	428778.31	2774432.34	428800.76	2774486.90	428767.27	2774405.52
936	125+350	428824.55	2774413.31	428847.00	2774467.87	428808.18	2774373.54
937	125+400	428870.78	2774394.28	428893.24	2774448.84	428854.42	2774354.51
938	125+450	428917.02	2774375.25	428927.68	2774401.14	428900.66	2774335.49

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
939	125+500	428963.26	2774356.22	428973.92	2774382.11	428949.94	2774323.85
940	125+550	429009.50	2774337.19	429020.15	2774363.08	428996.18	2774304.82
941	125+600	429055.73	2774318.16	429064.30	2774338.97	429047.17	2774297.35
942	125+650	429101.97	2774299.13	429119.10	2774340.75	429086.75	2774262.14
943	125+700	429148.21	2774280.10	429165.33	2774321.72	429132.98	2774243.11
944	125+750	429194.45	2774261.07	429203.01	2774281.88	429185.88	2774240.27
945	125+800	429240.68	2774242.04	429258.19	2774284.58	429227.74	2774210.60
946	125+850	429286.92	2774223.01	429304.43	2774265.55	429273.98	2774191.57
947	125+900	429333.42	2774204.64	429341.04	2774225.81	429325.80	2774183.47
948	125+950	429381.23	2774190.08	429386.70	2774211.90	429375.75	2774168.25
949	126+000	429430.25	2774180.36	429433.52	2774202.62	429426.98	2774158.09
950	126+050	429480.00	2774175.58	429481.03	2774198.06	429478.97	2774153.10
951	126+100	429529.98	2774175.79	429528.76	2774198.26	429531.20	2774153.32
952	126+150	429579.69	2774180.99	429576.23	2774203.23	429583.15	2774158.76
953	126+200	429628.63	2774191.13	429618.57	2774229.85	429637.68	2774156.29
954	126+250	429676.31	2774206.11	429662.44	2774243.62	429688.80	2774172.34
955	126+300	429722.26	2774225.76	429704.71	2774261.71	429738.06	2774193.42
956	126+350	429766.02	2774249.91	429736.60	2774297.56	429784.93	2774219.28
957	126+400	429807.88	2774277.26	429776.77	2774323.83	429827.87	2774247.32
958	126+450	429849.45	2774305.03	429818.35	2774351.60	429873.89	2774268.44
959	126+500	429891.03	2774332.81	429871.03	2774362.74	429915.47	2774296.22
960	126+550	429932.61	2774360.58	429912.61	2774390.51	429952.05	2774331.47
961	126+600	429974.18	2774388.35	429946.97	2774429.10	429993.63	2774359.25
962	126+650	430015.76	2774416.12	429971.32	2774482.65	430041.31	2774377.87
963	126+700	430057.34	2774443.90	430012.90	2774510.42	430082.89	2774405.65
964	126+750	430098.92	2774471.67	430054.48	2774538.19	430115.58	2774446.72
965	126+800	430140.49	2774499.44	430127.99	2774518.15	430157.16	2774474.50
966	126+850	430182.07	2774527.22	430158.18	2774562.97	430243.17	2774435.75
967	126+900	430223.65	2774554.99	430199.76	2774590.75	430284.75	2774463.52
968	126+950	430265.22	2774582.76	430245.23	2774612.70	430288.00	2774548.67
969	127+000	430306.80	2774610.54	430286.80	2774640.47	430329.58	2774576.44
970	127+050	430348.38	2774638.31	430318.38	2774683.21	430371.15	2774604.22
971	127+100	430390.01	2774665.99	430360.47	2774711.20	430412.44	2774631.67
972	127+150	430432.52	2774692.32	430410.96	2774729.53	430464.59	2774636.94
973	127+200	430476.54	2774716.01	430457.35	2774754.49	430495.28	2774678.42
974	127+250	430521.95	2774736.90	430505.21	2774776.51	430538.31	2774698.22
975	127+300	430568.59	2774754.92	430561.14	2774776.15	430576.03	2774733.69
976	127+350	430616.25	2774769.99	430610.14	2774791.65	430622.36	2774748.34
977	127+400	430664.77	2774782.05	430660.02	2774804.05	430669.51	2774760.06
978	127+450	430713.94	2774791.06	430708.26	2774828.64	430717.30	2774768.82
979	127+500	430763.58	2774796.98	430760.26	2774834.84	430767.60	2774751.16

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
980	127+550	430813.49	2774799.79	430812.54	2774837.78	430814.64	2774753.81
981	127+600	430863.48	2774799.48	430864.65	2774830.46	430862.21	2774765.50
982	127+650	430913.36	2774796.04	430916.45	2774826.89	430909.96	2774762.21
983	127+700	430962.92	2774789.50	430974.57	2774860.55	430957.42	2774755.94
984	127+750	431012.07	2774780.35	431026.14	2774850.97	430999.38	2774716.61
985	127+800	431061.10	2774770.56	431075.21	2774841.17	431048.37	2774706.82
986	127+850	431110.14	2774760.76	431124.24	2774831.37	431097.40	2774697.02
987	127+900	431159.17	2774750.97	431163.58	2774773.03	431154.76	2774728.91
988	127+950	431208.20	2774741.17	431212.61	2774763.24	431203.79	2774719.11
989	128+000	431257.23	2774731.38	431261.64	2774753.44	431252.82	2774709.31
990	128+050	431306.26	2774721.58	431310.67	2774743.65	431301.85	2774699.52
991	128+100	431355.29	2774711.79	431359.70	2774733.85	431350.88	2774689.72
992	128+150	431404.32	2774701.99	431408.73	2774724.06	431399.91	2774679.93
993	128+200	431453.35	2774692.20	431457.76	2774714.26	431448.95	2774670.13
994	128+250	431502.38	2774682.40	431506.79	2774704.47	431497.98	2774660.34
995	128+300	431551.42	2774672.61	431557.29	2774702.02	431541.23	2774621.61
996	128+350	431600.45	2774662.80	431606.37	2774692.21	431590.17	2774611.83
997	128+400	431649.24	2774651.92	431660.72	2774696.46	431636.26	2774601.57
998	128+450	431697.08	2774637.44	431712.23	2774680.87	431686.87	2774608.17
999	128+500	431743.55	2774619.02	431776.50	2774693.02	431716.30	2774557.82
1000	128+550	431788.33	2774596.81	431827.32	2774667.80	431756.07	2774538.08
1001	128+600	431831.20	2774571.10	431874.83	2774639.34	431795.11	2774514.65
1002	128+650	431873.16	2774543.91	431917.28	2774611.84	431831.22	2774479.33
1003	128+700	431915.09	2774516.67	431948.86	2774568.67	431873.16	2774452.10
1004	128+750	431957.03	2774489.44	431990.80	2774541.44	431937.42	2774459.25
1005	128+800	431998.96	2774462.21	432032.73	2774514.20	431979.35	2774432.02
1006	128+850	432041.08	2774435.26	432079.29	2774496.29	432025.69	2774410.68
1007	128+900	432083.72	2774409.16	432120.70	2774470.93	432068.83	2774384.27
1008	128+950	432126.88	2774383.91	432142.26	2774410.82	432112.48	2774358.73
1009	129+000	432170.49	2774359.45	432181.42	2774379.12	432159.55	2774339.79
1010	129+050	432214.18	2774335.15	432225.12	2774354.81	432203.25	2774315.49
1011	129+100	432257.88	2774310.85	432268.82	2774330.51	432246.94	2774291.18
1012	129+150	432301.58	2774286.56	432325.25	2774329.47	432261.02	2774213.00
1013	129+200	432345.93	2774263.48	432367.00	2774307.72	432309.81	2774187.64
1014	129+250	432391.91	2774243.88	432409.23	2774289.72	432372.83	2774193.37
1015	129+300	432439.37	2774228.18	432459.94	2774300.31	432424.56	2774176.25
1016	129+350	432487.97	2774216.49	432498.41	2774269.47	432481.59	2774184.11
1017	129+400	432537.33	2774208.55	432544.65	2774262.05	432532.85	2774175.85
1018	129+450	432586.88	2774201.91	432594.03	2774255.44	432582.52	2774169.20
1019	129+500	432636.44	2774195.29	432640.94	2774228.99	432629.96	2774146.72
1020	129+550	432686.00	2774188.67	432690.50	2774222.38	432679.52	2774140.11

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
1021	129+600	432735.56	2774182.05	432738.54	2774204.36	432732.59	2774159.75
1022	129+650	432785.12	2774175.44	432788.10	2774197.74	432782.14	2774153.13
1023	129+700	432834.68	2774168.82	432837.66	2774191.12	432831.70	2774146.51
1024	129+750	432884.24	2774162.20	432887.22	2774184.50	432881.26	2774139.89
1025	129+800	432933.80	2774155.58	432936.78	2774177.88	432928.11	2774112.96
1026	129+850	432983.36	2774148.96	432986.34	2774171.26	432977.67	2774106.34
1027	129+900	433032.92	2774142.34	433037.16	2774174.06	433022.73	2774066.02
1028	129+950	433082.48	2774135.72	433086.72	2774167.44	433072.29	2774059.40
1029	130+000	433132.04	2774129.10	433136.81	2774164.78	433121.85	2774052.78
1030	130+050	433181.71	2774123.37	433184.55	2774159.26	433175.63	2774046.61
1031	130+100	433231.66	2774121.92	433231.19	2774144.42	433232.14	2774099.43
1032	130+150	433281.52	2774125.47	433278.80	2774147.80	433284.24	2774103.13
1033	130+200	433330.77	2774133.97	433318.49	2774188.61	433344.36	2774073.48
1034	130+250	433378.94	2774147.30	433348.55	2774241.52	433389.69	2774113.99
1035	130+300	433426.35	2774163.19	433394.66	2774256.98	433437.55	2774130.03
1036	130+350	433473.72	2774179.19	433455.79	2774232.25	433484.92	2774146.03
1037	130+400	433521.09	2774195.20	433503.17	2774248.25	433532.29	2774162.04
1038	130+450	433568.46	2774211.20	433561.26	2774232.51	433575.66	2774189.88
1039	130+500	433615.83	2774227.19	433608.67	2774248.52	433622.99	2774205.86
1040	130+550	433663.64	2774241.79	433649.96	2774295.06	433675.83	2774194.33
1041	130+600	433712.72	2774251.17	433705.79	2774305.73	433718.89	2774202.56
1042	130+650	433762.59	2774254.35	433762.48	2774336.35	433762.68	2774182.35
1043	130+700	433812.46	2774251.30	433822.58	2774332.67	433803.58	2774179.85
1044	130+750	433861.56	2774242.05	433878.05	2774306.99	433835.72	2774140.28
1045	130+800	433909.13	2774226.75	433933.59	2774289.13	433870.80	2774128.99
1046	130+850	433954.42	2774205.64	433971.64	2774237.25	433904.20	2774113.43
1047	130+900	433996.72	2774179.05	434017.75	2774208.27	433935.40	2774093.81
1048	130+950	434035.38	2774147.39	434059.89	2774173.76	433989.10	2774097.57
1049	131+000	434069.92	2774111.27	434100.14	2774137.47	434018.54	2774066.72
1050	131+050	434102.06	2774072.96	434132.81	2774098.55	434049.78	2774029.48
1051	131+100	434134.03	2774034.53	434164.78	2774060.11	434081.76	2773991.04
1052	131+150	434166.01	2773996.09	434183.31	2774010.48	434148.71	2773981.70
1053	131+200	434197.99	2773957.65	434215.28	2773972.04	434180.69	2773943.26
1054	131+250	434229.96	2773919.21	434247.26	2773933.60	434212.67	2773904.82
1055	131+300	434261.94	2773880.77	434279.24	2773895.16	434244.64	2773866.38
1056	131+350	434293.92	2773842.34	434311.21	2773856.73	434276.62	2773827.95
1057	131+400	434325.89	2773803.90	434343.19	2773818.29	434308.60	2773789.51
1058	131+450	434357.87	2773765.46	434375.17	2773779.85	434340.57	2773751.07
1059	131+500	434389.85	2773727.02	434407.15	2773741.41	434372.55	2773712.63
1060	131+550	434421.83	2773688.58	434439.12	2773702.97	434404.53	2773674.19
1061	131+600	434453.80	2773650.15	434486.09	2773677.01	434426.13	2773627.12

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
S. No.	DESIGN CHAINAGE	CENTRELINE		LEFT SIDE PROW		RIGHT SIDE PROW	
		Easting	Northing	Easting	Northing	Easting	Northing
1062	131+650	434485.85	2773611.77	434553.62	2773669.46	434458.44	2773588.43
1063	131+700	434519.46	2773574.77	434583.19	2773636.90	434497.98	2773553.82
1064	131+750	434555.62	2773540.24	434593.48	2773582.84	434535.69	2773517.82
1065	131+800	434594.14	2773508.39	434628.87	2773553.58	434575.86	2773484.60
1066	131+850	434634.83	2773479.34	434706.96	2773587.49	434618.18	2773454.38
1067	131+900	434676.67	2773451.97	434747.66	2773560.87	434655.91	2773420.13
1068	131+950	434718.55	2773424.66	434749.68	2773472.41	434691.79	2773383.61
1069	132+000	434760.44	2773397.35	434791.57	2773445.10	434733.68	2773356.31
1070	132+050	434802.32	2773370.05	434814.61	2773388.90	434790.04	2773351.20
1071	132+100	434844.18	2773342.70	434856.62	2773361.45	434831.74	2773323.95
1072	132+150	434884.75	2773313.51	434898.85	2773331.05	434870.66	2773295.97
1073	132+200	434921.67	2773279.84	434937.84	2773295.48	434905.50	2773264.19
1074	132+250	434954.10	2773241.83	434972.10	2773255.33	434936.11	2773228.32
1075	132+300	434981.54	2773200.07	435012.80	2773217.92	434954.62	2773184.69
1076	132+350	435003.56	2773155.21	435036.80	2773169.03	434949.08	2773132.56
1077	132+400	435020.78	2773108.28	435054.88	2773119.84	434964.91	2773089.34
1078	132+450	435036.78	2773060.91	435083.21	2773076.59	435004.57	2773050.03
1079	132+500	435052.78	2773013.54	435079.31	2773022.50	435020.57	2773002.66
1080	132+550	435068.78	2772966.17	435095.31	2772975.13	435036.57	2772955.29
1081	132+600	435084.78	2772918.80	435129.31	2772933.84	435028.88	2772899.92
1082	132+650	435100.78	2772871.43	435145.31	2772886.47	435044.88	2772852.55
1083	132+700	435116.78	2772824.06	435161.31	2772839.10	435060.88	2772805.18
1084	132+750	435132.78	2772776.68	435220.89	2772806.45	435076.88	2772757.80
1085	132+800	435149.69	2772729.64	435236.00	2772764.28	435105.14	2772711.76
1086	132+850	435171.10	2772684.49	435220.10	2772711.60	435129.10	2772661.26
1087	132+900	435197.97	2772642.36	435243.21	2772675.37	435172.12	2772623.50
1088	132+950	435229.88	2772603.91	435251.72	2772624.48	435206.58	2772581.98
1089	133+000	435266.34	2772569.74	435285.45	2772592.87	435245.96	2772545.07
1090	133+050	435306.77	2772540.38	435326.61	2772571.61	435289.61	2772513.37
1091	133+100	435350.00	2772515.28	435367.85	2772547.70	435334.57	2772487.25
1092	133+150	435393.82	2772491.19	435407.31	2772515.73	435378.40	2772463.15
1093	133+200	435437.63	2772467.11	435451.12	2772491.64	435407.28	2772411.90
1094	133+250	435481.45	2772443.02	435494.94	2772467.56	435451.10	2772387.81
1095	133+300	435525.27	2772418.93	435548.39	2772460.99	435494.91	2772363.72
1096	133+320	435542.79	2772409.30	435565.92	2772451.36	435512.44	2772354.09

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.

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 (LHS / RHS / Both)	Village name
	From	To	From	To			
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. 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.

1.2. Width of Median

1.2.1. The width of median including kerb shyness shall be 5 metre (Flushed median) for hilly section (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. Additionally, the contractor shall provide a Thrie-beam crash barrier along the RCC drain side to ensure vehicle safety, as illustrated in the typical cross-sections annexed under Annex-II (Schedule-B).

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. 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.

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 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 finish road level shall be kept 150 mm above the existing 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:

For Main Carriageway

Sr. No.	Location Chainage (km)	No. of Spans	Span / opening (m)	Remarks
1	79+225	2	18.50	Overpass
2	79+705	2	18.50 (Skew length-19.953m)	Overpass
3	81+000	1	40.00 (Skew length-40.749m)	VOP
4	83+030	2	18.50	Overpass
5	83+600	2	18.50	Overpass
6	84+150	2	18.50 (Skew length-20.251m)	Overpass
7	84+555	1	40.00 (Skew length-43.785m)	VOP
8	85+060	2	18.50 (Skew length-19.566m)	Overpass
9	85+430	2	18.50	Overpass
10	85+890	2	18.50 (Skew length-21.362m)	VOP
11	86+800	2	18.50	Overpass
12	87+880	2	18.50 (Skew length-20.763m)	Overpass
13	88+925	2	18.50 (Skew length-19.246m)	Overpass
14	90+060	2	18.50 (Skew length-21.362m)	Overpass
15	90+480	1 1 1	25.0 (Skew length-27.584m) 40.0 (Skew length-44.135m) 25.0 (Skew length-27.584m)	Overpass
16	92+615	2	18.50	Overpass
17	93+230	1	40.00	Overpass
18	93+890	2	18.50	Overpass
19	94+410	2	18.50 (Skew length-23.805m)	VOP
20	95+700	1 1 1	25.0 40.0 25.0	Overpass
21	96+335	2	18.50	Overpass
22	97+080	2	18.50 (Skew length-23.164m)	VOP
23	99+570	2	18.50	Overpass
24	102+200	2	18.50	Overpass
25	102+850	2	18.50 (Skew length-19.452m)	Overpass
26	104+480	2	18.50 (Skew length-24.513m)	Overpass
27	106+280	2	18.50	Overpass
28	110+000	2	18.50	Overpass
29	113+160	2	18.50	Overpass

Sr. No.	Location Chainage (km)	No. of Spans	Span / opening (m)	Remarks
30	118+428	1 1 1	25.0 (Skew length-27.365m) 40.0 (Skew length-43.785m) 25.0 (Skew length-27.365m)	VOP
31	128+680	1 1 1	15.0 40.0 15.0	VOP
32	130+720	1 1 1	30.0 107.00 30.0	VOP
33	132+420	1 1 1	10.0 40.0 10.0	VOP

2.8. Service Roads/Slip Roads/Connecting Roads/cross 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 Cross Roads shall be constructed at the locations and for the lengths indicated below:

S. No.	Design Chainage		Length		Paved Carriageway width including shyness (m)	Total Length (m)	Remarks
	From	To	LHS	RHS			
1	0+000	0+170	170		5.5	170	Cross Road No 1 (Near Ch. 122+800 of Main carriageway)
2	0+000	0+243	243		5.5	243	Cross Road No 2 (Near Ch. 127+800 of Main carriageway)
3	0+000	0+182	182 (cross)		5.5	182	Cross Road No 3 (Near Ch. 128+400 of Main carriageway)
4	0+000	0+179	179		5.5	179	Cross Road No 4 (Near Ch. 128+800 of Main carriageway)
5	0+000	0+400	400		5.5	400	Cross Road No 5 (Near Ch. 130+200 of Main carriageway)

(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:

- i. 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.
- ii. 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.
- iii. 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 purpose 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)/Overpasses

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	79+225	As Per GAD		Yes	2 x 18.50	5.5		
2	79+705			Yes	2 x 18.50 (Skew length-19.953m)	5.5	22	
3	81+000			Yes	1 x 40.00 (Skew length-40.749m)	5.5	11	
4	83+030			Yes	2 x 18.50	5.5		
5	83+600			Yes	2 x 18.50	5.5		
6	84+150			Yes	2 x 18.50 (Skew length-20.251m)	5.5	24	
7	84+555			Yes	1 x 40.00 (Skew length-43.785m)	5.5	24	
8	85+060			Yes	2 x 18.50 (Skew length-19.566m)	5.5	19	
9	85+430			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
10	85+890			Yes	2 x 18.50 (Skew length-21.362m)	5.5	30	
11	86+800			Yes	2 x 18.50	5.5		
12	87+880			Yes	2 x 18.50 (Skew length-20.763m)	5.5	27	
13	88+925			Yes	2 x 18.50 (Skew length-19.246m)	5.5	16	
14	90+060			Yes	2 x 18.50 (Skew length-21.362m)	5.5	30	
15	90+480			Yes	1 x 25.00 (Skew length-27.584m) 1 x 40.00 (Skew length-44.135m) 1 x 25.00 (Skew length-27.584m)	5.5	25	
16	92+615			Yes	2 x 18.50	5.5		
17	93+230			Yes	1 x 40.00	5.5		
18	93+890			Yes	2 x 18.50	5.5		
19	94+410			Yes	2 x 18.50 (Skew length-23.805m)	5.5	39	
20	95+700			Yes	1 x 25.00 1 x 40.00 1 x 25.00	5.5		
21	96+335			Yes	2 x 18.50	5.5		
22	97+080			Yes	2 x 18.50 (Skew length-23.164m)	5.5	37	
23	99+570			Yes	2 x 18.50	5.5		
24	102+200			Yes	2 x 18.50	5.5		
25	102+850			Yes	2 x 18.50 (Skew length-19.452m)	5.5	18	
26	104+480			Yes	2 x 18.50 (Skew length-24.513m)	5.5	41	
27	106+280			Yes	2 x 18.50	5.5		
28	110+000			Yes	2 x 18.50	5.5		
29	113+160			Yes	2 x 18.50	5.5		
30	118+428			Yes	1 x 25.00 (Skew length-27.365m) 1 x 40.00 (Skew length-43.785m) 1 x 25.00 (Skew length-27.365m)	5.5	24	
31	128+680			Yes	1 x 15.00 1 x 40.00 1 x 15.00	5.5		
32	130+720			Yes	1 x 30.00 1 x 107.00 1 x 30.00	5.5		
33	132+420			Yes	1 x 10.00 1 x 40.00 1 x 10.00	5.5		

2.9.2. Vehicular Underpasses (VUP)

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width(m)	Super Structure Provision in Median	Total length & minimum span (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Nil								

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	Total length & minimum span (m)	Minimum Vertical Clearance (m)	Skew Angle (°)
Nil							

2.9.4. Small Vehicular Underpasses (SVUP)/ Utility Underpasses**For Main Carriageway**

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width (m)	Super Structure Provision in Median	Total length (Clear Span) & minimum span (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	78+700	1 x 14.50	1 x 14.50	-	Straight Length- 7m (minimum span7m)	4		
2	80+050	1 x 14.50	1 x 14.50	-	Straight Length - 7m (minimum span7m)	4		
3	89+405	1 x 14.50	1 x 14.50	-	Straight Length - 7m (minimum span7m)	4		
4	94+775	1 x 14.50 (Skew Width-14.944m)	1 x 14.50 (Skew Width-14.944m)	-	Skew Length - 7.214m (minimum span7m)	4	14	
5	97+690	1 x 14.50 (Skew Width-16.133m)	1 x 14.50 (Skew Width-16.133m)	-	Skew Length- 7.788m (minimum span7m)	4	26	
6	98+060	1 x 14.50 (Skew Width-14.724m)	1 x 14.50 (Skew Width-14.724m)	-	Skew Length - 7.108m (minimum span7m)	4	10	
7	100+900	1 x 14.50	1 x 14.50	-	Straight Length - 7m (minimum span7m)	4		
8	108+620	1 x 14.50 (Skew Width-19.512m)	1 x 14.50 (Skew Width-19.512m)	-	Skew Length - 9.419m (minimum span7m)	4	42	

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. Details of Connecting Roads

Sr. No.	Carriageway Widths including Kerb Shyness (m)	Length (m)	Description of Crossroads and Connecting Roads	Remarks
1	5.5	1174	All Crossroads	Mentioned in clause 2.8.2

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	78+600	78+697	97	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
2	78+697	78+704	7	SVUP	SVUP
3	78+704	78+720	16	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
4	78+720	78+740	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
5	78+740	78+820	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
6	78+820	78+840	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
7	78+840	78+860	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
8	78+860	78+880	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
9	78+880	78+900	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
10	78+900	78+920	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
11	78+920	78+940	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
12	78+940	78+960	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
13	78+960	79+000	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
14	79+000	79+020	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
15	79+020	79+040	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
16	79+040	79+060	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
17	79+060	79+080	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
18	79+080	79+100	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
19	79+100	79+160	60	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
20	79+160	79+420	260	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
21	79+420	79+440	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
22	79+440	79+460	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
23	79+460	79+470	10	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
24	79+470	79+590	120	Viaduct	Viaduct
25	79+590	79+620	30	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
26	79+620	79+640	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
27	79+640	79+660	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
28	79+660	79+680	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
29	79+680	79+700	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
30	79+700	79+720	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
31	79+720	79+740	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
32	79+740	79+760	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
33	79+760	79+780	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
34	79+780	79+800	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
35	79+800	79+820	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
36	79+820	79+840	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
37	79+840	79+860	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
38	79+860	79+880	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
39	79+880	79+900	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
40	79+900	79+920	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
41	79+920	79+940	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
42	79+940	79+980	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
43	79+980	80+047	67	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
44	80+047	80+054	7	SVUP	SVUP
45	80+054	80+140	86	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
46	80+140	80+160	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
47	80+160	80+180	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
48	80+180	80+200	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
49	80+200	80+300	100	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
50	80+300	80+320	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
51	80+320	80+500	180	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
52	80+500	80+520	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
53	80+520	80+540	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
54	80+540	80+560	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
55	80+560	80+650	90	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
56	80+650	80+850	200	Viaduct	Viaduct
57	80+850	80+880	30	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
58	80+880	80+900	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
59	80+900	81+440	540	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
60	81+440	81+460	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
61	81+460	81+520	60	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
62	81+520	81+540	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
63	81+540	81+560	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
64	81+560	81+600	40	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
65	81+600	81+640	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
66	81+640	81+660	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
67	81+660	81+703	43	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
68	81+703	81+928	225	Viaduct	Viaduct
69	81+928	81+960	32	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
70	81+960	82+340	380	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
71	82+340	82+360	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
72	82+360	82+400	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
73	82+400	82+430	30	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
74	82+430	82+655	225	Viaduct	Viaduct
75	82+655	82+680	25	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
76	82+680	82+700	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
77	82+700	83+080	380	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
78	83+080	83+100	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
79	83+100	83+120	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
80	83+120	83+140	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
81	83+140	83+180	40	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
82	83+180	83+200	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
83	83+200	83+220	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
84	83+220	83+240	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
85	83+240	83+255	15	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
86	83+255	83+360	105	Viaduct	Viaduct
87	83+360	83+400	40	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
88	83+400	83+420	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
89	83+420	83+460	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
90	83+460	83+480	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
91	83+480	83+680	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
92	83+680	83+720	40	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
93	83+720	83+960	240	Viaduct	Viaduct
94	83+960	83+980	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
95	83+980	84+000	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
96	84+000	84+020	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
97	84+020	84+060	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
98	84+060	84+080	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
99	84+080	84+180	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
100	84+180	84+200	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
101	84+200	84+220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
102	84+220	84+240	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
103	84+240	84+320	80	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
104	84+320	84+340	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
105	84+340	84+360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
106	84+360	84+380	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
107	84+380	84+400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
108	84+400	84+780	380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
109	84+780	84+800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
110	84+800	84+840	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
111	84+840	84+880	40	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
112	84+880	84+925	45	Viaduct	Viaduct
113	84+925	84+960	35	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
114	84+960	84+980	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
115	84+980	85+000	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
116	85+000	85+020	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
117	85+020	85+040	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
118	85+040	85+140	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
119	85+140	85+160	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
120	85+160	85+180	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
121	85+180	85+220	40	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
122	85+220	85+305	85	Viaduct	Viaduct
123	85+305	85+320	15	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
124	85+320	85+360	40	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
125	85+360	85+380	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
126	85+380	85+400	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
127	85+400	85+440	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
128	85+440	85+460	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
129	85+460	85+480	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
130	85+480	85+500	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
131	85+500	85+520	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
132	85+520	85+540	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
133	85+540	85+560	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
134	85+560	85+580	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
135	85+580	85+760	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
136	85+760	85+780	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
137	85+780	85+800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
138	85+800	85+820	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
139	85+820	85+840	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
140	85+840	85+980	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
141	85+980	86+000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
142	86+000	86+020	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
143	86+020	86+060	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
144	86+060	86+080	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
145	86+080	86+100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
146	86+100	86+120	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
147	86+120	86+140	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
148	86+140	86+160	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
149	86+160	86+180	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
150	86+180	86+220	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
151	86+220	86+240	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
152	86+240	86+260	20	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
153	86+260	86+295	35	Viaduct	Viaduct
154	86+295	86+320	25	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
155	86+320	86+340	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
156	86+340	86+660	320	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
157	86+660	86+680	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
158	86+680	86+960	280	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
159	86+960	86+980	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
160	86+980	87+000	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
161	87+000	87+020	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
162	87+020	87+220	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
163	87+220	87+240	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
164	87+240	87+260	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
165	87+260	87+320	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
166	87+320	87+400	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
167	87+400	87+420	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
168	87+420	87+620	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
169	87+620	87+720	100	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
170	87+720	87+740	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
171	87+740	87+780	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
172	87+780	88+000	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
173	88+000	88+020	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
174	88+020	88+040	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
175	88+040	88+060	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
176	88+060	88+140	80	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
177	88+140	88+200	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
178	88+200	88+235	35	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
179	88+235	88+900	665	Viaduct	Viaduct

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
180	88+900	88+920	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
181	88+920	88+940	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
182	88+940	88+960	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
183	88+960	88+980	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
184	88+980	89+000	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
185	89+000	89+020	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
186	89+020	89+060	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
187	89+060	89+100	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
188	89+100	89+120	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
189	89+120	89+140	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
190	89+140	89+160	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
191	89+160	89+180	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
192	89+180	89+200	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
193	89+200	89+220	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
194	89+220	89+240	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
195	89+240	89+260	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
196	89+260	89+280	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
197	89+280	89+300	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
198	89+300	89+320	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
199	89+320	89+380	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
200	89+380	89+402	22	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
201	89+402	89+409	7	SVUP	SVUP
202	89+409	89+480	71	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
203	89+480	89+520	40	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
204	89+520	89+620	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
205	89+620	89+640	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
206	89+640	89+660	20	TCS-11A	6 - 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
207	89+660	89+680	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
208	89+680	89+700	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
209	89+700	89+740	40	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
210	89+740	89+760	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
211	89+760	89+780	20	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
212	89+780	89+800	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
213	89+800	89+820	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
214	89+820	89+830	10	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
215	89+830	90+012	182	Viaduct	Viaduct
216	90+012	90+060	48	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
217	90+060	91+440	1380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
218	91+440	91+460	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
219	91+460	91+480	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
220	91+480	91+980	500	Viaduct	Viaduct
221	91+980	92+020	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
222	92+020	92+120	100	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
223	92+120	92+140	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
224	92+140	92+160	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
225	92+160	92+180	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
226	92+180	92+200	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
227	92+200	92+240	40	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
228	92+240	92+440	200	Viaduct	Viaduct
229	92+440	92+553	113	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
230	92+553	92+568	15	Viaduct	Viaduct
231	92+568	92+600	32	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
232	92+600	92+620	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
233	92+620	92+640	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
234	92+640	92+660	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
235	92+660	92+700	40	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
236	92+700	92+740	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
237	92+740	92+760	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
238	92+760	92+780	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
239	92+780	92+800	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
240	92+800	92+820	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
241	92+820	92+840	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
242	92+840	92+900	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
243	92+900	92+920	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
244	92+920	93+100	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
245	93+100	93+120	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
246	93+120	93+160	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
247	93+160	93+180	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
248	93+180	93+200	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
249	93+200	93+280	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
250	93+280	93+320	40	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
251	93+320	93+490	170	Viaduct	Viaduct
252	93+490	93+520	30	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
253	93+520	93+540	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
254	93+540	93+660	120	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
255	93+660	93+680	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
256	93+680	93+700	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
257	93+700	93+730	30	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
258	93+730	93+770	40	Viaduct	Viaduct
259	93+770	93+840	70	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
260	93+840	93+880	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
261	93+880	93+920	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
262	93+920	93+940	20	TCS-7A	6 - 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
263	93+940	93+960	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
264	93+960	93+980	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
265	93+980	94+000	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
266	94+000	94+060	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
267	94+060	94+080	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
268	94+080	94+120	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
269	94+120	94+140	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
270	94+140	94+240	100	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
271	94+240	94+260	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
272	94+260	94+280	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
273	94+280	94+620	340	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
274	94+620	94+680	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
275	94+680	94+700	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
276	94+700	94+720	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
277	94+720	94+772	52	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
278	94+772	94+779	7	SVUP	SVUP
279	94+779	94+800	21	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
280	94+800	94+820	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
281	94+820	96+060	1240	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
282	96+060	96+080	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
283	96+080	96+100	20	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
284	96+100	96+110	10	MNB	Minor Bridge
285	96+110	96+145	35	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
286	96+145	96+155	10	MNB	Minor Bridge
287	96+155	96+180	25	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
288	96+180	96+200	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
289	96+200	96+220	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
290	96+220	96+240	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
291	96+240	96+260	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
292	96+260	96+280	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
293	96+280	96+300	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
294	96+300	96+340	40	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
295	96+340	96+380	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
296	96+380	96+400	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
297	96+400	96+420	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
298	96+420	96+440	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
299	96+440	96+480	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
300	96+480	96+500	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
301	96+500	96+580	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
302	96+580	96+600	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
303	96+600	96+618	18	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
304	96+618	96+720	102	Viaduct	Viaduct
305	96+720	96+740	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
306	96+740	96+760	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
307	96+760	96+780	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
308	96+780	96+800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
309	96+800	96+820	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
310	96+820	96+960	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
311	96+960	96+980	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
312	96+980	97+120	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
313	97+120	97+140	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
314	97+140	97+160	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
315	97+160	97+180	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
316	97+180	97+200	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
317	97+200	97+400	200	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
318	97+400	97+420	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
319	97+420	97+440	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
320	97+440	97+460	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
321	97+460	97+480	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
322	97+480	97+520	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
323	97+520	97+540	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
324	97+540	97+560	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
325	97+560	97+580	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
326	97+580	97+600	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
327	97+600	97+640	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
328	97+640	97+687	47	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
329	97+687	97+694	7	SVUP	SVUP
330	97+694	97+720	26	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
331	97+720	97+740	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
332	97+740	97+920	180	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
333	97+920	97+940	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
334	97+940	97+960	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
335	97+960	97+980	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
336	97+980	98+057	77	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
337	98+057	98+064	7	SVUP	SVUP
338	98+064	98+100	36	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
339	98+100	98+160	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
340	98+160	98+170	10	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
341	98+170	98+230	60	Viaduct	Viaduct
342	98+230	98+260	30	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
343	98+260	98+380	120	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
344	98+380	98+400	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
345	98+400	98+940	540	Viaduct	Viaduct
346	98+940	98+960	20	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
347	98+960	98+980	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
348	98+980	99+020	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
349	99+020	99+920	900	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
350	99+920	99+940	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
351	99+940	99+960	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
352	99+960	99+980	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
353	99+980	100+000	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
354	100+000	100+020	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
355	100+020	100+260	240	Viaduct	Viaduct
356	100+260	100+280	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
357	100+280	100+300	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
358	100+300	100+680	380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
359	100+680	100+700	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
360	100+700	100+720	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
361	100+720	100+760	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
362	100+760	100+800	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
363	100+800	100+820	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
364	100+820	100+840	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
365	100+840	100+860	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
366	100+860	100+897	37	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
367	100+897	100+904	7	SVUP	SVUP
368	100+904	100+920	16	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
369	100+920	100+940	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
370	100+940	101+040	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
371	101+040	101+060	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
372	101+060	101+620	560	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
373	101+620	101+640	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
374	101+640	101+660	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
375	101+660	101+680	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
376	101+680	101+713	33	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
377	101+713	101+728	15	Viaduct	Viaduct
378	101+728	101+760	32	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
379	101+760	101+780	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
380	101+780	101+800	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
381	101+800	101+820	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
382	101+820	102+220	400	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
383	102+220	102+240	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
384	102+240	102+260	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
385	102+260	102+280	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
386	102+280	102+300	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
387	102+300	102+360	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
388	102+360	102+400	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
389	102+400	102+420	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
390	102+420	102+440	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
391	102+440	102+530	90	Viaduct	Viaduct
392	102+530	102+580	50	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
393	102+580	102+600	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
394	102+600	102+620	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
395	102+620	102+640	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
396	102+640	102+680	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
397	102+680	102+700	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
398	102+700	102+760	60	Viaduct	Viaduct
399	102+760	102+780	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
400	102+780	102+800	20	TCS-8A	6 - 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
401	102+800	102+820	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
402	102+820	102+840	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
403	102+840	103+020	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
404	103+020	103+060	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
405	103+060	103+160	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
406	103+160	103+180	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
407	103+180	103+200	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
408	103+200	103+220	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
409	103+220	103+240	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
410	103+240	103+260	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
411	103+260	103+280	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
412	103+280	103+300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
413	103+300	103+320	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
414	103+320	103+540	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
415	103+540	103+580	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
416	103+580	103+600	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
417	103+600	103+620	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
418	103+620	103+640	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
419	103+640	103+680	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
420	103+680	103+700	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
421	103+700	103+740	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
422	103+740	103+760	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
423	103+760	103+800	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
424	103+800	103+820	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
425	103+820	103+860	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
426	103+860	103+880	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
427	103+880	103+900	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
428	103+900	104+380	480	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
429	104+380	104+400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
430	104+400	104+420	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
431	104+420	104+440	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
432	104+440	104+460	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
433	104+460	104+840	380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
434	104+840	104+860	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
435	104+860	104+980	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
436	104+980	105+000	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
437	105+000	105+040	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
438	105+040	105+060	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
439	105+060	105+100	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
440	105+100	105+120	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
441	105+120	105+140	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
442	105+140	105+160	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
443	105+160	105+180	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
444	105+180	105+200	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
445	105+200	105+240	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
446	105+240	105+280	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
447	105+280	105+320	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
448	105+320	105+340	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
449	105+340	105+360	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
450	105+360	105+425	65	Viaduct	Viaduct
451	105+425	105+440	15	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
452	105+440	105+460	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
453	105+460	105+500	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
454	105+500	105+520	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
455	105+520	105+550	30	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
456	105+550	105+590	40	Viaduct	Viaduct
457	105+590	105+610	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
458	105+610	105+856	246	Viaduct	Viaduct
459	105+856	105+940	84	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
460	105+940	105+950	10	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
461	105+950	106+030	80	Viaduct	Viaduct
462	106+030	106+060	30	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
463	106+060	106+080	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
464	106+080	106+100	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
465	106+100	106+840	740	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
466	106+840	106+860	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
467	106+860	106+880	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
468	106+880	106+893	13	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
469	106+893	106+995	102	MJB	Major Bridge
470	106+995	107+040	45	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
471	107+040	107+060	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
472	107+060	107+080	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
473	107+080	107+090	10	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
474	107+090	107+120	30	MNB	Minor Bridge
475	107+120	107+140	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
476	107+140	107+160	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
477	107+160	107+180	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
478	107+180	107+200	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
479	107+200	107+980	780	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
480	107+980	108+000	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
481	108+000	108+020	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
482	108+020	108+040	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
483	108+040	108+088	48	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
484	108+088	108+150	62	Viaduct	Viaduct
485	108+150	108+239	89	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
486	108+239	108+560	321	Viaduct	Viaduct
487	108+560	108+617	57	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
488	108+617	108+624	7	SVUP	SVUP
489	108+624	108+660	36	TCS-17	Approaches for 6- Lane Divided Highway for VUP/LVUP/SVUP/Viaducts
490	108+660	108+835	175	Viaduct	Viaduct
491	108+835	108+860	25	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
492	108+860	108+880	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
493	108+880	108+900	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
494	108+900	109+300	400	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
495	109+300	109+320	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
496	109+320	109+340	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
497	109+340	109+360	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
498	109+360	109+380	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
499	109+380	109+860	480	Viaduct	Viaduct
500	109+860	109+880	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
501	109+880	109+900	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
502	109+900	109+920	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
503	109+920	110+255	335	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
504	110+255	110+290	35	Viaduct	Viaduct
505	110+290	110+340	50	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
506	110+340	110+660	320	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
507	110+660	110+680	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
508	110+680	110+800	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
509	110+800	110+820	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
510	110+820	110+860	40	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
511	110+860	110+920	60	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
512	110+920	110+940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
513	110+940	110+960	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
514	110+960	110+980	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
515	110+980	111+000	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
516	111+000	111+020	20	TCS-3	4 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
517	111+020	111+040	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
518	111+040	111+120	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
519	111+120	111+160	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
520	111+160	111+180	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
521	111+180	111+200	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
522	111+200	111+220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
523	111+220	111+420	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
524	111+420	111+485	65	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
525	111+485	111+765	280	Viaduct	Viaduct
526	111+765	111+780	15	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
527	111+780	111+800	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
528	111+800	111+820	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
529	111+820	111+840	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
530	111+840	111+880	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
531	111+880	111+900	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
532	111+900	111+920	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
533	111+920	111+940	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
534	111+940	111+953	13	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
535	111+953	111+968	15	MNB	Minor Bridge
536	111+968	112+000	32	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
537	112+000	112+020	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
538	112+020	112+040	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
539	112+040	112+050	10	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
540	112+050	112+458	408	Viaduct	Viaduct
541	112+458	112+480	22	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
542	112+480	112+560	80	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
543	112+560	112+660	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
544	112+660	112+720	60	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
545	112+720	112+735	15	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
546	112+735	112+775	40	Viaduct	Viaduct
547	112+775	112+800	25	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
548	112+800	112+815	15	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
549	112+815	112+825	10	Viaduct	Viaduct
550	112+825	112+850	25	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
551	112+850	112+980	130	Viaduct	Viaduct
552	112+980	113+000	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
553	113+000	113+015	15	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
554	113+015	113+025	10	MNB	Minor Bridge
555	113+025	113+425	400	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
556	113+425	113+435	10	MNB	Minor Bridge
557	113+435	113+460	25	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
558	113+460	113+480	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
559	113+480	113+520	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
560	113+520	113+535	15	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
561	113+535	113+545	10	MNB	Minor Bridge
562	113+545	113+700	155	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
563	113+700	113+780	80	Viaduct	Viaduct
564	113+780	113+895	115	Tunnel by Cut & Cover Method	Tunnel by Cut & Cover Method
565	113+895	114+287	392	Viaduct	Viaduct
566	114+287	114+300	13	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
567	114+300	114+340	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
568	114+340	114+401	61	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
569	114+401	114+665	264	Viaduct	Viaduct
570	114+665	114+730	65	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
571	114+730	114+920	190	Viaduct	Viaduct

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
572	114+920	114+940	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
573	114+940	114+960	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
574	114+960	114+970	10	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
575	114+970	115+040	70	Viaduct	Viaduct
576	115+040	115+060	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
577	115+060	115+100	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
578	115+100	115+140	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
579	115+140	115+160	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
580	115+160	115+545	385	Viaduct	Viaduct
581	115+545	115+560	15	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
582	115+560	115+600	40	Viaduct	Viaduct
583	115+600	115+655	55	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
584	115+655	116+495	840	Viaduct	Viaduct
585	116+495	116+560	65	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
586	116+560	117+020	460	Viaduct	Viaduct
587	117+020	117+040	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
588	117+040	117+440	400	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
589	117+440	117+460	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
590	117+460	118+360	900	Viaduct	Viaduct
591	118+360	118+380	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
592	118+380	118+580	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
593	118+580	118+620	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
594	118+620	118+850	230	Viaduct	Viaduct
595	118+850	118+880	30	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
596	118+880	118+937	57	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
597	118+937	118+952	15	Viaduct	Viaduct
598	118+952	118+980	28	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
599	118+980	119+020	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
600	119+020	119+040	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
601	119+040	119+060	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
602	119+060	119+160	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
603	119+160	119+180	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
604	119+180	119+200	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
605	119+200	119+320	120	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
606	119+320	119+335	15	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
607	119+335	119+345	10	MNB	Minor Bridge
608	119+345	119+400	55	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
609	119+400	119+620	220	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
610	119+620	119+640	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
611	119+640	119+660	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
612	119+660	119+680	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
613	119+680	119+690	10	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
614	119+690	119+810	120	Viaduct	Viaduct
615	119+810	119+835	25	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
616	119+835	119+870	35	Viaduct	Viaduct
617	119+870	119+960	90	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
618	119+960	120+320	360	Viaduct	Viaduct
619	120+320	120+340	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
620	120+340	120+345	5	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
621	120+345	120+370	25	Viaduct	Viaduct
622	120+370	120+400	30	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction Section
623	120+400	120+420	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
624	120+420	120+440	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
625	120+440	120+480	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
626	120+480	120+500	20	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
627	120+500	120+520	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
628	120+520	120+540	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
629	120+540	120+560	20	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
630	120+560	120+585	25	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
631	120+585	120+630	45	Viaduct	Viaduct
632	120+630	120+660	30	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
633	120+660	120+686	26	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
634	120+686	120+694	8	MNB	Minor Bridge
635	120+694	120+720	26	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
636	120+720	120+760	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
637	120+760	120+780	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
638	120+780	120+820	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
639	120+820	120+840	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
640	120+840	121+040	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
641	121+040	121+060	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
642	121+060	121+180	120	Viaduct	Viaduct
643	121+180	121+200	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
644	121+200	121+215	15	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
645	121+215	121+225	10	MNB	Minor Bridge
646	121+225	121+260	35	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
647	121+260	121+440	180	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
648	121+440	121+460	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
649	121+460	121+480	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
650	121+480	121+500	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
651	121+500	121+520	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
652	121+520	121+534	14	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
653	121+534	121+546	12	MNB	Minor Bridge
654	121+546	121+580	34	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
655	121+580	121+620	40	Viaduct	Viaduct
656	121+620	121+660	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
657	121+660	121+680	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
658	121+680	121+840	160	Viaduct	Viaduct
659	121+840	121+880	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
660	121+880	121+900	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
661	121+900	122+230	330	Viaduct	Viaduct
662	122+230	122+265	35	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
663	122+265	122+275	10	MNB	Minor Bridge
664	122+275	122+300	25	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
665	122+300	122+320	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
666	122+320	122+345	25	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
667	122+345	122+375	30	Viaduct	Viaduct
668	122+375	122+400	25	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
669	122+400	122+440	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
670	122+440	122+450	10	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
671	122+450	122+690	240	Viaduct	Viaduct
672	122+690	122+700	10	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
673	122+700	122+720	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
674	122+720	122+800	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
675	122+800	122+820	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
676	122+820	122+840	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
677	122+840	122+860	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
678	122+860	122+900	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
679	122+900	122+920	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
680	122+920	123+080	160	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
681	123+080	123+100	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
682	123+100	123+120	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
683	123+120	123+140	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
684	123+140	123+155	15	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
685	123+155	123+165	10	MNB	Minor Bridge
686	123+165	123+200	35	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
687	123+200	123+540	340	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
688	123+540	123+564	24	TCS-7A	6 - 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
689	123+564	123+576	12	Viaduct	Viaduct
690	123+576	123+600	24	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
691	123+600	123+620	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
692	123+620	123+640	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
693	123+640	123+700	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
694	123+700	123+760	60	Viaduct	Viaduct
695	123+760	123+780	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
696	123+780	123+920	140	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
697	123+920	123+940	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
698	123+940	123+980	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
699	123+980	124+000	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
700	124+000	124+040	40	Viaduct	Viaduct
701	124+040	124+060	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
702	124+060	124+080	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
703	124+080	124+100	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
704	124+100	124+120	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
705	124+120	124+140	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
706	124+140	124+200	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
707	124+200	124+208	8	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
708	124+208	124+223	15	Viaduct	Viaduct
709	124+223	124+245	22	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
710	124+245	124+275	30	Viaduct	Viaduct
711	124+275	124+312	37	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
712	124+312	124+327	15	Viaduct	Viaduct
713	124+327	124+340	13	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
714	124+340	124+442	102	Viaduct	Viaduct
715	124+442	124+478	36	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
716	124+478	124+580	102	Viaduct	Viaduct
717	124+580	124+600	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
718	124+600	124+620	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
719	124+620	124+660	40	TCS-7A	6 - 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
720	124+660	124+680	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
721	124+680	124+720	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
722	124+720	124+740	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
723	124+740	124+760	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
724	124+760	124+780	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
725	124+780	124+790	10	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
726	124+790	124+825	35	Viaduct	Viaduct
727	124+825	124+860	35	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
728	124+860	124+880	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
729	124+880	124+900	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
730	124+900	124+938	38	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
731	124+938	125+000	62	Viaduct	Viaduct
732	125+000	125+020	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
733	125+020	125+040	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
734	125+040	125+142	102	Viaduct	Viaduct
735	125+142	125+160	18	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
736	125+160	125+180	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
737	125+180	125+200	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
738	125+200	125+240	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
739	125+240	125+260	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
740	125+260	125+280	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
741	125+280	125+300	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
742	125+300	125+320	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
743	125+320	125+440	120	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
744	125+440	125+460	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
745	125+460	125+480	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
746	125+480	125+500	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
747	125+500	125+520	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
748	125+520	125+540	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
749	125+540	125+550	10	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
750	125+550	125+640	90	Viaduct	Viaduct
751	125+640	125+660	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
752	125+660	125+680	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
753	125+680	125+720	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
754	125+720	125+800	80	Viaduct	Viaduct
755	125+800	125+820	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
756	125+820	125+860	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
757	125+860	126+220	360	Viaduct	Viaduct
758	126+220	126+240	20	TCS-5A	6 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
759	126+240	126+300	60	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
760	126+300	126+320	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
761	126+320	126+380	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
762	126+380	126+420	40	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
763	126+420	126+440	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
764	126+440	126+460	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
765	126+460	126+560	100	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
766	126+560	126+580	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
767	126+580	126+720	140	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
768	126+720	126+748	28	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
769	126+748	126+828	80	MJB	Major Bridge
770	126+828	126+860	32	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
771	126+860	126+880	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
772	126+880	126+990	110	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
773	126+990	127+020	30	MNB	Minor Bridge
774	127+020	127+040	20	TCS-4A	6 - Lane Divided Highway (Filling Height <3m) New Construction Section
775	127+040	127+240	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
776	127+240	127+255	15	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
777	127+255	127+480	225	Viaduct	Viaduct
778	127+480	127+540	60	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
779	127+540	127+620	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
780	127+620	127+682	62	Viaduct	Viaduct
781	127+682	127+700	18	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
782	127+700	127+720	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
783	127+720	127+740	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
784	127+740	127+855	115	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
785	127+855	128+420	565	Viaduct	Viaduct
786	128+420	128+460	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
787	128+460	128+470	10	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
788	128+470	128+500	30	Viaduct	Viaduct
789	128+500	128+580	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
790	128+580	128+600	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
791	128+600	128+736	136	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
792	128+736	128+744	8	MNB	Minor Bridge
793	128+744	128+780	36	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
794	128+780	128+820	40	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
795	128+820	128+835	15	MNB	Minor Bridge
796	128+835	128+860	25	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
797	128+860	128+940	80	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
798	128+940	128+955	15	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction Section
799	128+955	129+135	180	Viaduct	Viaduct
800	129+135	129+160	25	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
801	129+160	129+380	220	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
802	129+380	129+400	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
803	129+400	129+565	165	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
804	129+565	129+871	306	Viaduct	Viaduct
805	129+871	129+920	49	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
806	129+920	129+940	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
807	129+940	130+020	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
808	130+020	130+155	135	Viaduct	Viaduct
809	130+155	130+220	65	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
810	130+220	130+240	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
811	130+240	130+400	160	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
812	130+400	130+520	120	Viaduct	Viaduct
813	130+520	130+540	20	TCS-6A	6 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
814	130+540	130+580	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
815	130+580	130+640	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
816	130+640	130+880	240	Tunnel by cut & Cover method	Tunnel by Cut & Cover Method
817	130+880	131+080	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
818	131+080	131+100	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
819	131+100	131+120	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
820	131+120	131+580	460	Viaduct	Viaduct
821	131+580	131+600	20	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
822	131+600	131+620	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
823	131+620	131+640	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
824	131+640	131+660	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
825	131+660	131+680	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
826	131+680	131+700	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
827	131+700	131+720	20	TCS-13A	6 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
828	131+720	131+740	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
829	131+740	131+780	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
830	131+780	131+820	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
831	131+820	131+840	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
832	131+840	132+020	180	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
833	132+020	132+280	260	Viaduct	Viaduct
834	132+280	132+300	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
835	132+300	132+320	20	TCS-3A	6 - Lane Divided Highway (Partial F 3m to 7m, C<3m) New Construction Section
836	132+320	132+360	40	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
837	132+360	132+480	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
838	132+480	132+500	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
839	132+500	132+520	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
840	132+520	132+540	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
841	132+540	132+560	20	TCS-5	4 - Lane Divided Highway (Filling Height 3m to 7m) New Construction Section
842	132+560	132+600	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
843	132+600	132+620	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
844	132+620	132+640	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, One side filling 3m to 7m) New Construction
845	132+640	132+660	20	TCS-13	4 - Lane Divided Highway (One Breast wall & One Retaining wall) New Construction
846	132+660	132+860	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
847	132+860	132+880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (One side Cutting <3m) New Construction Section
848	132+880	132+900	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
849	132+900	132+920	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, One side Filling 3m to 7m) New Construction
850	132+920	132+940	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall in high Emb.) New Construction
851	132+940	132+960	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
852	132+960	132+980	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
853	132+980	133+000	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (One side Filling <3m) New Construction
854	133+000	133+040	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
855	133+040	133+060	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
856	133+060	133+160	100	TCS-9	4 - Lane Divided Highway with Breast wall on one side (One side Cutting 3m to 7m) New Construction Section
857	133+160	133+180	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction Section
858	133+180	133+320	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction

Note:

1. Any variations in the lengths of various TCS as specified in the Table 2.10 shall not constitute a Change of Scope.
2. Lengths mentioned in the above list for cross section types concerned to structures are inclusive of structure length.
3. RE wall to be provided for full height on all structures.
4. Toe wall to be provided where ROW is restricted and water bodies along the proposed highway on the sections specified in Schedule-B.
5. Chainage may be adjusted according to location of structures as per Site conditions.
6. Carriageway width tapering shall be provided 1 in 50 as per manual.
7. 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.
8. 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 cross roads to be developed	
			Left	Right				LHS	RHS
1.					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)

S. 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	78+700	+	To Village	To Village	No	VR	3.75	The contractor shall develop the cross roads up to the ROW of HSC, ensuring that the FRL matches and is maintained in	
2	79+225	+	To Village	To Village	No	VR	3.75		
3	79+705	+	To Village	To Village	No	VR	3.75		
4	80+050	+	To Village	To Village	No	VR	3.75		

S. 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
5	81+000	+	To Village	To Village	No	VR	3.75	continuity with the existing connecting road.	
6	83+030	+	To Village	To Village	No	VR	3.75		
7	83+600	+	To Village	To Village	No	VR	3.75		
8	84+150	+	To Village	To Village	No	VR	3.75		
9	84+555	+	To Village	To Village	No	VR	3.75		
10	85+060	+	To Village	To Village	No	VR	3.75		
11	85+430	+	To Village	To Village	No	VR	3.75		
12	85+890	+	To Village	To Village	No	VR	3.75		
13	86+800	+	To Village	To Village	No	VR	3.75		
14	87+880	+	To Village	To Village	No	VR	3.75		
15	88+925	+	To Village	To Village	No	VR	3.75		
16	89+405	+	To Village	To Village	No	VR	3.75		
17	89+850	+	To Village	To Village	No	VR	3.75		
18	90+060	+	To Village	To Village	No	VR	3.75		
19	90+480	+	To Village	To Village	No	VR	3.75		
20	92+615	+	To Village	To Village	No	VR	3.75		
21	93+230	+	To Village	To Village	No	VR	3.75		
22	93+890	+	To Village	To Village	No	VR	3.75		
23	94+410	+	To Village	To Village	No	VR	3.75		
24	94+775	+	To Village	To Village	No	VR	3.75		
25	95+700	+	To Village	To Village	No	VR	3.75		
26	96+335	+	To Village	To Village	No	VR	3.75		
27	97+080	+	To Village	To Village	No	VR	3.75		
28	97+690	+	To Village	To Village	No	VR	3.75		
29	98+060	+	To Village	To Village	No	VR	3.75		
30	99+570	+	To Village	To Village	No	VR	3.75		
31	100+900	+	To Village	To Village	No	VR	3.75		
32	102+200	+	To Village	To Village	No	VR	3.75		
33	102+850	+	To Village	To Village	No	VR	3.75		
34	104+480	+	To Village	To Village	No	VR	3.75		

S. 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
35	105+990	+	To Village	To Village	No	VR	3.75		
36	106+280	+	To Village	To Village	No	VR	3.75		
37	108+620	+	To Village	To Village	No	VR	3.75		
38	110+000	+	To Village	To Village	No	VR	3.75		
39	112+755	+	To Village	To Village	No	VR	3.75		
40	113+160	+	To Village	To Village	No	VR	3.75		
41	118+428	+	To Village	To Village	No	VR	3.75		
42	122+690	+	To Village	To Village	No	VR	3.75		
43	128+680	+	To Village	To Village	No	VR	3.75		
44	130+720	+	To Village	To Village	No	VR	3.75		
45	132+420	+	To Village	To Village	No	VR	3.75		

***Note-**

1. The Concessionaire shall develop the connecting roads along the High-Speed Corridor as indicated in the Plan & Profile drawings, in conformity with the actual site conditions and configurations, without any deviation from the approved design intent.

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 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. Locations 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 ROW of HSC 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 in proposed profile and OGL for plain terrain as indicated in Annexure-III of schedule A shall be 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 for fill section & 1H:1V for cut section (except from Design Chainage 113+780 to 113+895, Length-115m, from Design Chainage 129+330 to 129+370, Length-40m, from Design Chainage 130+640 to 130+880, Length-240m & 132+390 to 132+440, Length- 50m where 1H:2V is proposed due to site constraints. **The Concessionaire shall carry out slope protection works at these locations in accordance with the Typical Cross Sections provided in Annex II (Schedule B).** In no case, the side slope in cutting section shall not be steeper than 1H: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 Connecting Roads).

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%. 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 Crossroads shall be designed for projected traffic of 10 MSA. All service road/ Crossroads /slip roads/ramps shall be designed for 90% reliability as per IRC 37.

- i. Crossroads mentioned in Clause 2.8.2 shall be designed for minimum 10 MSA.

5.2.4. Deleted

5.2.5. Deleted

5.2.6. Deleted

5.2.7. Deleted

5.3. In order to meet the intended functional requirement of respective pavement layers, the minimum thickness of respective pavement layers however, in no case be less than as given below:

5.3.1 Deleted

5.3.2 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		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
78+740	78+840	100	78+720	78+820	100
78+940	79+040	100	78+840	78+920	80
79+100	79+460	360	78+960	79+060	100
79+620	79+740	120	79+100	79+440	340
79+760	79+900	140	79+620	79+660	40
79+940	79+980	40	79+680	79+740	60
80+300	80+500	200	79+820	79+860	40
80+520	80+540	20	79+940	79+980	40
80+880	81+540	660	80+300	80+560	260
81+560	81+600	40	80+880	81+440	560
81+960	82+340	380	81+640	81+660	20
82+680	83+080	400	81+960	82+400	440
83+200	83+240	40	82+680	83+120	440
83+420	83+720	300	83+200	83+220	20
84+020	84+060	40	83+400	83+680	280
84+080	84+200	120	84+080	84+240	160
84+400	84+840	440	84+320	84+340	20
84+960	85+000	40	84+360	84+780	420
85+040	85+160	120	84+800	84+840	40
85+360	85+520	160	84+960	85+020	60
85+580	85+800	220	85+040	85+140	100
85+840	86+020	180	85+160	85+180	20
86+060	86+160	100	85+380	85+460	80
86+320	86+660	340	85+580	85+780	200
86+680	86+960	280	85+820	86+000	180
87+020	87+220	200	86+060	86+080	20
87+260	87+400	140	86+100	86+120	20
87+420	87+620	200	86+140	86+240	100
87+780	88+020	240	86+320	86+960	640
88+040	88+060	20	87+020	88+235	1215
88+940	88+980	40	88+920	89+240	320
89+000	89+060	60	89+260	89+380	120
89+140	89+160	20	89+520	89+640	120
89+180	89+220	40	89+660	89+700	40
89+320	89+380	60	89+800	89+820	20
89+480	89+620	140	90+060	91+460	1400
90+060	91+460	1400	91+980	92+020	40
92+140	92+160	20	92+120	92+200	80
92+180	92+200	20	92+600	92+640	40
92+600	92+640	40	92+800	92+820	20
92+760	92+820	60	92+920	93+120	200
92+900	93+100	200	93+180	93+280	100
93+200	93+280	80	93+540	93+730	190
93+520	93+680	160	93+840	94+120	280
93+880	93+920	40	94+260	94+620	360
94+000	94+060	60	94+800	96+060	1260
94+280	94+620	340	96+180	96+300	120
94+800	96+060	1260	96+340	96+400	60
96+200	96+260	60	96+440	96+618	178
96+340	96+380	40	96+760	96+780	20
96+420	96+600	180	96+820	96+960	140

LEFT			RIGHT		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
96+740	96+800	60	96+980	97+120	140
96+820	97+140	320	97+180	97+400	220
97+200	97+520	320	97+440	97+480	40
97+560	97+580	20	97+540	97+600	60
97+740	97+920	180	97+720	97+940	220
97+960	97+980	20	98+100	98+160	60
98+100	98+160	60	98+260	98+380	120
98+230	98+400	170	98+940	100+020	1080
99+020	99+980	960	100+280	100+700	420
100+000	100+020	20	100+840	100+860	20
100+300	100+720	420	100+920	101+713	793
100+760	100+860	100	101+728	101+760	32
100+940	101+040	100	101+780	102+440	660
101+060	101+620	560	102+620	102+700	80
101+800	102+220	420	102+760	103+200	440
102+280	102+300	20	103+280	103+800	520
102+780	102+800	20	103+820	103+860	40
102+840	103+200	360	103+880	104+380	500
103+300	103+540	240	104+460	104+840	380
103+640	103+680	40	104+860	105+040	180
103+760	103+860	100	105+120	105+200	80
103+900	104+400	500	105+280	105+360	80
104+420	104+980	560	105+425	105+550	125
105+100	105+120	20	105+590	105+610	20
105+160	105+200	40	105+856	105+950	94
105+280	105+340	60	106+030	106+893	863
105+440	105+460	20	107+060	107+090	30
105+590	105+610	20	107+120	108+000	880
105+856	105+940	84	108+860	108+880	20
106+030	106+060	30	108+900	109+380	480
106+080	106+880	800	109+880	110+255	375
107+180	107+980	800	110+290	110+960	670
108+860	108+880	20	111+000	111+120	120
108+900	109+300	400	111+140	111+180	40
109+900	110+255	355	111+200	111+485	285
110+290	110+660	370	111+780	111+940	160
110+680	110+800	120	111+968	112+000	32
110+820	110+860	40	112+000	112+050	50
110+940	110+960	20	112+560	112+660	100
111+020	111+140	120	112+980	113+015	35
111+220	111+485	265	113+025	113+425	400
111+800	111+880	80	113+480	113+535	55
111+900	111+920	20	113+545	113+700	155
111+968	112+000	32	114+285	114+401	116
112+000	112+020	20	114+665	114+730	65
112+480	112+735	255	114+920	114+970	50
113+025	113+425	400	115+040	115+160	120
113+460	113+520	60	115+600	115+655	55
113+545	113+700	155	117+020	117+440	420
114+300	114+340	40	118+380	118+580	200
115+060	115+140	80	118+980	119+040	60
116+355	116+495	140	119+060	119+160	100
116+495	116+560	65	119+200	119+335	135
117+040	117+460	420	119+345	119+690	345

LEFT			RIGHT		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
118+360	118+620	260	120+340	120+345	5
118+880	118+937	57	120+370	120+420	50
118+952	119+160	208	120+440	120+480	40
119+180	119+335	155	120+500	120+585	85
119+400	119+660	260	120+630	120+686	56
119+680	119+690	10	120+694	120+760	66
119+810	119+835	25	120+780	121+060	280
119+870	119+960	90	121+260	121+534	274
120+340	120+345	5	121+546	121+580	34
120+400	120+420	20	121+620	121+660	40
120+440	120+480	40	121+840	121+880	40
120+500	120+540	40	122+230	122+265	35
120+660	120+686	26	122+275	122+345	70
120+720	120+760	40	122+375	122+440	65
120+780	121+060	280	122+700	123+080	380
121+225	121+460	235	123+100	123+120	20
121+480	121+500	20	123+200	123+540	340
122+300	122+320	20	123+600	123+620	20
122+400	122+450	50	123+640	123+700	60
122+720	122+800	80	123+780	123+920	140
122+840	122+900	60	123+980	124+000	20
122+920	123+155	235	124+060	124+100	40
123+200	123+564	364	124+120	124+200	80
123+576	123+700	124	124+223	124+245	22
123+780	124+000	220	124+275	124+312	37
124+040	124+200	160	124+660	124+720	60
124+223	124+245	22	125+020	125+040	20
124+275	124+312	37	125+160	125+180	20
124+327	124+340	13	125+280	125+300	20
124+442	124+478	36	125+320	125+550	230
124+600	124+790	190	125+820	125+860	40
124+825	124+880	55	126+240	126+300	60
124+900	124+938	38	126+320	126+380	60
125+000	125+040	40	126+560	126+720	160
125+160	125+180	20	126+828	126+990	162
125+200	125+240	40	127+040	127+240	200
125+280	125+460	180	127+480	127+620	140
125+480	125+540	60	127+720	127+855	135
125+660	125+720	60	128+500	128+580	80
126+320	126+420	100	128+600	128+736	136
126+440	126+560	120	128+744	128+780	36
126+580	126+748	168	128+940	128+955	15
126+860	126+990	130	129+135	129+380	245
127+040	127+255	215	129+400	129+565	165
127+540	127+620	80	129+769	129+871	102
127+700	127+855	155	129+871	130+020	149
128+420	128+460	40	130+020	130+045	25
128+500	128+736	236	130+240	130+400	160
128+744	128+820	76	130+540	130+640	100
128+835	128+955	120	130+880	131+120	240
129+160	129+565	405	131+600	131+680	80
129+920	130+020	100	131+740	131+780	40
130+155	130+400	245	131+840	132+020	180
130+540	130+640	100	132+300	132+480	180

LEFT			RIGHT		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
130+880	131+100	220	132+660	132+880	220
131+600	132+020	420	132+940	132+980	40
132+360	132+520	160	133+000	133+040	40
132+640	132+900	260	133+180	133+320	140
132+960	133+040	80			
133+060	133+160	100			
133+180	133+320	140			
		28526	Total		30002

Details of RCC Drain for Cross roads

LEFT		RIGHT		Length (m)
Design Chainage From	Design Chainage To	Design Chainage From	Design Chainage To	
Cross roads				314
Total (m)				314

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 contractor shall provide a Thrie-beam crash barrier along the RCC drain side to ensure vehicle safety, as illustrated in the typical cross-sections annexed under Annex-II (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 upto 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 Flushed median and turfing 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.

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.

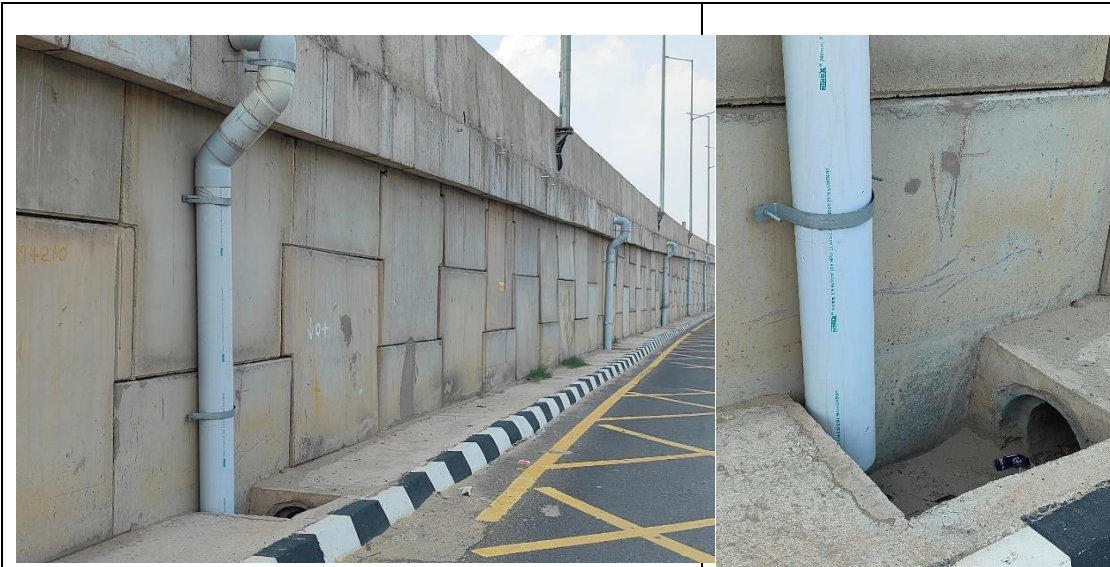
6.7. Drainage for Underpass and Subways Structures (Clause No. 6.8.3 IRC: SP: 84)

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 slopped 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 and structure shall be designed for Six lanes 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	78+700		2.5m/1.5m/0.75m	SVUP
2	79+225		1.5	Overpass
3	79+705	22	1.5	Overpass
4	80+050		2.5m/1.5m/0.75m (Below Structure)	SVUP
5	81+000	11	1.5	VOP
6	83+030		1.5	Overpass

Sr. No.	Location at km	Skew Angle	Footpath Width(m)	Remarks
7	83+600		1.5	Overpass
8	84+150	24	1.5	Overpass
9	84+555	24	1.5	VOP
10	85+060	19	1.5	Overpass
11	85+430		1.5	Overpass
12	85+890	30	1.5	VOP
13	86+800		1.5	Overpass
14	87+880	27	1.5	Overpass
15	88+925	16	1.5	Overpass
16	89+405		2.5m/1.5m/0.75m (Below Structure)	SVUP
17	90+060	30	1.5	Overpass
18	90+480	25	1.5	Overpass
19	92+615		1.5	Overpass
20	93+230		1.5	Overpass
21	93+890		1.5	Overpass
22	94+410	39	1.5	VOP
23	94+775	14	2.5m/1.5m/0.75m (Below Structure)	SVUP
24	95+700		1.5	Overpass
25	96+335		1.5	Overpass
26	97+080	37	1.5	VOP
27	97+690	26	2.5m/1.5m/0.75m (Below Structure)	SVUP
28	98+060	10	2.5m/1.5m/0.75m (Below Structure)	SVUP
29	99+570		1.5	Overpass
30	100+900		2.5m/1.5m/0.75m (Below Structure)	SVUP
31	102+200		1.5	Overpass
32	102+850	18	1.5	Overpass
33	104+480	41	1.5	Overpass
34	106+280	0	1.5	Overpass
35	108+620	42	2.5m/1.5m/0.75m (Below Structure)	SVUP
36	110+000		1.5	Overpass
37	113+160		1.5	Overpass
38	118+428	24	1.5	VOP
39	128+680		1.5	VOP
40	130+720		1.5	VOP
41	132+420		1.5	VOP

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
1	0+050	Box culvert		1 X 2.0	Reconstruction	Drain	Cross Road-1 Near Ch. 122+800 of Main carriageway
2	0+120	Box culvert		1 X 6.0	Reconstruction	Drain	Cross Road-5 Near Ch. 130+100 of Main carriageway

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:

For Main Carriageway

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	78+670	1	6.00		Drain	New Proposed
2	78+835	1	2.00	22	Drain	New Proposed
3	78+925	1	2.00	25	Drain	New Proposed
4	79+070	1	5.00	46	Drain	New Proposed
5	79+665	1	2.00		Drain	New Proposed
6	79+740	1	5.00	11	Drain	New Proposed
7	79+860	1	3.00		Drain	New Proposed
8	79+905	1	3.00		Drain	New Proposed
9	80+015	1	5.00	7	Drain	New Proposed
10	80+165	1	3.00		Drain	New Proposed
11	80+270	1	2.00		Drain	New Proposed
12	80+600	1	5.00	39	Drain	New Proposed
13	81+440	1	2.00		Drain	New Proposed
14	81+540	1	2.00		Drain	New Proposed
15	81+610	1	5.00		Drain	New Proposed
16	82+360	1	5.00		Drain	New Proposed
17	83+135	1	3.00	36	Drain	New Proposed

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
18	84+060	1	2.00		Drain	New Proposed
19	84+260	1	6.00	19	Drain	New Proposed
20	84+340	1	6.00		Drain	New Proposed
21	85+020	1	6.00		Drain	New Proposed
22	85+100	1	2.00		Drain	New Proposed
23	85+545	1	3.00		Drain	New Proposed
24	85+800	1	2.00		Drain	New Proposed
25	86+080	1	2.00	36	Drain	New Proposed
26	86+960	1	3.00	38	Drain	New Proposed
27	86+995	1	5.00		Drain	New Proposed
28	87+230	1	5.00		Drain	New Proposed
29	87+720	1	3.00		Drain	New Proposed
30	87+922	1	3.00	21	Drain	New Proposed
31	88+980	1	3.00		Drain	New Proposed
32	89+070	1	3.00		Drain	New Proposed
33	89+160	1	3.00		Drain	New Proposed
34	89+240	1	6.00		Drain	New Proposed
35	89+415	1	6.00		Drain	New Proposed
36	89+650	1	6.00		Drain	New Proposed
37	89+710	1	3.00		Drain	New Proposed
38	89+760	1	6.00		Drain	New Proposed
39	92+080	1	6.00		Drain	New Proposed
40	92+740	1	6.00	22	Drain	New Proposed
41	92+860	1	6.00		Drain	New Proposed
42	93+130	1	6.00		Drain	New Proposed
43	93+815	1	3.00		Drain	New Proposed
44	93+935	1	3.00		Drain	New Proposed
45	93+975	1	3.00		Drain	New Proposed
46	94+155	1	6.00		Drain	New Proposed
47	94+230	1	5.00		Drain	New Proposed
48	94+630	1	6.00		Drain	New Proposed
49	94+710	1	6.00		Drain	New Proposed
50	95+950	1	6.00		Drain	New Proposed
51	96+310	1	3.00		Drain	New Proposed
52	96+405	1	3.00		Drain	New Proposed
53	96+490	1	2.00		Drain	New Proposed
54	96+790	1	3.00		Drain	New Proposed
55	96+960	1	2.00		Drain	New Proposed
56	97+150	1	3.00		Drain	New Proposed
57	97+400	1	2.00		Drain	New Proposed
58	97+520	1	6.00		Drain	New Proposed
59	97+660	1	6.00		Drain	New Proposed
60	97+935	1	3.00		Drain	New Proposed
61	98+010	1	3.00		Drain	New Proposed
62	98+080	1	6.00		Drain	New Proposed
63	99+920	1	2.00		Drain	New Proposed
64	100+530	1	3.00		Drain	New Proposed
65	100+720	1	6.00		Drain	New Proposed
66	100+880	1	6.00		Drain	New Proposed
67	101+040	1	2.00		Drain	New Proposed
68	101+090	1	2.00		Drain	New Proposed
69	101+670	1	6.00		Drain	New Proposed
70	101+770	1	6.00		Drain	New Proposed
71	102+260	1	5.00		Drain	New Proposed
72	102+350	1	5.00		Drain	New Proposed

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
73	102+560	1	3.00		Drain	New Proposed
74	102+590	1	6.00		Drain	New Proposed
75	102+800	1	5.00		Drain	New Proposed
76	102+990	1	2.00		Drain	New Proposed
77	103+030	1	3.00		Drain	New Proposed
78	103+230	1	6.00		Drain	New Proposed
79	103+590	1	3.00		Drain	New Proposed
80	103+700	1	3.00		Drain	New Proposed
81	103+800	1	3.00		Drain	New Proposed
82	103+870	1	3.00		Drain	New Proposed
83	104+410	1	6.00		Drain	New Proposed
84	104+570	1	3.00		Drain	New Proposed
85	104+840	1	6.00		Drain	New Proposed
86	105+000	1	6.00		Drain	New Proposed
87	105+060	1	6.00		Drain	New Proposed
88	105+120	1	6.00		Drain	New Proposed
89	105+215	1	6.00		Drain	New Proposed
90	106+150	1	3.00		Drain	New Proposed
91	106+420	1	3.00		Drain	New Proposed
92	108+020	1	3.00		Drain	New Proposed
93	110+470	1	6.00		Drain	New Proposed
94	110+665	1	6.00		Drain	New Proposed
95	110+890	1	6.00		Drain	New Proposed
96	110+980	1	6.00		Drain	New Proposed
97	111+110	1	6.00		Drain	New Proposed
98	111+190	1	6.00		Drain	New Proposed
99	111+310	1	3.00		Drain	New Proposed
100	113+470	1	6.00		Drain	New Proposed
101	119+035	1	3.00		Drain	New Proposed
102	119+170	1	6.00		Drain	New Proposed
103	119+610	1	2.00		Drain	New Proposed
104	119+660	1	2.00		Drain	New Proposed
105	120+420	1	6.00		Drain	New Proposed
106	120+480	1	6.00		Drain	New Proposed
107	120+540	1	6.00		Drain	New Proposed
108	120+760	1	3.00		Drain	New Proposed
109	120+820	1	2.00		Drain	New Proposed
110	121+460	1	3.00		Drain	New Proposed
111	122+320	1	3.00		Drain	New Proposed
112	122+820	1	3.00		Drain	New Proposed
113	122+900	1	3.00		Drain	New Proposed
114	123+080	1	3.00		Drain	New Proposed
115	123+410	1	3.00		Drain	New Proposed
116	123+620	1	5.00		Drain	New Proposed
117	123+940	1	5.00		Drain	New Proposed
118	124+100	1	6.00		Drain	New Proposed
119	124+745	1	5.00		Drain	New Proposed
120	124+885	1	6.00		Drain	New Proposed
121	125+180	1	6.00		Drain	New Proposed
122	125+260	1	6.00		Drain	New Proposed
123	125+300	1	3.00		Drain	New Proposed
124	125+460	1	6.00		Drain	New Proposed
125	126+420	1	6.00		Drain	New Proposed
126	126+520	1	6.00		Drain	New Proposed
127	127+210	1	3.00		Drain	New Proposed

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
128	128+920	1	6.00		Drain	New Proposed
129	129+370	1	3.00		Drain	New Proposed
130	131+720	1	3.00		Drain	New Proposed
131	131+780	1	5.00		Drain	New Proposed
132	132+520	1	5.00		Drain	New Proposed
133	132+630	1	5.00		Drain	New Proposed
134	132+920	1	5.00		Drain	New Proposed
135	133+040	1	5.00		Drain	New Proposed
136	133+090	1	5.00		Drain	New Proposed
137	133+160	1	5.00		Drain	New Proposed

Culverts on Cross Road 2 at near Ch. 127+800 of Main Carriageway

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+020 (Near Ch. 127+750 of Main carriageway)	1	2.00	-	Drain	New Proposed
2	0+190 (Near Ch. 127+900 of Main carriageway)	1	2.00	-	Drain	New Proposed

Culverts on Cross Road 4 at near Ch. 128+830 of Main Carriageway

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+025 (Near Ch. 128+830 of Main carriageway)	1	2.00	-	Drain	New Proposed

Culverts on Cross Road 5 at near Ch. 130+200 of Main Carriageway

S. No.	Design Chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+380 (Near Ch. 130+200 of Main carriageway)	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
102 Nos. Box barrels of 2X2m shall be provided to junction.					

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	78+600	133+320	91 Nos. Single Row for one utility services @ 300m
2	78+600	133+320	91 Nos. Double Row for two utility services @ 600m
3	2736 m Length (Both side cumulative length- 5472 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.
- All Culverts structures shall be designed to carry utility services like OFC Cables, Electricity Lines etc
- 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 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)	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
					MCW	SR			
1	0+080	12.0	12.0	Stream	8.50		-	-	Cross road-3 (Near Ch. 128+400 of Main carriageway)

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:

Main Carriageway

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	79+530	120.00	3	40.00	Stream	2 x 14.50	-	-	New construction
2	80+750	200.00	5	40.00	Stream	2 x 14.50	-	-	New construction
3	81+816	225.00	5	45.00	Stream	2 x 14.50	-	-	New construction
4	82+543	225.00	5	45.00	Stream	2 x 14.50	-	-	New construction
5	83+308	105.00	3	35.00	Stream	2 x 14.50	-	-	New construction
6	83+840	240.00	1	60.00	Stream	2 x 14.50	-	-	New construction
			1	120.00					
			1	60.00					
7	84+903	45.00	1	45.00	Stream	2 x 14.50	-	-	New construction
8	85+263	85.00	1	85.00	Stream	2 x 14.50	-	-	New construction
9	86+278	35.00	1	35.00	Stream	2 x 14.50	-	-	New construction
10	88+568	665.00	3	40.00	Stream	2 x 14.50	-	-	New construction
			5	109.00					
			1	40.00					
11	89+921	182.00	1	102.00	Stream	2 x 14.50	-	-	New construction
			1	40.00					
			1	40.00					
12	91+730	500.00	5	100.00	Stream	2 x 14.50	-	-	New construction
13	92+340	200.00	5	40.00	Stream	2 x 14.50	-	-	New construction
14	92+560	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
15	93+405	170.00	4	42.50	Stream	2 x 14.50	-	-	New construction
16	93+750	40.00	1	40.00	Stream	2 x 14.50	-	-	New construction
17	96+105	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
18	96+150	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
19	96+669	102.00	1	102.00	Stream	2 x 14.50	-	-	New construction
20	98+200	60.00	1	60.00	Stream	2 x 14.50	-	-	New construction
21	98+670	540.00	5	108.00	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		
22	100+140	240.00	3	80.00	Stream	2 x 14.50	-	-	New construction
23	101+720	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
24	102+485	90.00	2	45.00	Stream	2 x 14.50	-	-	New construction
25	102+730	60.00	1	60.00	Stream	2 x 14.50	-	-	New construction
26	105+393	65.00	1	65.00	Stream	2 x 14.50	-	-	New construction
27	105+570	40.00	1	40.00	Stream	2 x 14.50	-	-	New construction
28	105+733	246.00	6	41.00	Stream	2 x 14.50	-	-	New construction
29	105+990	80.00	1	80.00	Stream	2 x 14.50	-	-	New construction
30	106+944	102.00	1	102.00	Stream	2 x 14.50	-	-	New construction
31	107+105	30.00	1	30.00	Stream	2 x 14.50	-	-	New construction
32	108+119	62.00	1	62.00	Stream	2 x 14.50	-	-	New construction
33	108+400	321.00	3	107.00	Stream	2 x 14.50	-	-	New construction
34	108+748	175.00	5	35.00	Stream	2 x 14.50	-	-	New construction
35	109+620	480.00	4	120.00	Stream	2 x 14.50	-	-	New construction
36	110+273	35.00	1	35.00	Stream	2 x 14.50	-	-	New construction
37	111+625	280.00	7	40.00	Stream	2 x 14.50	-	-	New construction
38	111+960	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
39	112+254	408.00	4	102.00	Stream	2 x 14.50	-	-	New construction
40	112+755	40.00 (Skew length- 42.846m)	1	40.00	Stream	2 x 14.50 (Skew Width- 15.532m)	-	21	New construction
41	112+820	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
42	112+915	130.00	2	65.00	Stream	2 x 14.50	-	-	New construction
43	113+020	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
44	113+430	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
45	113+540	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
46	113+740	80.00	2	40.00	Stream	2 x 14.50	-	-	New construction
47	114+090	392.00	4	98.00	Stream	2 x 14.50	-	-	New construction
48	114+533	264.00	1 2	40.00 112.00	Stream	2 x 14.50	-	-	New construction
49	114+825	190.00	1 1 1	39.00 112.00 39.00	Stream	2 x 14.50	-	-	New construction
50	115+005	70.00	1	70.00	Stream	2 x 14.50	-	-	New construction
51	115+353	385.00	1 1 2	45.00 120.00 110.00	Stream	2 x 14.50	-	-	New construction
52	115+580	40.00	1	40.00	Stream	2 x 14.50	-	-	New construction
53	116+005 (LHS)	700.00	7	100.00	Stream	1 x 14.50	-	-	New construction
	116+075 (RHS)	840.00	7	120.00	Stream	1 x 14.50	-	-	New construction
54	116+790	460.00	3 1 1 1	80.00 60.00 110.00 50.00	Stream	2 x 14.50	-	-	New construction
55	117+910	900.00	9	100.00	Stream	2 x 14.50	-	-	New construction
56	118+735	230.00	1 1 1	60.00 110.00 60.00	Stream	2 x 14.50	-	-	New construction
57	118+945	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
58	119+340	10.00	1	10.00	Stream	2 x 14.50	-	-	New construction
59	119+750	120.00	4	30.00	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		
60	119+853	35.00	1	35.00	Stream	2 x 14.50	-	-	New construction
61	120+140	360.00	4	90.00	Stream	2 x 14.50	-	-	New construction
62	120+358	25.00	1	25.00	Stream	2 x 14.50	-	-	New construction
63	120+608	45.00	1	45.00	Stream	2 x 14.50	-	-	New construction
64	120+690	8.00	1	8.00	Stream	2 x 14.50	-	-	New construction
65	121+120	120.00	1	80.00	Stream	2 x 14.50	-	-	New construction
66	121+220	10.00	1	40.00	Stream	2 x 14.50	-	-	New construction
67	121+540	12.00	1	10.00	Stream	2 x 14.50	-	-	New construction
68	121+600	40.00	1	12.00	Stream	2 x 14.50	-	-	New construction
69	121+760	160.00	4	40.00	Stream	2 x 14.50	-	-	New construction
70	122+065	330.00	3	40.00	Stream	2 x 14.50	-	-	New construction
71	122+270	10.00	1	110.00	Stream	2 x 14.50	-	-	New construction
72	122+360	30.00	1	10.00	Stream	2 x 14.50	-	-	New construction
73	122+570	240.00	6	30.00	Stream	2 x 14.50	-	-	New construction
74	123+160	10.00 (Skew length- 19.276m)	1	10.00	Stream	2 x 14.50 (Skew Width- 24.094m)	-	53	New construction
75	123+570	12.00 (Skew length- 17.058m)	1	12.00	Stream	2 x 14.50 (Skew Width- 17.923m)	-	36	New construction
76	123+730	60.00	1	60.00	Stream	2 x 14.50	-	-	New construction
77	124+020	40.00	1	40.00	Stream	2 x 14.50	-	-	New construction
78	124+215	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
79	124+260	30.00	1	30.00	Stream	2 x 14.50	-	-	New construction
80	124+320	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
81	124+391	102.00	1	102.00	Stream	2 x 14.50	-	-	New construction
82	124+529	102.00	1	102.00	Stream	2 x 14.50	-	-	New construction
83	124+808	35.00	1	35.00	Stream	2 x 14.50	-	-	New construction
84	124+969	62.00	1	62.00	Stream	2 x 14.50	-	-	New construction
85	125+091	102.00	1	102.00	Stream	2 x 14.50	-	-	New construction
86	125+595	90.00	2	45.00	Stream	2 x 14.50	-	-	New construction
87	125+760	80.00	2	40.00	Stream	2 x 14.50	-	-	New construction
88	126+040	360.00	9	40.00	Stream	2 x 14.50	-	-	New construction
89	126+788	80.00	1	80.00	Stream	2 x 14.50	-	-	New construction
90	127+005	30.00	1	30.00	Stream	2 x 14.50	-	-	New construction
91	127+368	225.00	5	45.00	Stream	2 x 14.50	-	-	New construction
92	127+651	62.00	1	62.00	Stream	2 x 14.50	-	-	New construction
93	128+138	565.00	2	72.50	Stream	2 x 14.50	-	-	New construction
94	128+485	30.00	3	140.00	Stream	2 x 14.50	-	-	New construction
95	128+740	8.00	1	30.00	Stream	2 x 14.50	-	-	New construction
96	128+830	15.00	1	15.00	Stream	2 x 14.50	-	-	New construction
97	129+045	180.00	2	90.00	Stream	2 x 14.50	-	-	New construction
98	129+667 (RHS)	204.00	2	102.00	Stream	1 x 14.50	-	-	New construction
	129+718 (LHS)	306.00	3	102.00	Stream	1 x 14.50	-	-	New construction
99	130+088 (LHS)	135.00	1	80.00	Stream	1 x 14.50	-	-	New construction
	130+100 (RHS)	110.00	1	55.00	Stream	1 x 14.50	-	-	New construction
			2	55.00	Stream	1 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		
100	130+460	120.00	1	120.00	Stream	2 x 14.50	-	-	New construction
101	131+350	460.00	4	115.00	Stream	2 x 14.50	-	-	New construction
102	132+150	260.00	4	65.00	Stream	2 x 14.50	-	-	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. 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 after 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.

- 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.
- The ROB shall be constructed and maintained by the concessionaire under supervision of the Railways.
- 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

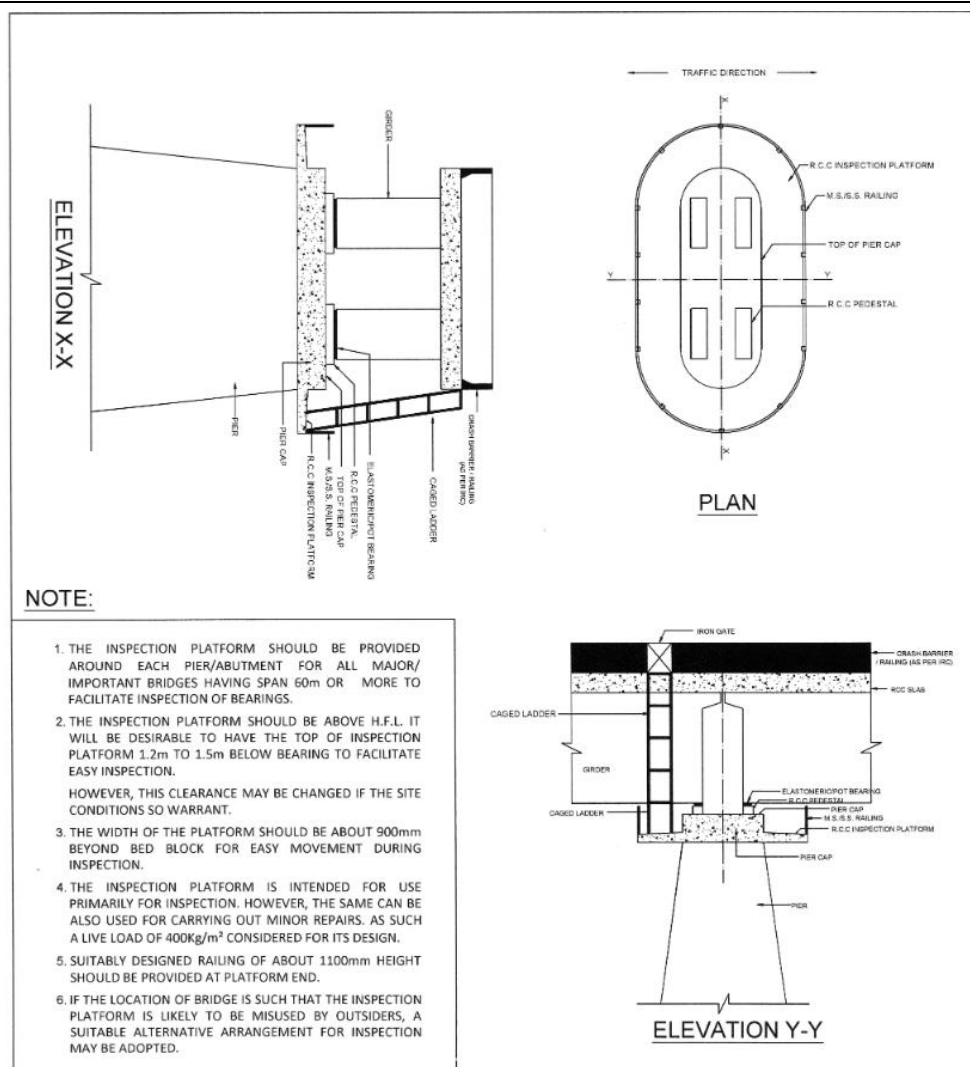
S. No.	Type of Structure	New Proposed/ Reconstruction
1	Major Bridge	02
2	Minor Bridge	16
3	Viaduct	84
4	Box Culvert	137
5	VOP	09
6	VUP	-
7	LVUP	-
8	SVUP	08
9	Utility underpass	-
10	Overpass	24
11	Underpass	-
Total		280

For Cross Roads

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

Note:

- a. Foundation levels/Type 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 IWA/Irrigation Authority/Other concerned Authority guidelines wherever required considering navigational requirement. Any change in span arrangement due to this with 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 be 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 for both Main carriageway.

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.

Sr. No.	Location Stretch		Type of Safety Barrier	LHS/ RHS
	From (Km)	To (Km)		
	Nil			

11. Special Requirements

As the project road passes through hilly/mountainous terrain and involves significant hill cutting, stability of cut slopes and hills alongside 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 (except from Design Chainage 113+780 to 113+895, Length-115m, from Design Chainage 129+330 to 129+370, Length-40m, from Design Chainage 130+640 to 130+880, Length-240m & 132+390 to 132+440, Length- 50m where 1H:2V is proposed. **The Concessionaire shall carry out slope protection works at these locations in accordance with the Typical Cross Sections provided in Annex II (Schedule B).** 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 Turfing as part of the slope protection/erosion control measures has been made for the exposed face of the cut in the entire project stretch. Cut Slope treatment for main carriageway a minimum length of 16240 m by Hydro seeding and mulching, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per sqm. and laying and fixing jute netting, including watering. Additionally, Full-face shotcrete, welded mesh, weep holes, and full drainage provisions (As per Cross section attached as Annexure-II of Schedule B) shall be provided for rockfall measures in a length of 1174 m (For Main Carriageway). The turfing 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. Necessary turfing, seeding & mulching, or plantation works, wherever required, shall be carried out immediately after laying the Turfing/seeding Mulching 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 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 2,52,24,060 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 2,52,24,060 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.

Retaining structures and protection, works shall be provided at locations as provided in TCS Schedule in Clause 2.10 of Annex-I of Schedule-B. Location of the Retaining wall and Toe wall with stone pitching is given below and shall be considered as minimum requirement.

However, the concessionaire can propose the new innovative technology in consultation with Authority/Independent Engineers.

RCC Crash Barrier with Friction Slab

S. No.	Item	Design Chainage From	Design Chainage To	Total Length (m)	Location	Remarks
1	RCC Crash Barrier with Friction Slab for Main Carriageway	78+600	78+697	194	At the top of RE wall	At the top of RE wall (Structure length shall be deducted)
		78+704	78+720	32		
		79+980	80+047	134		
		80+054	80+140	172		
		80+560	80+650	180		
		80+850	80+880	60		
		81+660	81+703	86		
		81+928	81+960	64		
		82+400	82+430	60		
		82+655	82+680	50		
		83+240	83+255	30		

S. No.	Item	Design Chainage From	Design Chainage To	Total Length (m)	Location	Remarks
		83+360	83+400	80		
		84+840	84+880	80		
		84+925	84+960	70		
		86+240	86+260	40		
		86+295	86+320	50		
		89+380	89+402	44		
		89+409	89+480	142		
		92+200	92+240	80		
		92+440	92+553	226		
		92+568	92+600	64		
		93+280	93+320	80		
		93+490	93+520	60		
		93+770	93+840	140		
		94+720	94+772	104		
		94+779	94+800	42		
		97+640	97+687	94		
		97+694	97+720	52		
		97+980	98+057	154		
		98+064	98+100	72		
		100+860	100+897	74		
		100+904	100+920	32		
		108+560	108+617	114		
		108+624	108+660	72		
Total (m)				3028		

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

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
82+360	82+400	40	79+080	79+100	20
84+240	84+380	140	79+760	79+800	40
86+980	87+000	20	85+180	85+220	40
87+220	87+240	20	85+460	85+500	40
87+720	87+740	20	85+520	85+540	20
88+140	88+235	95	89+760	89+780	20
89+100	89+120	20	92+660	92+800	140
89+160	89+180	20	92+840	92+900	60
89+220	89+280	60	96+080	96+100	20
89+640	89+680	40	96+720	96+740	20
89+740	89+820	80	97+140	97+160	20
91+980	92+020	40	98+380	98+400	20
92+660	92+700	40	100+700	100+800	100
92+740	92+760	20	104+400	104+440	40
93+700	93+730	30	108+150	108+240	90
94+080	94+120	40	111+765	111+780	15
96+080	96+100	20	112+660	112+735	75
96+110	96+145	35	112+775	112+800	25
96+155	96+180	25	116+495	116+560	65
98+940	98+960	20	118+580	118+620	40
101+660	101+713	53	118+850	118+937	87
101+728	101+780	52	118+952	118+980	28

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
102+260	102+280	20	119+870	119+960	90
102+300	102+360	60	120+480	120+500	20
102+530	102+580	50	121+880	121+900	20
102+600	102+620	20	123+140	123+155	15
102+680	102+700	20	123+940	123+980	40
102+800	102+820	20	124+040	124+060	20
103+220	103+240	20	124+100	124+120	20
103+580	103+600	20	124+200	124+208	8
103+620	103+640	20	124+327	124+340	13
103+680	103+700	20	124+442	124+478	36
105+000	105+040	40	124+580	124+620	40
105+060	105+100	40	124+760	124+780	20
105+120	105+140	20	124+825	124+860	35
105+200	105+240	40	124+880	124+938	58
105+460	105+500	40	125+200	125+260	60
105+520	105+550	30	125+660	125+680	20
106+995	107+040	45	126+380	126+460	80
107+080	107+090	10	128+835	128+860	25
108+000	108+020	20	130+155	130+220	65
108+150	108+240	90	131+580	131+600	20
108+835	108+860	25	131+700	131+720	20
109+320	109+340	20	131+780	131+820	40
109+860	109+900	40	132+500	132+540	40
110+660	110+680	20	132+560	132+660	100
110+800	110+820	20	132+920	132+940	20
110+860	110+920	60			
110+960	110+980	20			
111+000	111+020	20			
111+160	111+180	20			
111+765	111+780	15			
112+040	112+050	10			
114+285	114+300	15			
114+340	114+401	61			
114+665	114+730	65			
114+920	114+940	20			
114+960	114+970	10			
115+040	115+060	20			
115+140	115+160	20			
115+545	115+560	15			
115+600	115+655	55			
118+850	118+880	30			
120+320	120+340	20			
120+480	120+500	20			
120+540	120+560	20			
121+460	121+480	20			
121+520	121+534	14			
121+546	121+580	34			
121+620	121+680	60			
121+840	121+880	40			
122+230	122+265	35			
122+275	122+300	25			
122+320	122+345	25			
122+690	122+700	10			
122+800	122+820	20			
125+142	125+160	18			

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
125+800	125+860	60			
129+871	129+920	49			
131+100	131+120	20			
131+580	131+600	20			
132+280	132+360	80			
132+600	132+620	20			
132+920	132+940	20			
Total (m)		2786	Total (m)		1950

RCC Retaining Wall- (For Cross Roads)

Design Chainage From	Design Chainage To	Length (m)
Crossroads		80
Total (m)		80

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. However, the concessionaire can propose the new innovative technology in consultation with IE.

- 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 of appropriate type (For Main Carriageway)

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
78+740	78+820	80	78+720	78+820	100
78+960	79+040	80	78+840	78+900	60
79+100	79+460	360	78+960	79+000	40
79+620	79+720	100	79+020	79+060	40
79+780	79+900	120	79+160	79+420	260
79+940	79+980	40	79+640	79+660	20
80+320	80+500	180	79+700	79+740	40
80+880	81+440	560	79+840	79+860	20
81+460	81+520	60	79+940	79+980	40
81+960	82+340	380	80+300	80+560	260
82+700	83+080	380	80+880	81+440	560
83+200	83+240	40	81+640	81+660	20
83+420	83+460	40	81+960	82+400	440
83+480	83+720	240	82+680	83+100	420
84+020	84+060	40	83+420	83+680	260
84+080	84+200	120	84+080	84+180	100
84+400	84+840	440	84+200	84+240	40
84+980	85+000	20	84+320	84+340	20
85+040	85+160	120	84+360	84+780	420
85+360	85+460	100	84+800	84+840	40
85+480	85+520	40	84+980	85+020	40
85+580	85+800	220	85+040	85+140	100
85+840	86+020	180	85+400	85+440	40
86+060	86+080	20	85+580	85+760	180
86+100	86+160	60	85+820	85+980	160
86+340	86+660	320	86+100	86+120	20
86+680	86+960	280	86+140	86+240	100
87+020	87+220	200	86+320	86+960	640
87+320	87+400	80	87+020	87+720	700
87+420	87+620	200	87+740	88+235	495
87+780	88+000	220	88+920	89+240	320
88+940	88+960	20	89+260	89+380	120
89+020	89+060	40	89+520	89+640	120
89+200	89+220	20	89+680	89+700	20
89+320	89+380	60	89+800	89+820	20
89+480	89+620	140	90+060	91+460	1400
90+060	91+460	1400	91+980	92+020	40
92+600	92+640	40	92+120	92+200	80
92+780	92+820	40	92+600	92+640	40
92+900	93+100	200	92+800	92+820	20
93+200	93+280	80	92+920	93+120	200
93+520	93+660	140	93+180	93+280	100
93+880	93+920	40	93+540	93+730	190
94+000	94+060	60	93+840	93+940	100
94+280	94+620	340	93+960	94+120	160
94+800	96+060	1260	94+280	94+620	340
96+220	96+240	20	94+800	96+060	1260
96+340	96+380	40	96+180	96+240	60
96+440	96+480	40	96+280	96+300	20
96+500	96+580	80	96+340	96+400	60
96+740	96+800	60	96+440	96+618	178
96+820	97+140	320	96+760	96+780	20

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
97+200	97+520	320	96+820	96+960	140
97+740	97+920	180	96+980	97+120	140
98+100	98+160	60	97+200	97+400	200
98+230	98+400	170	97+460	97+480	20
99+020	99+920	900	97+540	97+600	60
99+940	99+960	20	97+720	97+940	220
100+300	100+700	400	98+100	98+160	60
100+760	100+860	100	98+260	98+380	120
100+940	101+040	100	98+940	100+000	1060
101+060	101+620	560	100+280	100+680	400
101+820	102+220	400	100+920	101+713	793
102+280	102+300	20	101+728	101+760	32
102+840	103+020	180	101+780	102+440	660
103+060	103+200	140	102+620	102+700	80
103+320	103+540	220	102+760	103+160	400
103+800	103+860	60	103+180	103+200	20
103+900	104+400	500	103+300	103+800	500
104+420	104+980	560	103+820	103+860	40
105+100	105+120	20	103+880	104+380	500
105+160	105+180	20	104+460	104+840	380
105+280	105+340	60	104+860	105+040	180
105+440	105+460	20	105+120	105+200	80
105+590	105+610	20	105+280	105+360	80
105+856	105+940	84	105+425	105+550	125
106+100	106+860	760	105+590	105+610	20
107+200	107+980	780	105+856	105+950	94
108+860	108+880	20	106+030	106+893	863
108+900	109+300	400	107+060	107+090	30
109+920	110+255	335	107+120	108+000	880
110+290	110+660	370	108+860	108+880	20
110+680	110+800	120	108+900	109+380	480
110+820	110+860	40	109+900	110+255	355
111+040	111+140	100	110+290	110+960	670
111+220	111+485	265	111+020	111+120	100
111+800	111+820	20	111+140	111+180	40
111+840	111+880	40	111+200	111+485	285
111+900	111+920	20	111+800	111+920	120
111+968	112+000	32	111+968	112+000	32
112+000	112+020	20	112+000	112+050	50
112+480	112+720	240	112+560	112+660	100
113+025	113+425	400	113+000	113+015	15
113+480	113+520	40	113+025	113+425	400
113+545	113+700	155	113+480	113+520	40
115+100	115+140	40	113+545	113+700	155
116+355	116+495	140	114+285	114+401	116
116+495	116+560	65	114+665	114+730	65
117+040	117+460	420	114+940	114+970	30
118+360	118+620	260	115+040	115+160	120
118+880	118+937	57	115+600	115+655	55
118+952	119+160	208	117+020	117+440	420
119+180	119+335	155	118+380	118+580	200
119+400	119+660	260	119+020	119+040	20
119+680	119+690	10	119+060	119+160	100
119+810	119+835	25	119+200	119+320	120
119+870	119+960	90	119+345	119+620	275

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
120+340	120+345	5	119+640	119+690	50
120+400	120+420	20	120+340	120+345	5
120+440	120+480	40	120+400	120+420	20
120+500	120+520	20	120+440	120+480	40
120+660	120+686	26	120+500	120+585	85
120+720	120+760	40	120+630	120+686	56
120+780	120+820	40	120+694	120+760	66
120+840	121+040	200	120+780	121+060	280
121+225	121+440	215	121+260	121+534	274
121+480	121+500	20	121+546	121+580	34
122+400	122+450	50	121+620	121+660	40
122+720	122+800	80	121+840	121+880	40
122+860	122+900	40	122+230	122+265	35
122+920	123+155	235	122+275	122+345	70
123+200	123+564	364	122+375	122+440	65
123+576	123+700	124	122+700	123+080	380
123+780	124+000	220	123+100	123+120	20
124+040	124+200	160	123+200	123+540	340
124+223	124+245	22	123+600	123+620	20
124+275	124+312	37	123+640	123+700	60
124+327	124+340	13	123+780	123+920	140
124+442	124+478	36	123+980	124+000	20
124+600	124+790	190	124+080	124+100	20
124+825	124+880	55	124+140	124+200	60
124+900	124+938	38	124+223	124+245	22
125+000	125+040	40	124+680	124+720	40
125+160	125+180	20	125+020	125+040	20
125+200	125+240	40	125+160	125+180	20
125+280	125+440	160	125+280	125+300	20
125+500	125+520	20	125+320	125+550	230
125+660	125+720	60	125+820	125+860	40
126+320	126+420	100	126+240	126+300	60
126+440	126+560	120	126+320	126+380	60
126+580	126+748	168	126+560	126+720	160
126+880	126+990	110	126+828	126+990	162
127+040	127+255	215	127+040	127+240	200
127+540	127+620	80	127+480	127+620	140
127+700	127+855	155	127+740	127+855	115
128+420	128+460	40	128+500	128+580	80
128+500	128+736	236	128+600	128+736	136
128+744	128+820	76	129+135	129+380	245
128+835	128+940	105	129+400	129+565	165
129+160	129+565	405	129+769	129+871	102
129+940	130+020	80	129+871	130+020	149
130+155	130+400	245	130+020	130+045	25
130+540	130+640	100	130+240	130+400	160
130+880	131+100	220	130+540	130+640	100
131+600	132+020	420	130+880	131+120	240
132+360	132+520	160	131+620	131+640	20
132+640	132+900	260	131+660	131+680	20
132+960	133+040	80	131+740	131+780	40
133+060	133+160	100	131+840	132+020	180
133+180	133+320	140	132+320	132+480	160
			132+660	132+860	200
			132+940	132+980	40

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
			133+000	133+040	40
			133+180	133+320	140
Total (m)		27006	Total (m)		28854

Breast Wall- (For Cross Roads)

Design Chainage From	Design Chainage To	Length (m)
Crossroads		82
Total (m)		82

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

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
78+840	78+860	20	79+060	79+080	20
78+880	78+920	40	79+590	79+620	30
79+060	79+100	40	79+740	79+820	80
79+740	79+760	20	79+860	79+880	20
80+160	80+180	20	79+900	79+920	20
81+620	81+640	20	80+160	80+200	40
82+360	82+400	40	81+540	81+620	80
83+080	83+180	100	83+140	83+180	40
83+960	83+980	20	83+960	84+060	100
84+220	84+240	20	84+240	84+320	80
84+320	84+340	20	84+340	84+360	20
84+360	84+380	20	85+305	85+320	15
85+020	85+040	20	85+460	85+500	40
85+160	85+220	60	85+540	85+560	20
85+305	85+320	15	86+020	86+060	40
85+520	85+580	60	86+980	87+000	20
86+180	86+240	60	88+900	88+920	20
86+960	86+980	20	89+240	89+260	20
87+000	87+020	20	89+640	89+660	20
87+220	87+260	40	89+740	89+800	60
87+620	87+740	120	89+820	89+830	10
88+140	88+235	95	92+640	92+700	60
88+980	89+000	20	92+740	92+800	60
89+060	89+120	60	92+900	92+920	20

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
89+160	89+180	20	94+140	94+240	100
89+220	89+240	20	94+680	94+720	40
89+260	89+280	20	96+080	96+100	20
89+300	89+320	20	96+110	96+145	35
89+660	89+740	80	96+155	96+180	25
89+760	89+780	20	97+120	97+140	20
89+800	89+830	30	97+160	97+180	20
90+012	90+060	48	97+400	97+420	20
91+460	91+480	20	97+480	97+520	40
91+980	92+120	140	97+960	97+980	20
92+660	92+760	100	98+380	98+400	20
92+840	92+900	60	100+700	100+720	20
93+100	93+160	60	100+760	100+820	60
93+700	93+730	30	101+760	101+780	20
93+840	93+880	40	102+530	102+580	50
93+940	93+960	20	102+600	102+620	20
93+980	94+000	20	103+220	103+260	40
94+060	94+280	220	104+420	104+460	40
94+620	94+700	80	104+840	104+860	20
96+060	96+100	40	105+060	105+100	40
96+180	96+200	20	105+200	105+240	40
96+380	96+400	20	106+995	107+040	45
96+720	96+740	20	108+000	108+020	20
97+140	97+180	40	108+150	108+240	90
97+600	97+640	40	108+835	108+860	25
98+940	98+960	20	109+860	109+880	20
100+260	100+280	20	110+960	110+980	20
100+720	100+760	40	111+765	111+780	15
101+640	101+713	73	112+460	112+560	100
101+728	101+760	32	112+660	112+735	75
101+780	101+800	20	112+800	112+815	15
102+240	102+280	40	112+825	112+850	25
102+300	102+420	120	115+545	115+560	15
102+580	102+600	20	116+495	116+560	65
102+640	102+700	60	117+440	117+460	20
102+800	102+840	40	118+360	118+380	20
103+200	103+220	20	118+580	118+620	40
103+240	103+280	40	118+850	118+937	87
103+580	103+640	60	118+952	118+980	28
103+680	103+740	60	119+040	119+060	20
104+400	104+420	20	119+870	119+960	90
105+000	105+040	40	120+320	120+340	20
105+120	105+160	40	120+480	120+500	20
105+240	105+280	40	121+180	121+200	20
105+340	105+360	20	121+660	121+680	20
105+425	105+440	15	122+440	122+450	10
105+460	105+550	90	122+690	122+700	10
106+060	106+080	20	123+576	123+600	24
107+040	107+090	50	123+920	123+980	60
107+120	107+140	20	124+040	124+060	20
108+020	108+088	68	124+100	124+120	20
108+150	108+240	90	124+327	124+340	13
109+320	109+360	40	124+442	124+478	36
110+660	110+680	20	124+600	124+620	20
110+800	110+820	20	124+740	124+790	50

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
110+860	110+920	60	124+825	124+880	55
111+000	111+020	20	124+900	124+938	38
111+160	111+200	40	125+000	125+020	20
111+765	111+780	15	125+142	125+160	18
111+920	111+953	33	125+180	125+240	60
112+040	112+050	10	125+260	125+280	20
112+460	112+480	20	125+300	125+320	20
112+775	112+815	40	125+640	125+720	80
112+825	112+850	25	125+800	125+820	20
112+980	113+015	35	126+220	126+240	20
114+340	114+401	61	126+380	126+420	40
114+665	114+730	65	126+440	126+560	120
114+920	114+970	50	126+720	126+748	28
115+040	115+060	20	127+240	127+255	15
115+140	115+160	20	127+682	127+720	38
115+600	115+655	55	128+420	128+470	50
117+020	117+040	20	128+780	128+820	40
118+850	118+880	30	128+835	128+940	105
120+420	120+440	20	130+155	130+220	65
120+480	120+500	20	130+520	130+540	20
120+540	120+585	45	131+580	131+600	20
120+760	120+780	20	131+700	131+740	40
121+180	121+215	35	131+780	131+820	40
121+460	121+480	20	132+280	132+300	20
121+500	121+534	34	132+500	132+520	20
121+546	121+580	34	132+540	132+560	20
121+620	121+660	40	132+600	132+620	20
121+840	121+900	60	132+640	132+660	20
122+230	122+265	35	132+900	132+940	40
122+275	122+300	25	133+060	133+160	100
122+320	122+345	25			
122+700	122+720	20			
122+800	122+820	20			
124+200	124+208	8			
124+580	124+600	20			
124+880	124+900	20			
125+240	125+280	40			
125+460	125+480	20			
125+540	125+550	10			
125+640	125+660	20			
125+820	125+860	40			
126+220	126+320	100			
126+420	126+440	20			
126+828	126+860	32			
127+480	127+540	60			
129+871	129+920	49			
131+100	131+120	20			
131+580	131+600	20			
132+300	132+360	60			
132+520	132+640	120			
132+920	132+940	20			
Total (m)		5207	Total (m)		4035

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.

Wherever the height of embankment is more than 3m, the stone pitching will be done on full face of the embankment slope excluding berm portion upto the top edge of earthen shoulder.

RCC Toe Wall

(For Main Carriageway)

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
78+840	78+860	20	79+060	79+080	20
78+880	78+920	40	79+590	79+620	30
79+060	79+100	40	79+740	79+760	20
79+740	79+760	20	79+800	79+820	20
80+160	80+180	20	79+860	79+880	20
81+620	81+640	20	79+900	79+920	20
83+080	83+180	100	80+160	80+200	40
83+960	83+980	20	81+540	81+620	80
84+220	84+240	20	83+140	83+180	40
85+020	85+040	20	83+960	84+060	100
85+160	85+220	60	84+240	84+320	80
85+305	85+320	15	84+340	84+360	20
85+520	85+580	60	85+305	85+320	15
86+180	86+240	60	85+540	85+560	20
86+960	86+980	20	86+020	86+060	40
87+000	87+020	20	86+980	87+000	20
87+240	87+260	20	88+900	88+920	20
87+620	87+720	100	89+240	89+260	20
88+980	89+000	20	89+640	89+660	20
89+060	89+100	40	89+740	89+760	20
89+300	89+320	20	89+780	89+800	20
89+680	89+740	60	89+820	89+830	10
89+820	89+830	10	92+640	92+660	20
90+012	90+060	48	92+900	92+920	20
91+460	91+480	20	94+140	94+240	100
92+020	92+120	100	94+680	94+720	40
92+700	92+740	40	96+110	96+145	35
92+840	92+900	60	96+155	96+180	25
93+100	93+160	60	97+120	97+140	20
93+840	93+880	40	97+160	97+180	20
93+940	93+960	20	97+400	97+420	20
93+980	94+000	20	97+480	97+520	40
94+060	94+080	20	97+960	97+980	20
94+120	94+280	160	100+800	100+820	20
94+620	94+700	80	101+760	101+780	20
96+060	96+080	20	102+530	102+580	50

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
96+180	96+200	20	102+600	102+620	20
96+380	96+400	20	103+220	103+260	40
96+720	96+740	20	104+440	104+460	20
97+140	97+180	40	104+840	104+860	20
97+600	97+640	40	105+060	105+100	40
100+260	100+280	20	105+200	105+240	40
100+720	100+760	40	106+995	107+040	45
101+640	101+660	20	108+000	108+020	20
101+780	101+800	20	108+835	108+860	25
102+240	102+260	20	109+860	109+880	20
102+360	102+420	60	110+960	110+980	20
102+580	102+600	20	112+460	112+560	100
102+640	102+680	40	112+800	112+815	15
102+820	102+840	20	112+825	112+850	25
103+200	103+220	20	115+545	115+560	15
103+240	103+280	40	117+440	117+460	20
103+600	103+620	20	118+360	118+380	20
103+700	103+740	40	119+040	119+060	20
104+400	104+420	20	120+320	120+340	20
105+140	105+160	20	121+180	121+200	20
105+240	105+280	40	121+660	121+680	20
105+340	105+360	20	122+440	122+450	10
105+425	105+440	15	122+690	122+700	10
105+500	105+520	20	123+576	123+600	24
106+060	106+080	20	123+920	123+940	20
107+040	107+080	40	124+740	124+760	20
107+120	107+140	20	124+780	124+790	10
108+020	108+088	68	124+860	124+880	20
109+340	109+360	20	125+000	125+020	20
111+180	111+200	20	125+142	125+160	18
111+920	111+953	33	125+180	125+200	20
112+460	112+480	20	125+260	125+280	20
112+775	112+815	40	125+300	125+320	20
112+825	112+850	25	125+640	125+660	20
112+980	113+015	35	125+680	125+720	40
114+940	114+960	20	125+800	125+820	20
117+020	117+040	20	126+220	126+240	20
120+420	120+440	20	126+460	126+560	100
120+560	120+585	25	126+720	126+748	28
120+760	120+780	20	127+240	127+255	15
121+180	121+215	35	127+682	127+720	38
121+500	121+520	20	128+420	128+470	50
121+880	121+900	20	128+780	128+820	40
122+700	122+720	20	128+860	128+940	80
122+820	122+840	20	130+520	130+540	20
124+200	124+208	8	131+720	131+740	20
124+580	124+600	20	132+280	132+300	20
124+880	124+900	20	132+540	132+560	20
125+240	125+280	40	132+900	132+920	20
125+460	125+480	20	133+060	133+160	100
125+540	125+550	10			
125+640	125+660	20			
126+220	126+320	100			
126+420	126+440	20			
126+828	126+860	32			

Left Side			Right Side		
Design Chainage From	Design Chainage To	Length (m)	Design Chainage From	Design Chainage To	Length (m)
127+480	127+540	60			
132+520	132+600	80			
132+620	132+640	20			
Total (m)		3179	Total (m)		2593

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.

- a. 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.
- b. 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.
- c. 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. 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.

All investigations, reports, designs, and rectification works shall comply with relevant IRC/MoRTH guidelines, ensuring long-term stability and safety of the project corridor.

Rat Hole Mining Areas

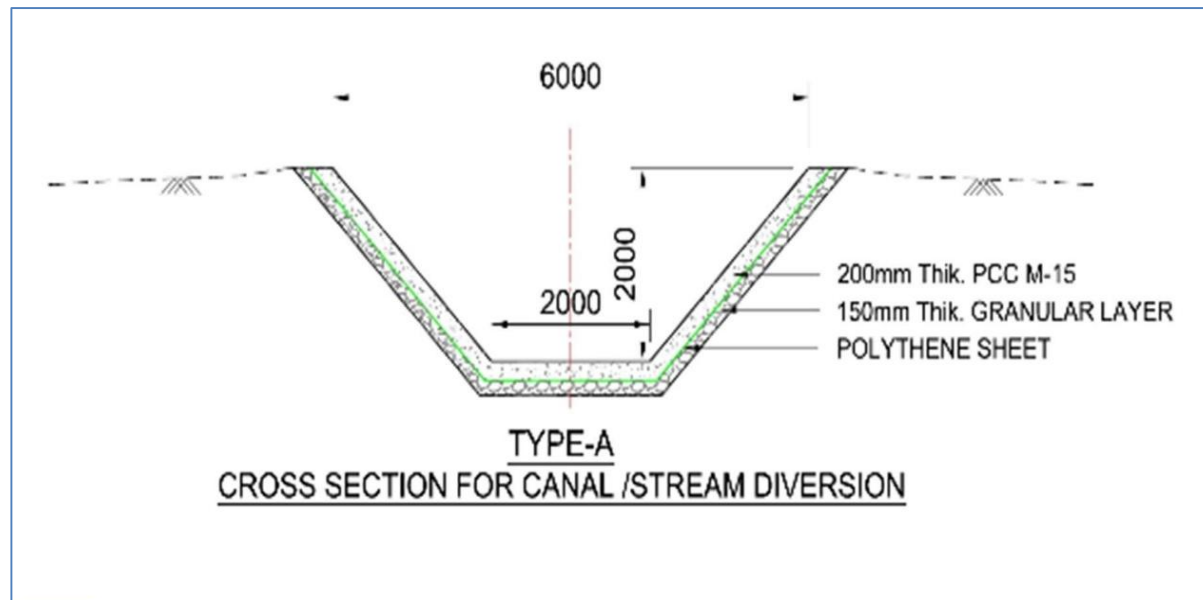
Rat-hole mining activities have been observed within and in proximity to the Right of Way (ROW) from Km 78+600 to Km 93+000. The Concessionaire shall carry out detailed Geotechnical and Geophysical investigations at all such identified locations to assess the extent, depth, stability, and potential impact 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. Tunnel by Cut & Cover Method

The concessionaire shall construct the tunnel by cut and cover method as per table mentioned below for the reference with relevant/applicable IRC codes.

S.No	Design Chainage		Length (m)	Remarks
	From	To		
1	113+780	113+895	115	Tunnel by Cut & Cover method
2	130+640	130+880	240	Tunnel by Cut & Cover method
Total (m)			355	

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:

- 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.

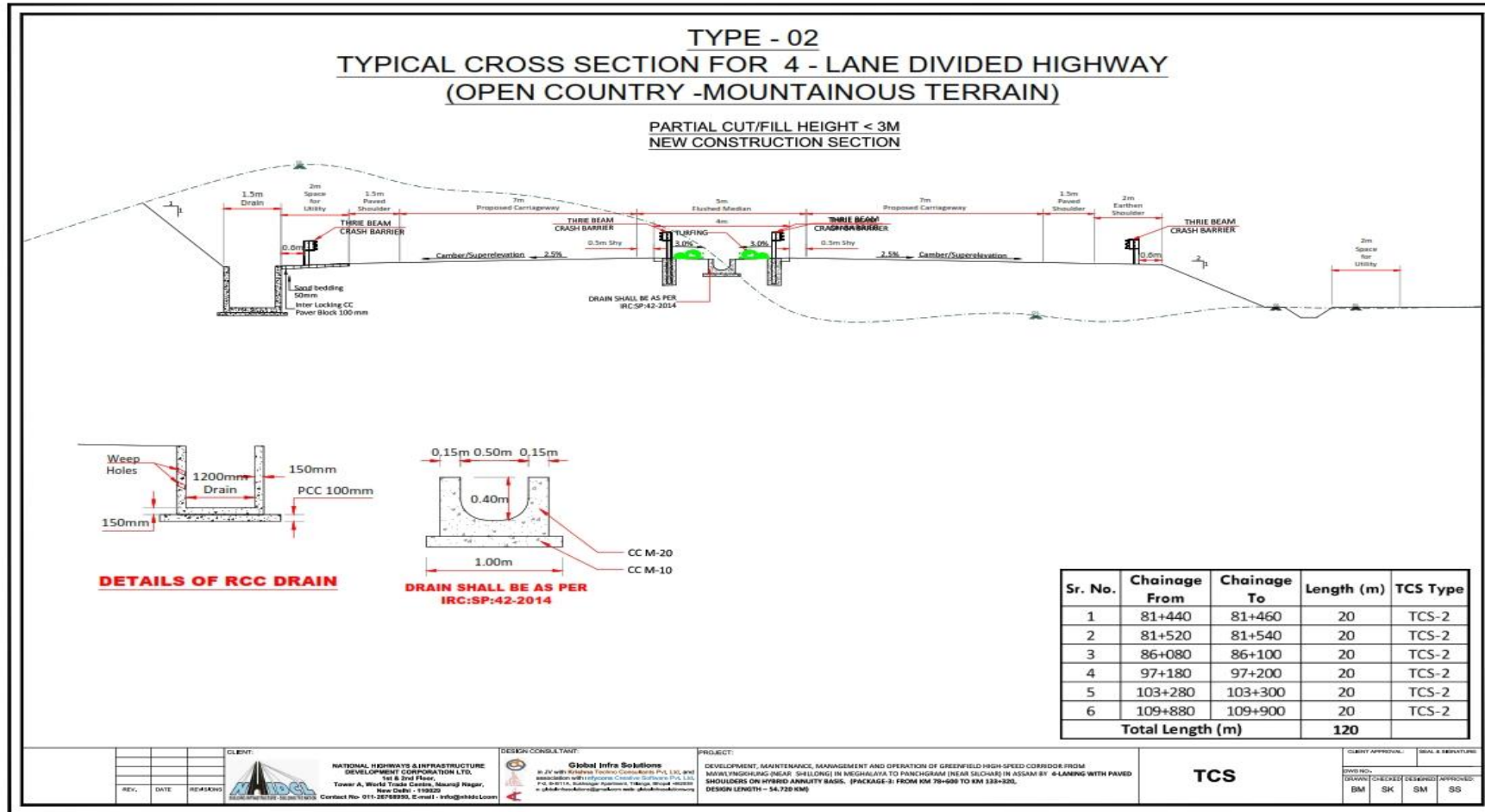
For Main Carriageway

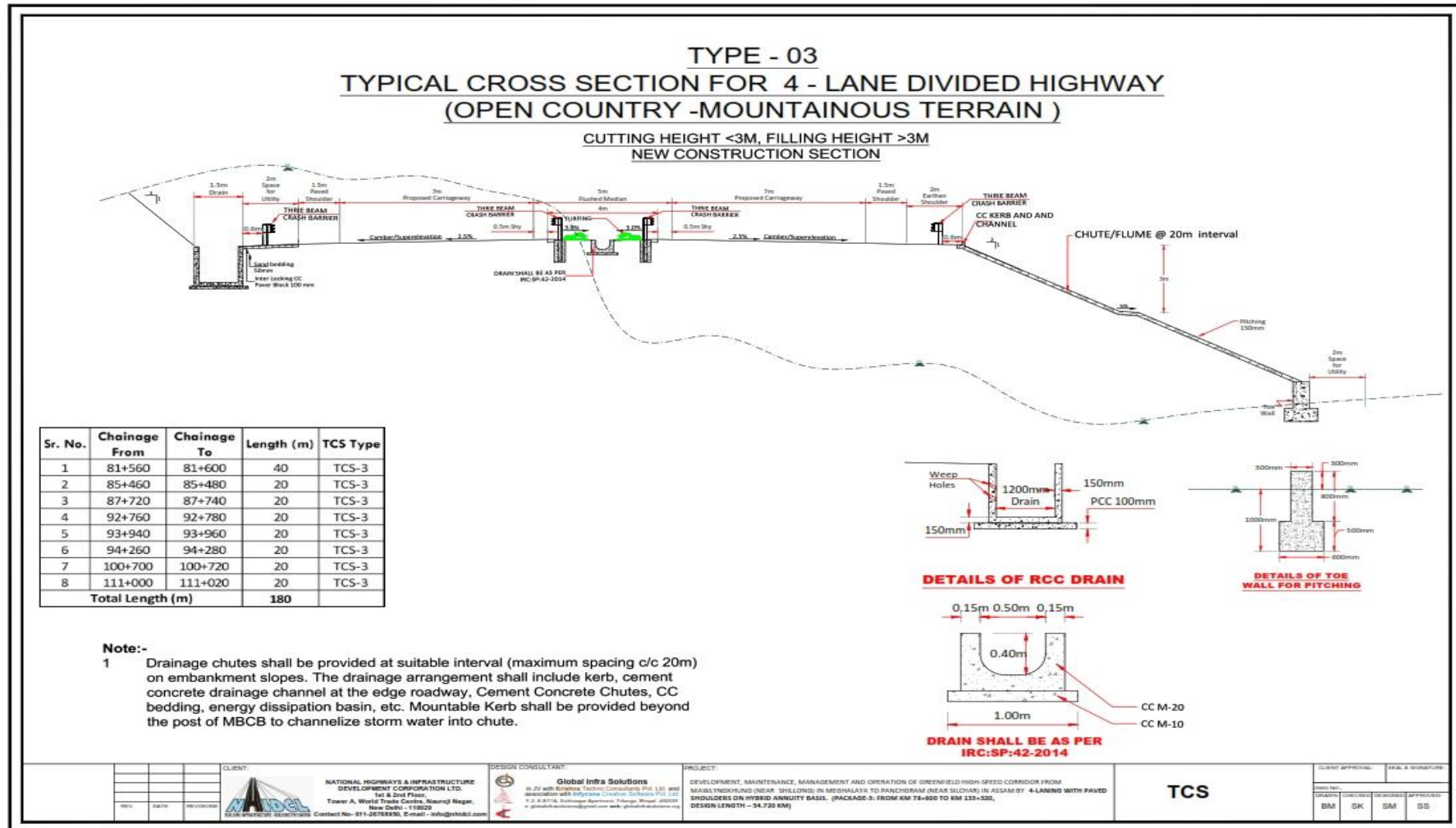
Sr. No.	Design Chainage (Km)	Construction Activity	Diversion	Traffic Management Plan	Barricading Type III/IV/CC Barrier with Lighting along barrier	Deployment of Flagman in Habitation/ Schools/ Hospital, etc.	Remarks
1	78+700	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
2	79+225	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	

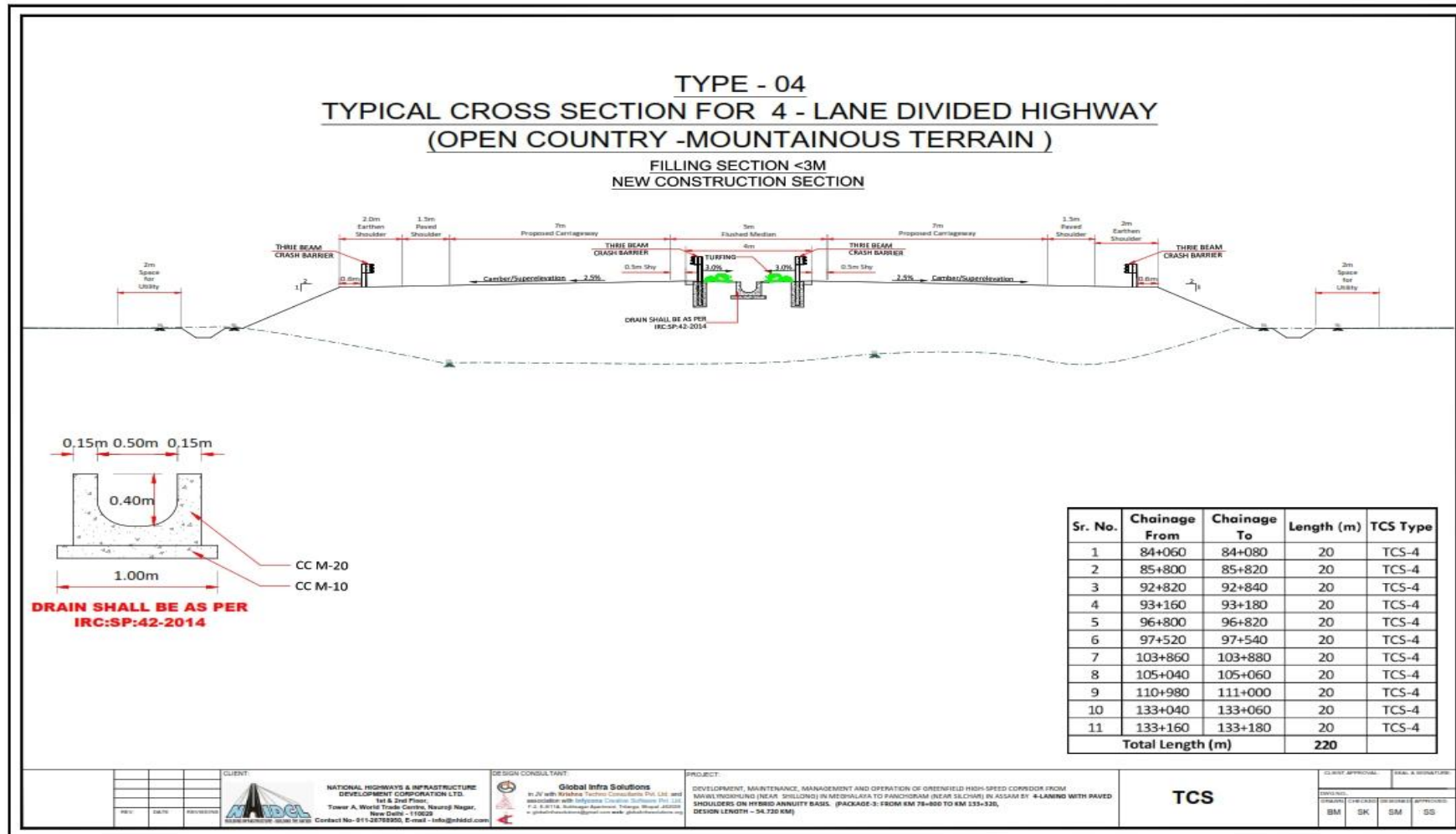
Sr. No.	Design Chainage (Km)	Construction Activity	Diversion	Traffic Management Plan	Barricading Type III/IV/CC Barrier with Lighting along barrier	Deployment of Flagman in Habitation/ Schools/ Hospital, etc.	Remarks
3	79+705	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
4	80+050	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
5	81+000	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
6	83+030	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
7	83+600	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
8	84+150	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
9	84+555	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
10	85+060	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
11	85+430	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
12	85+890	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
13	86+800	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
14	87+880	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
15	88+925	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
16	89+405	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
17	90+060	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
18	90+480	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
19	92+615	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
20	93+230	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
21	93+890	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
22	94+410	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
23	94+775	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
24	95+700	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
25	96+335	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
26	97+080	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
27	97+690	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
28	98+060	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	

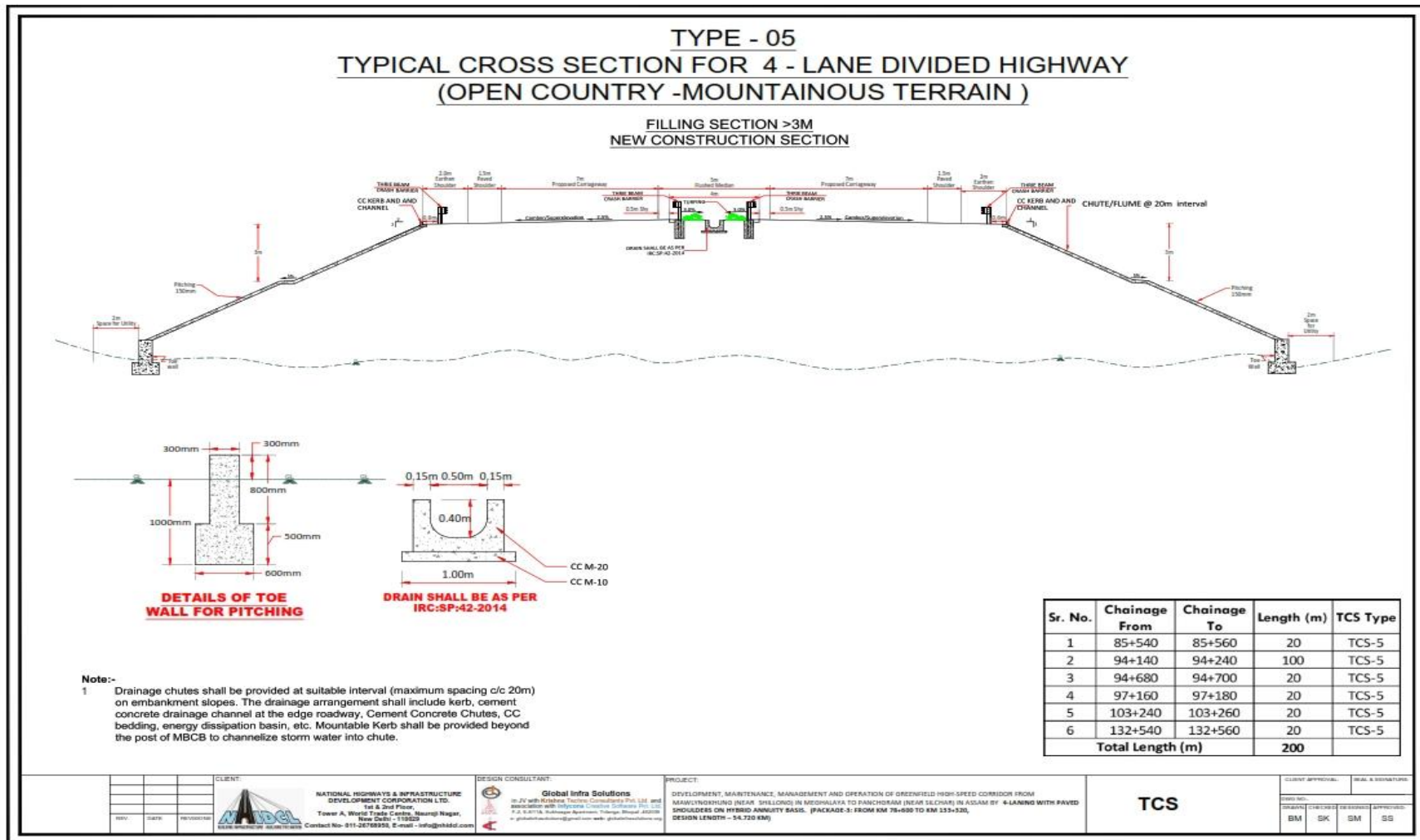
Sr. No.	Design Chainage (Km)	Construction Activity	Diversion	Traffic Management Plan	Barricading Type III/IV/CC Barrier with Lighting along barrier	Deployment of Flagman in Habitation/ Schools/ Hospital, etc.	Remarks
29	99+570	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
30	100+900	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
31	102+200	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
32	102+850	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
33	104+480	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
34	106+280	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
35	108+620	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
36	110+000	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
37	113+160	Overpass	Yes	As per IRC SP 55	Type-IV	Flagman	
38	118+428	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
39	128+680	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
40	130+720	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
41	132+420	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	

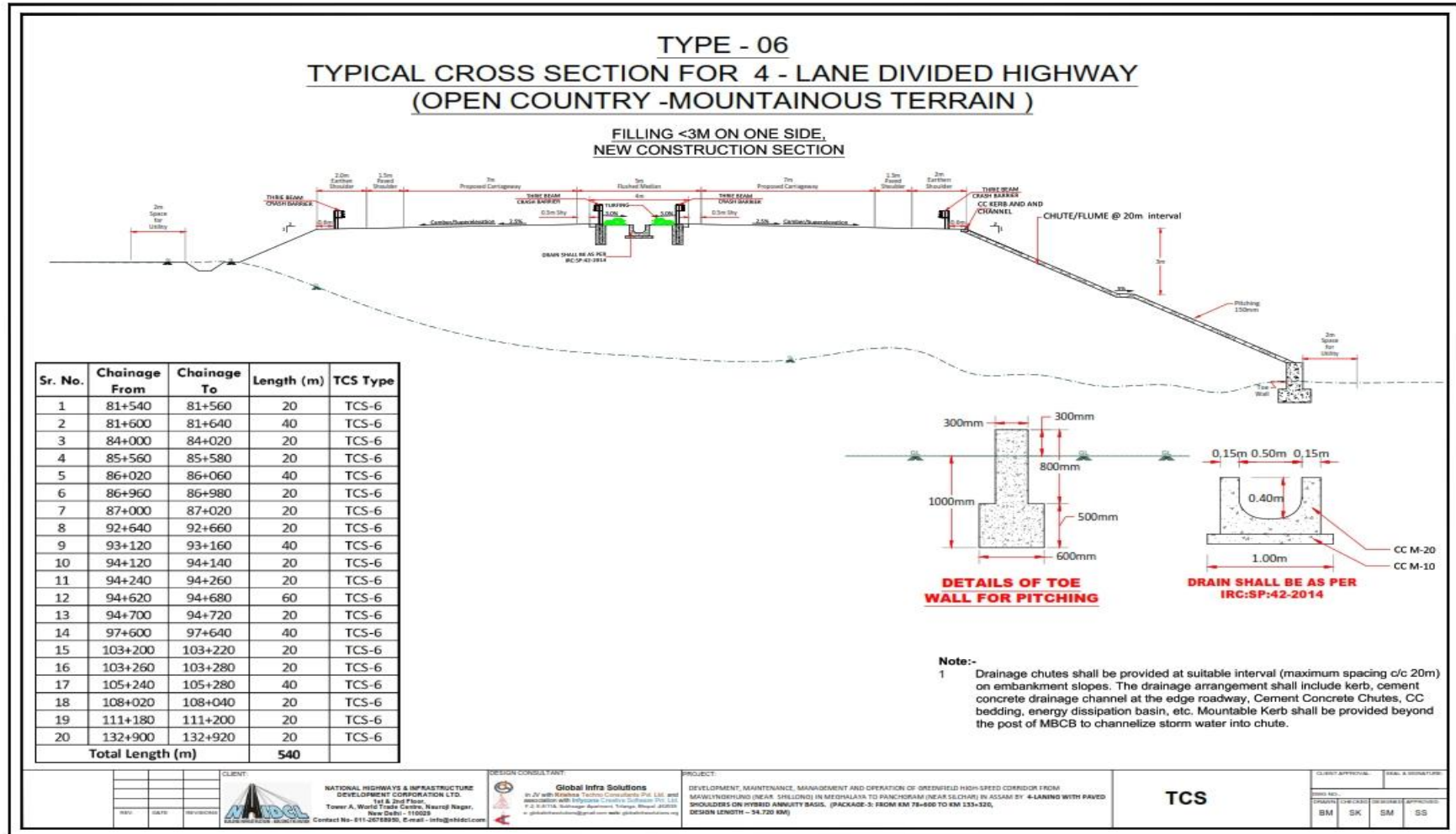
ANNEX – II (SCHEDULE – B) - TYPICAL CROSS SECTION

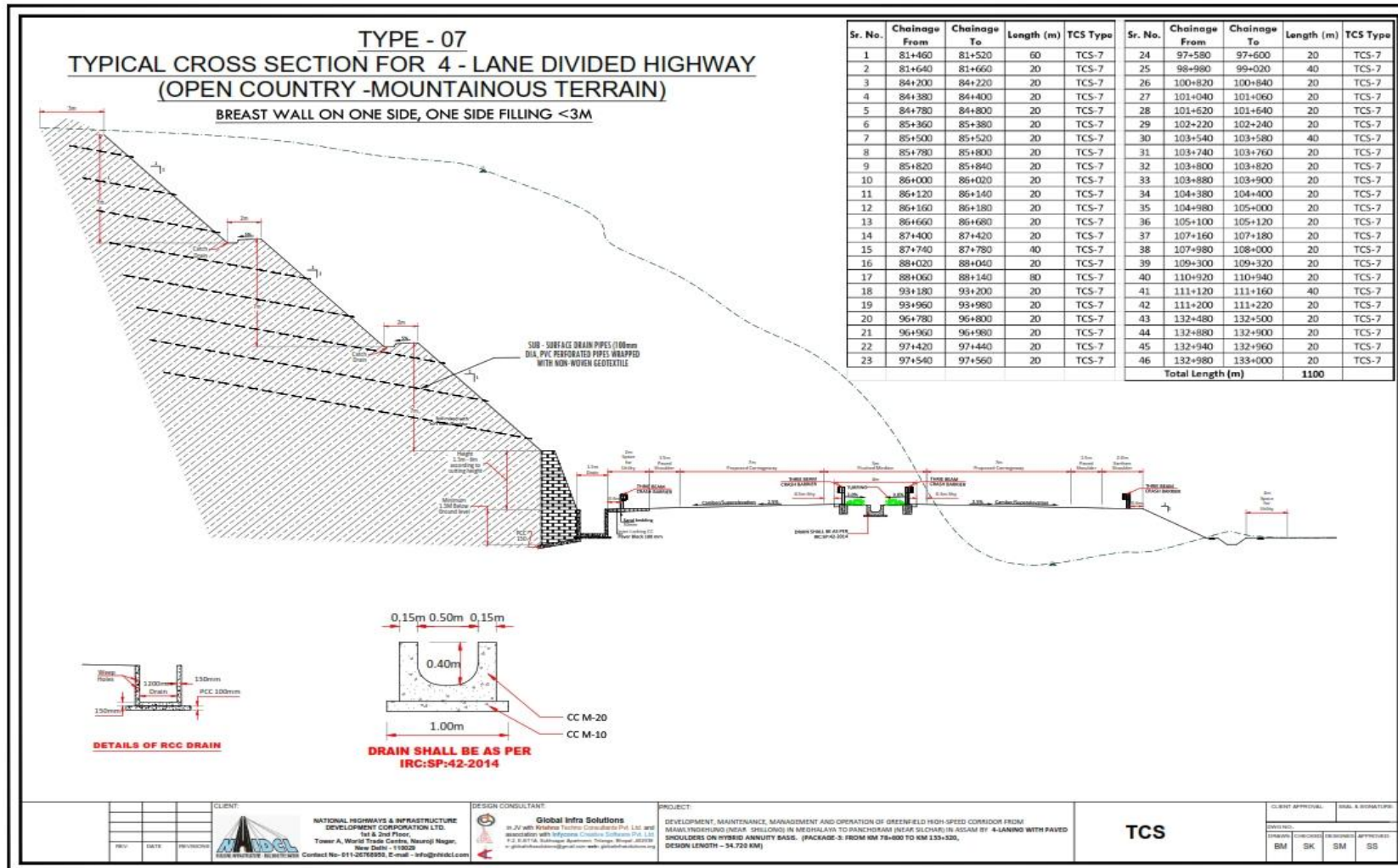


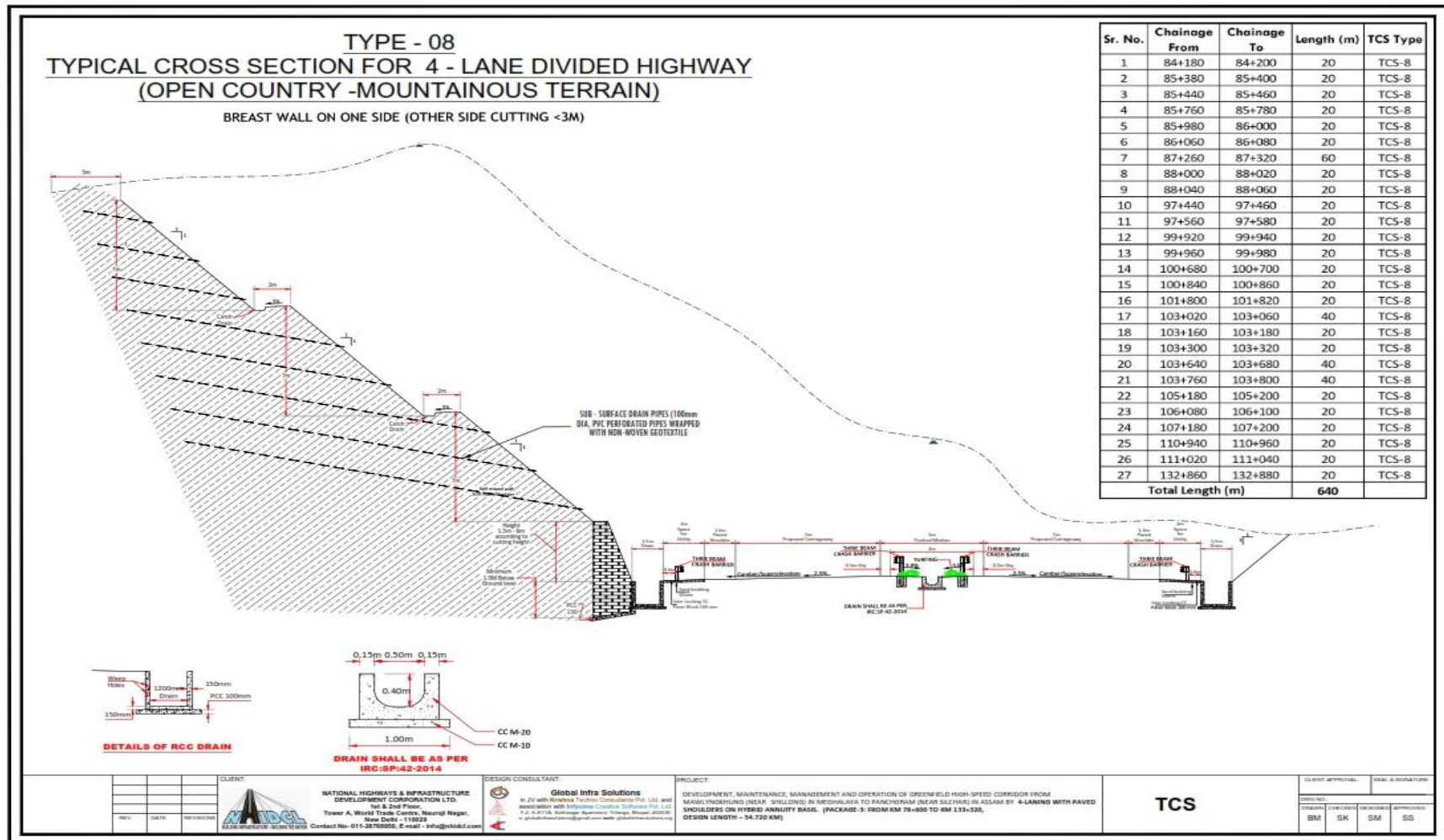


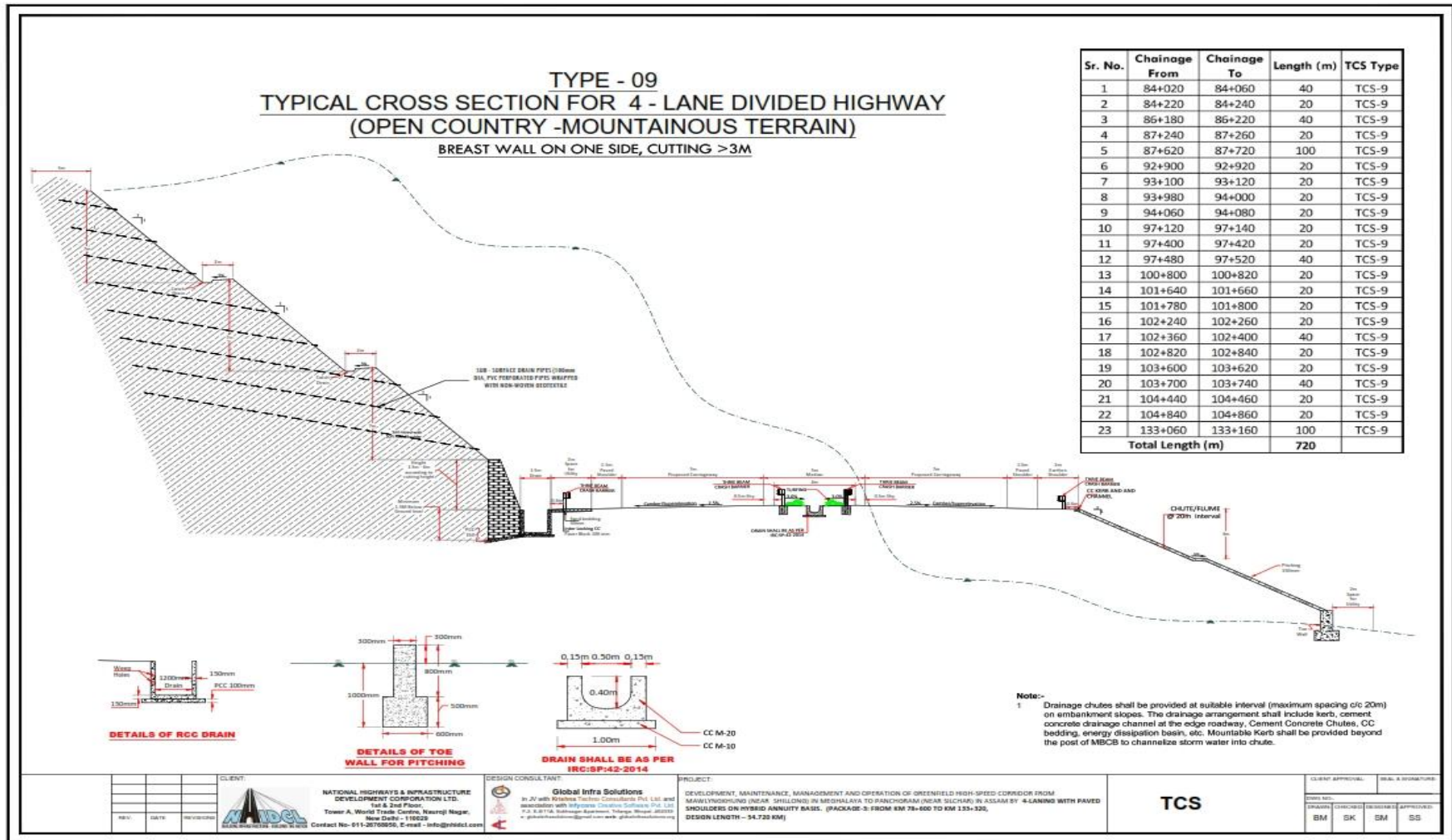


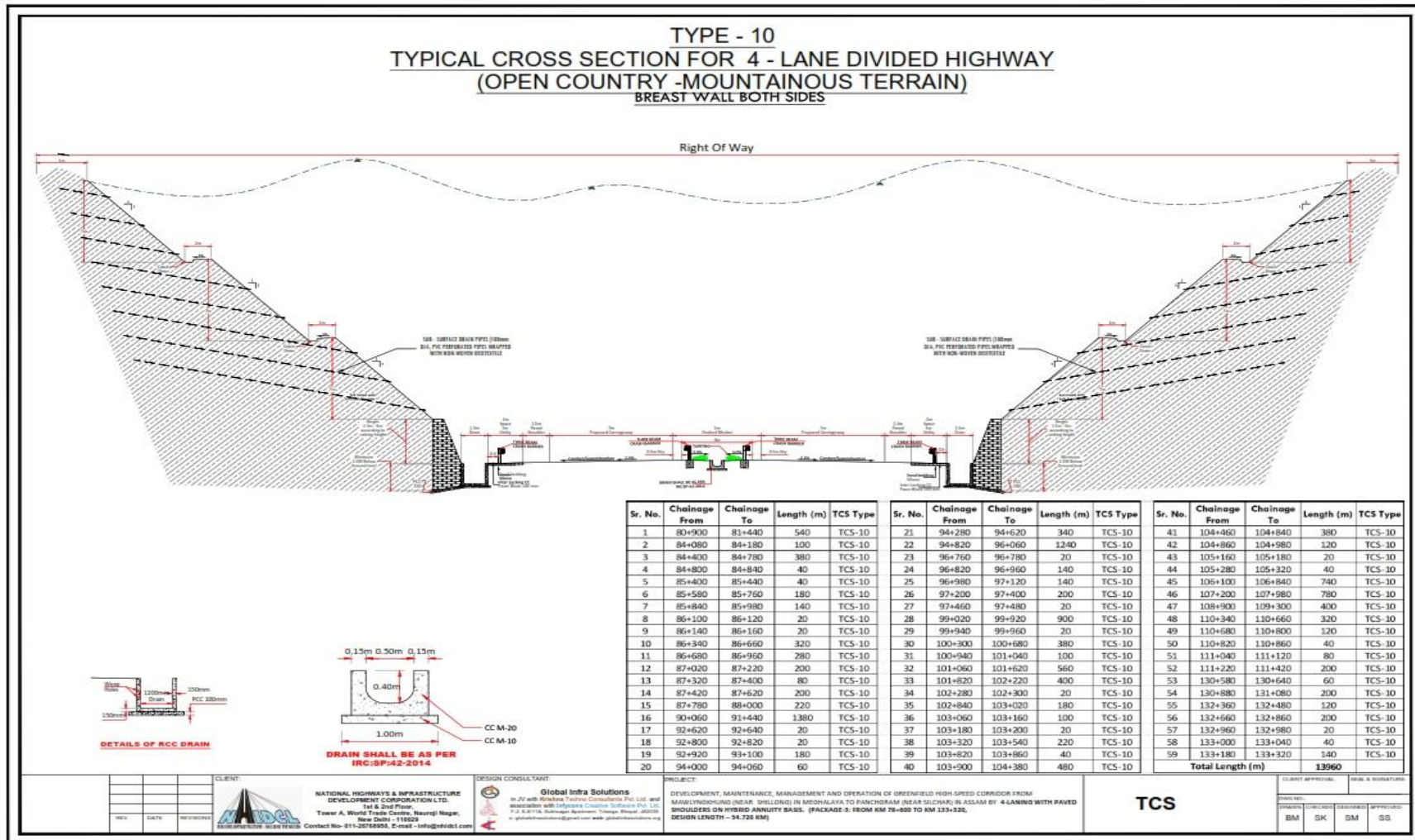


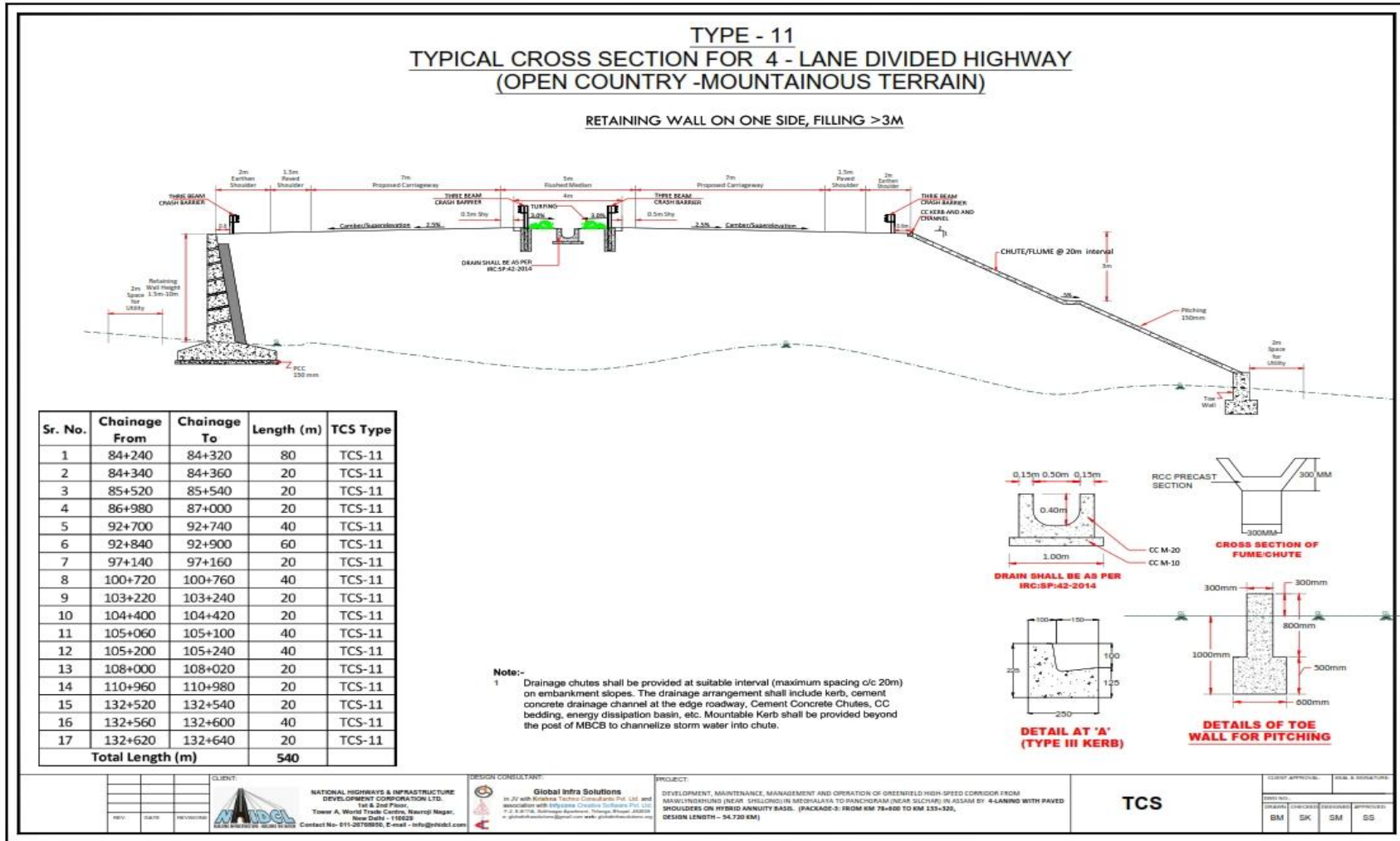


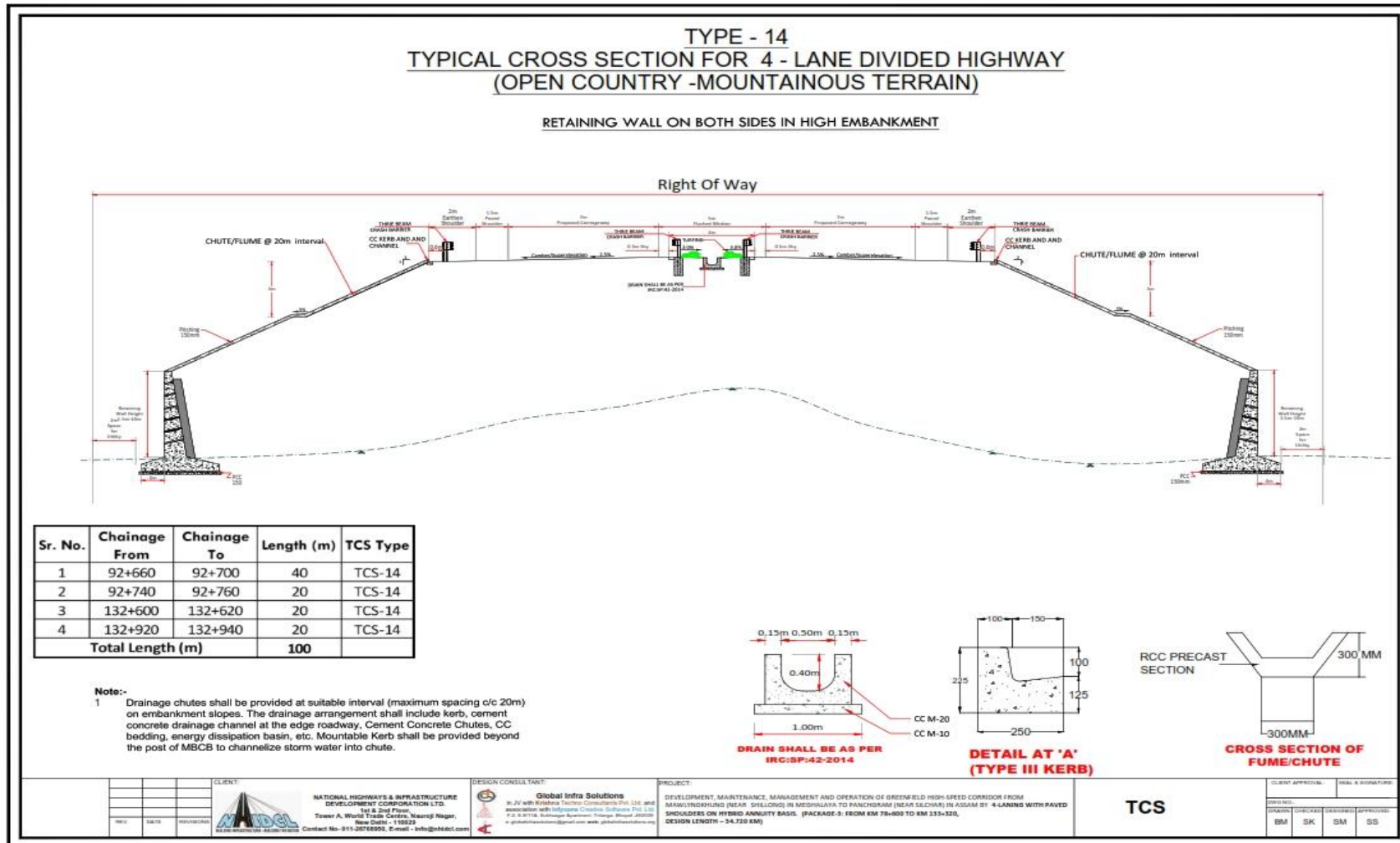


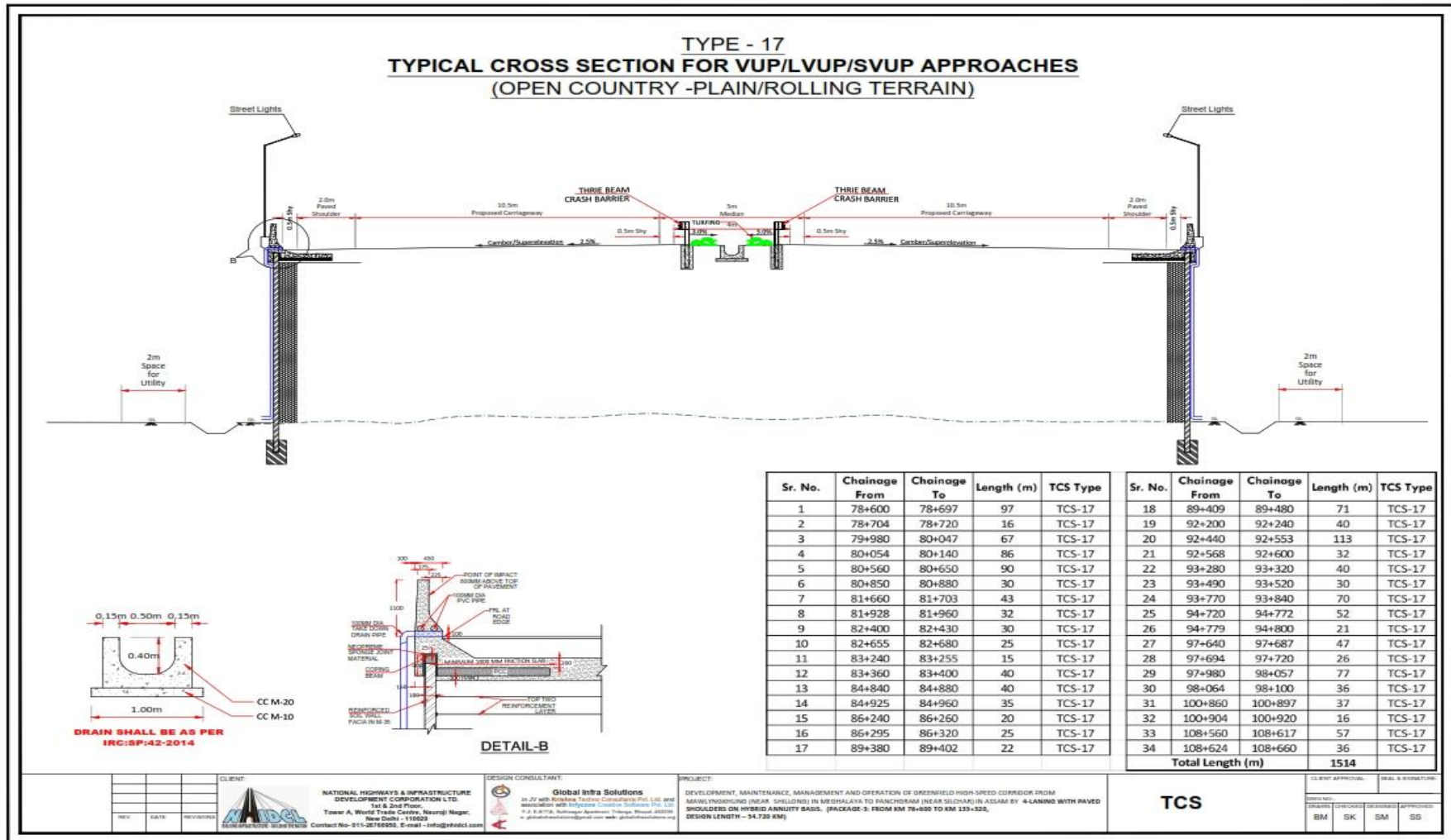


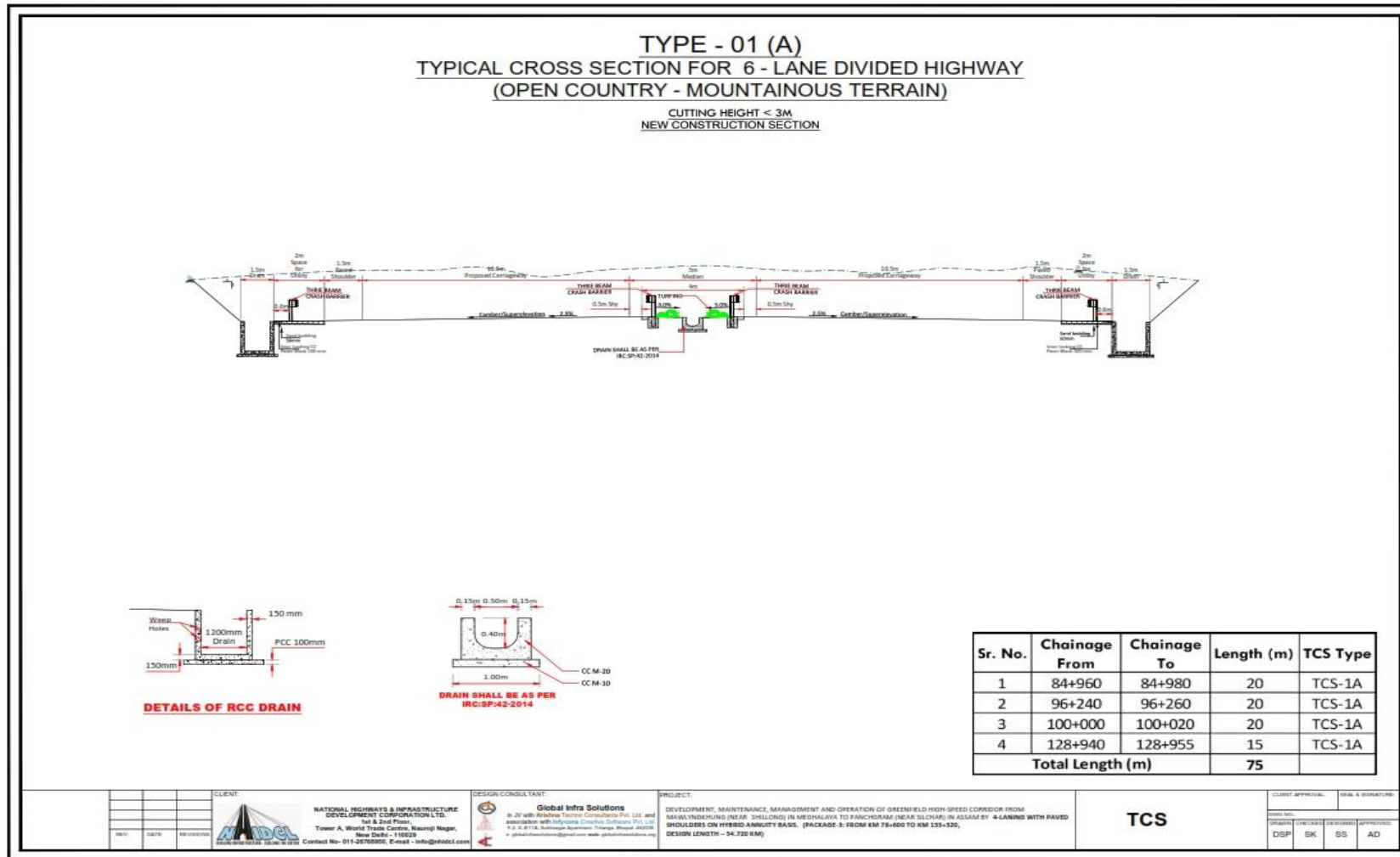


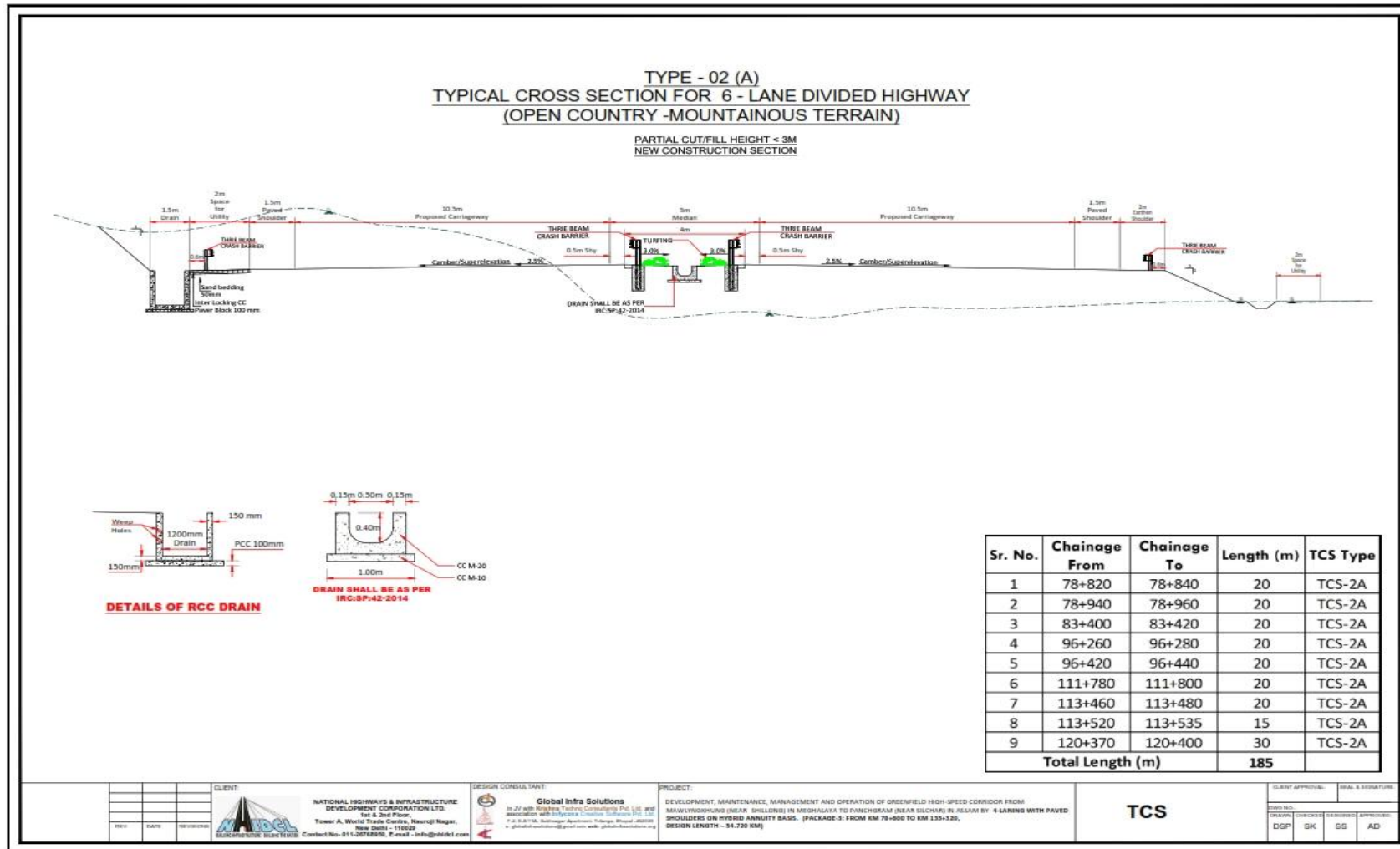


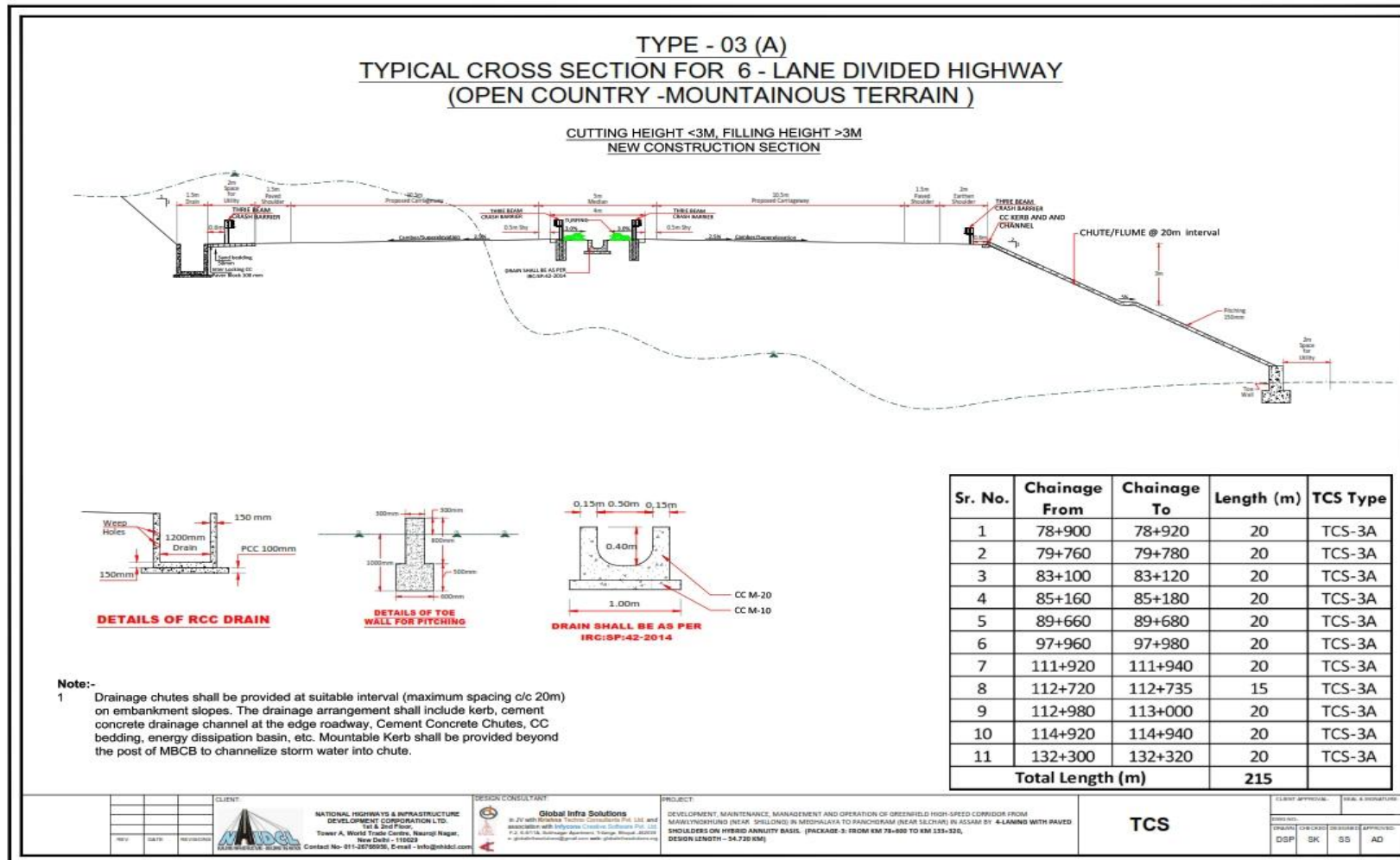


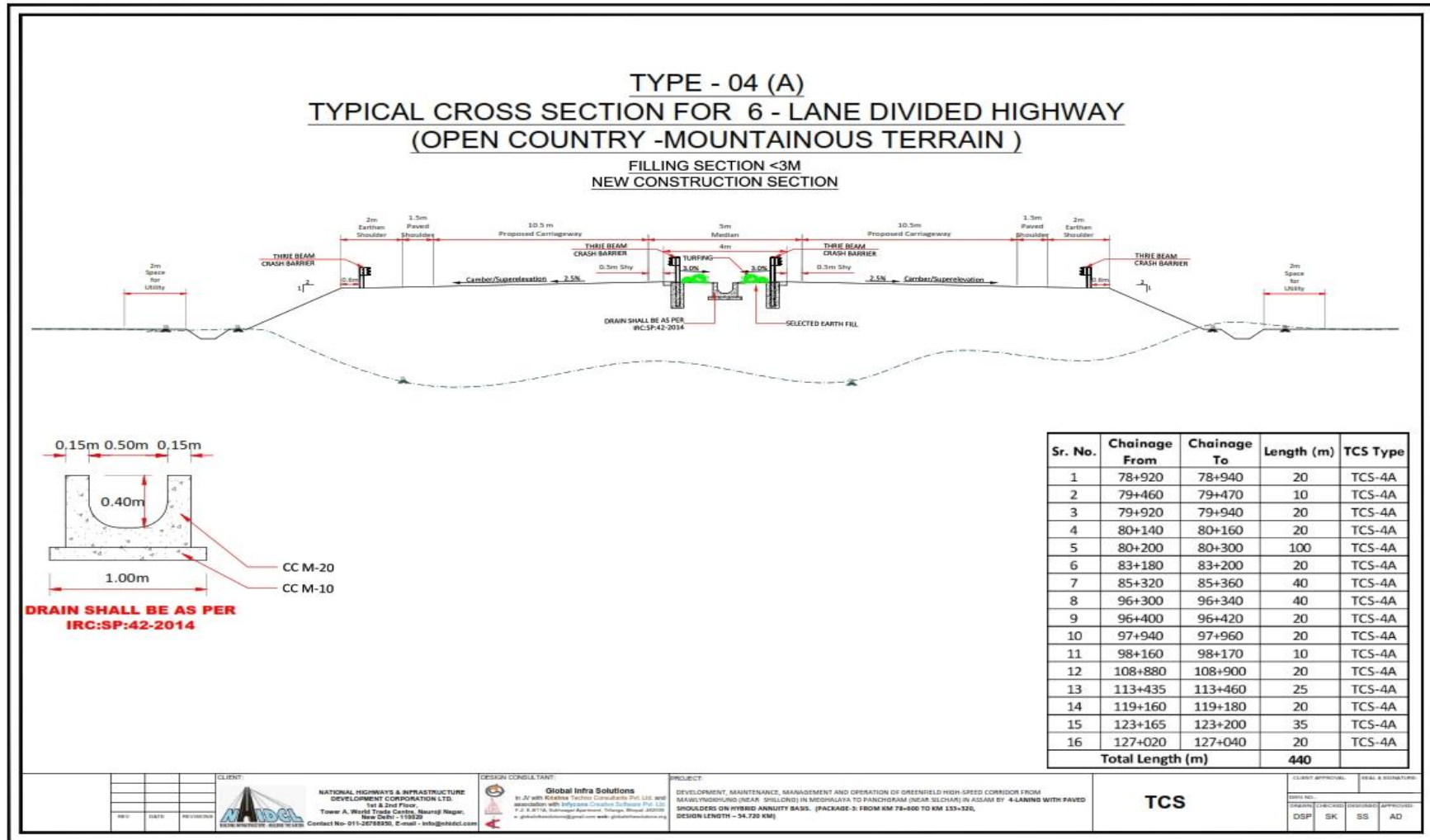


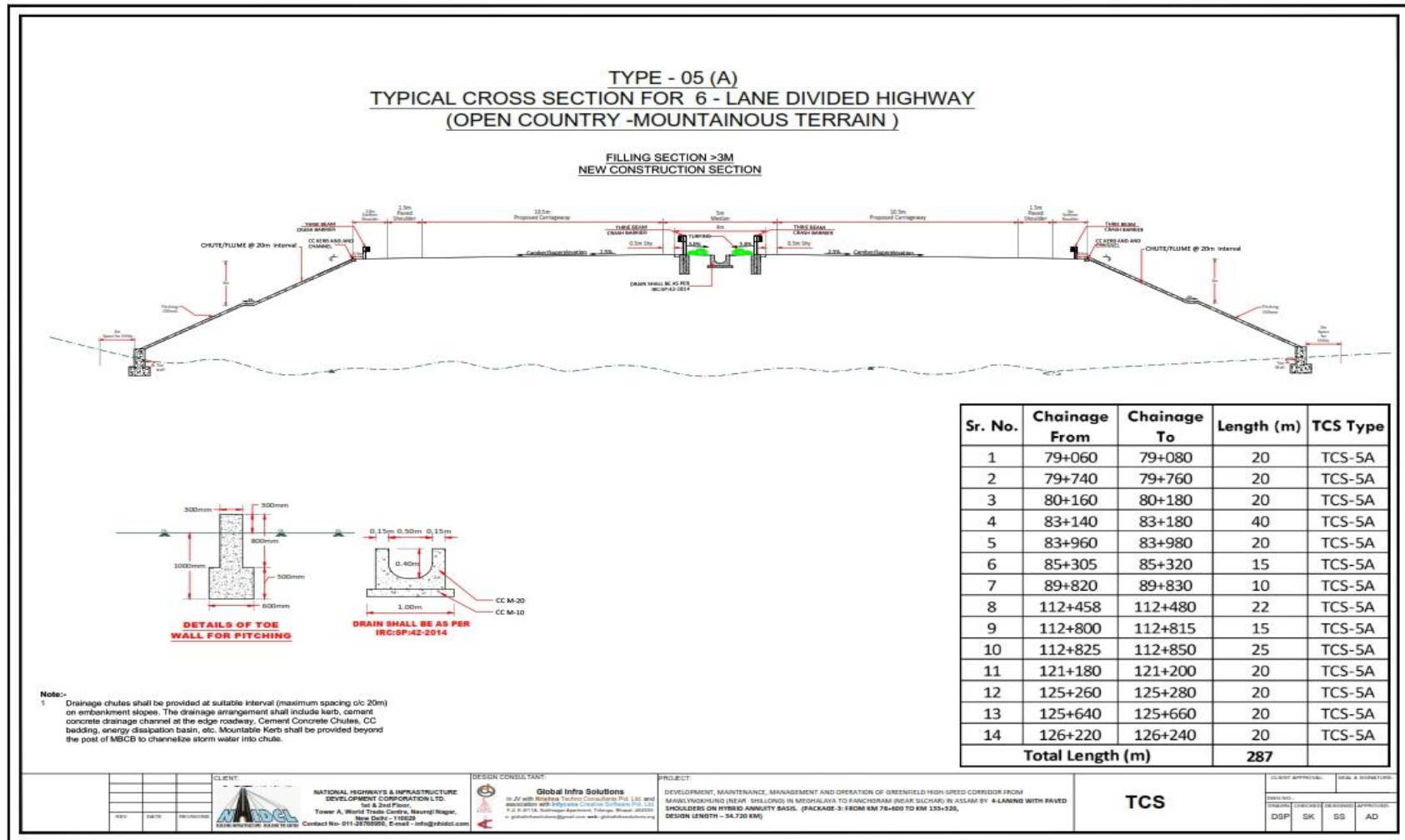


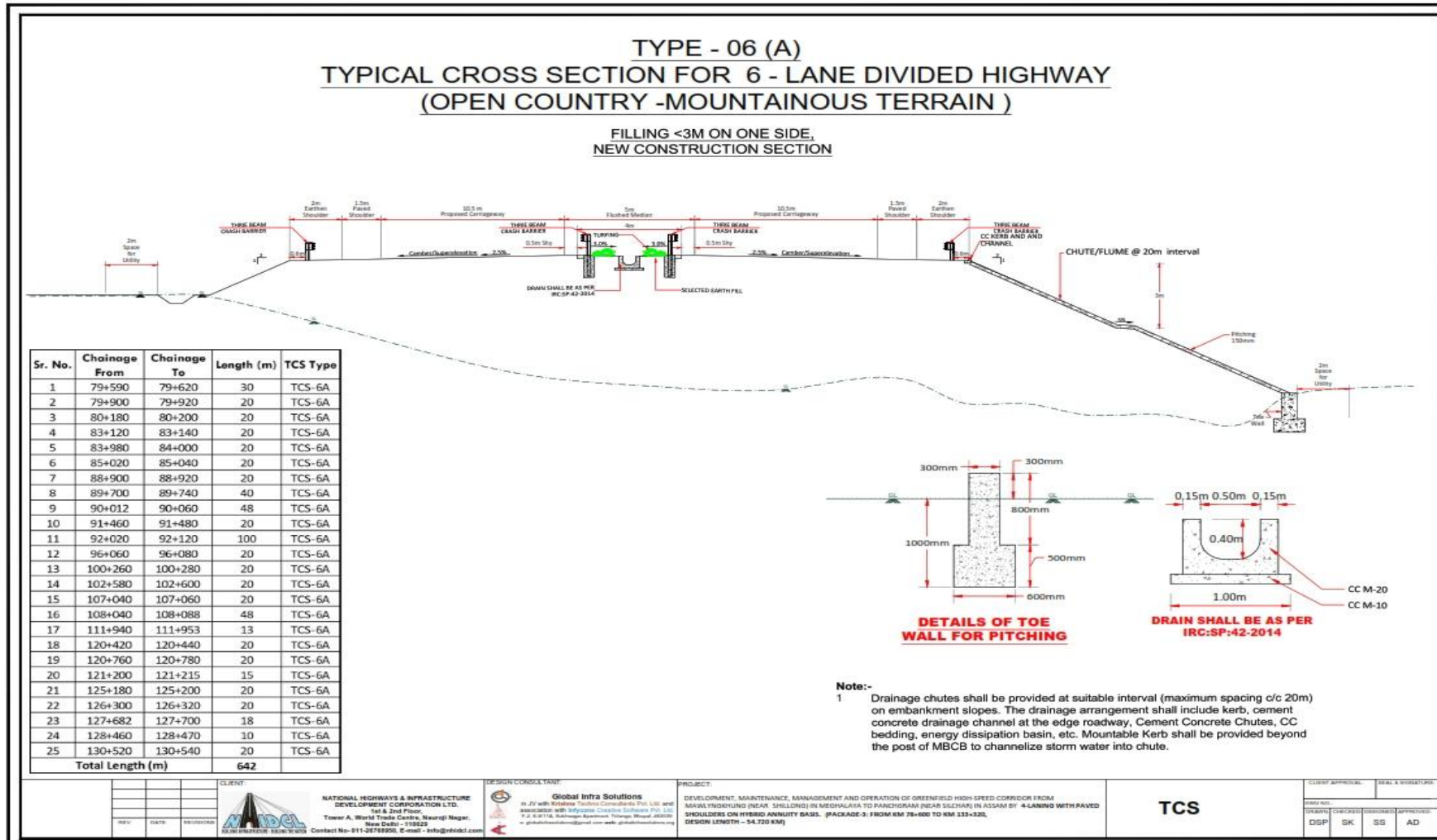


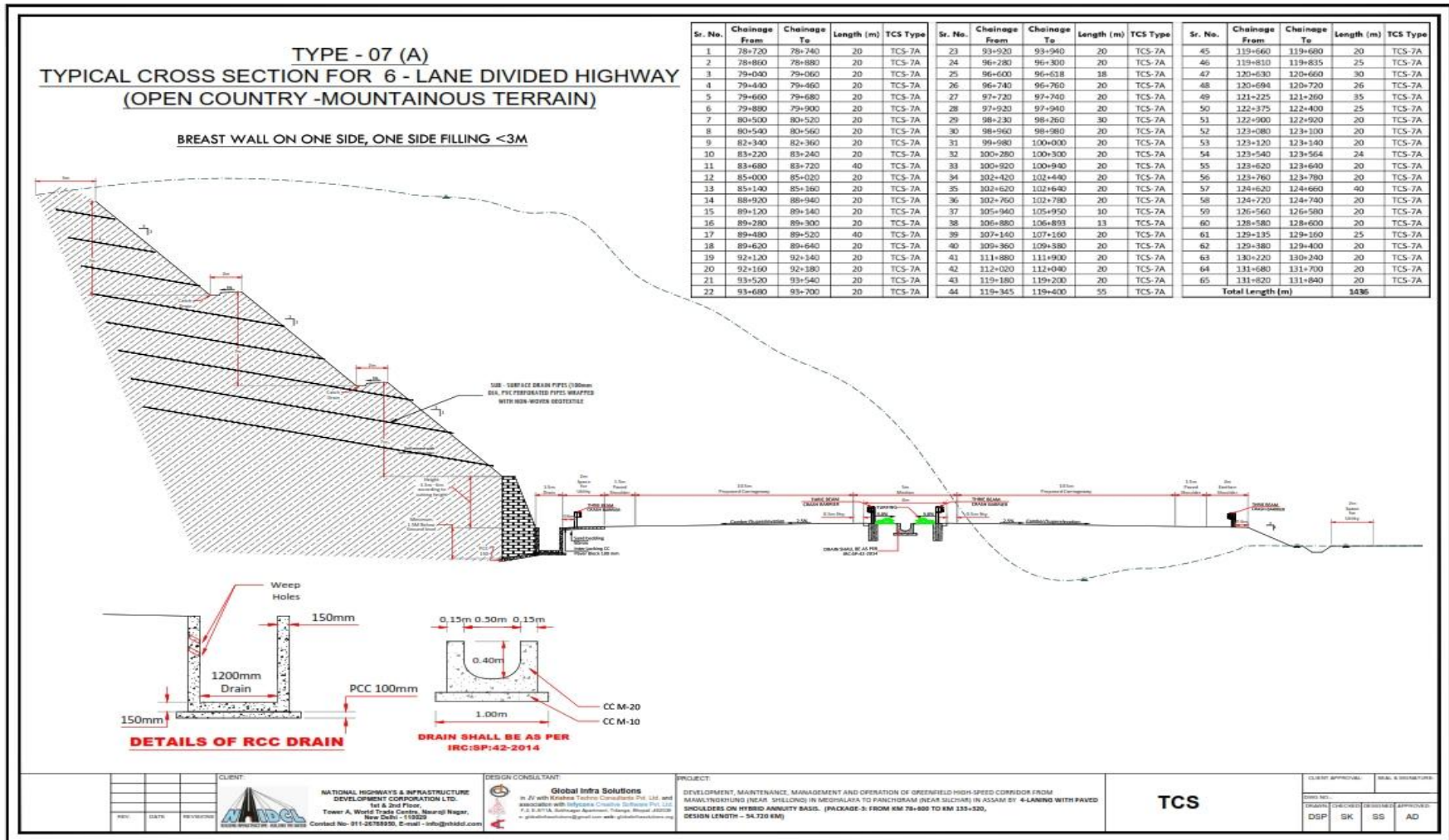


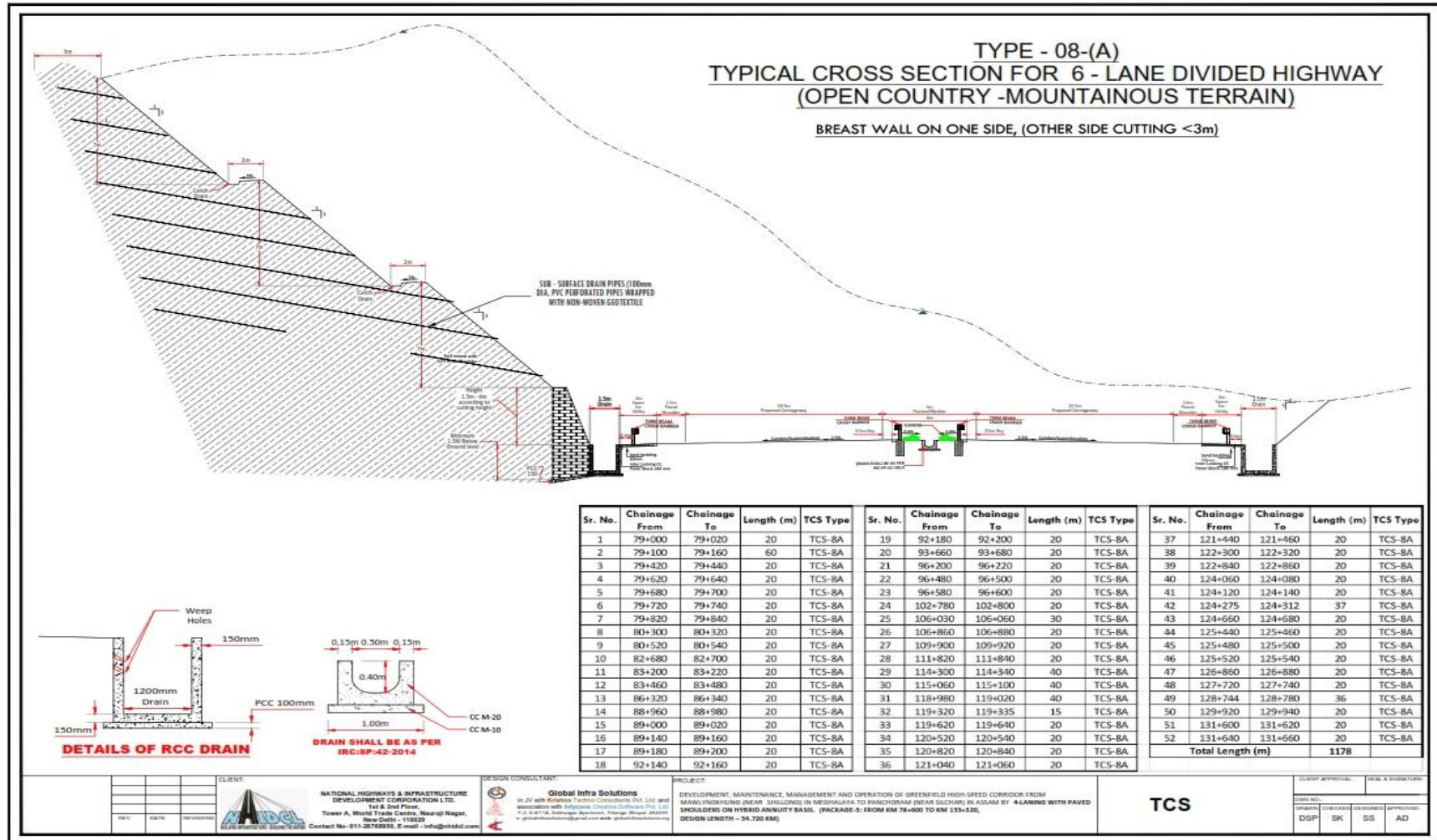


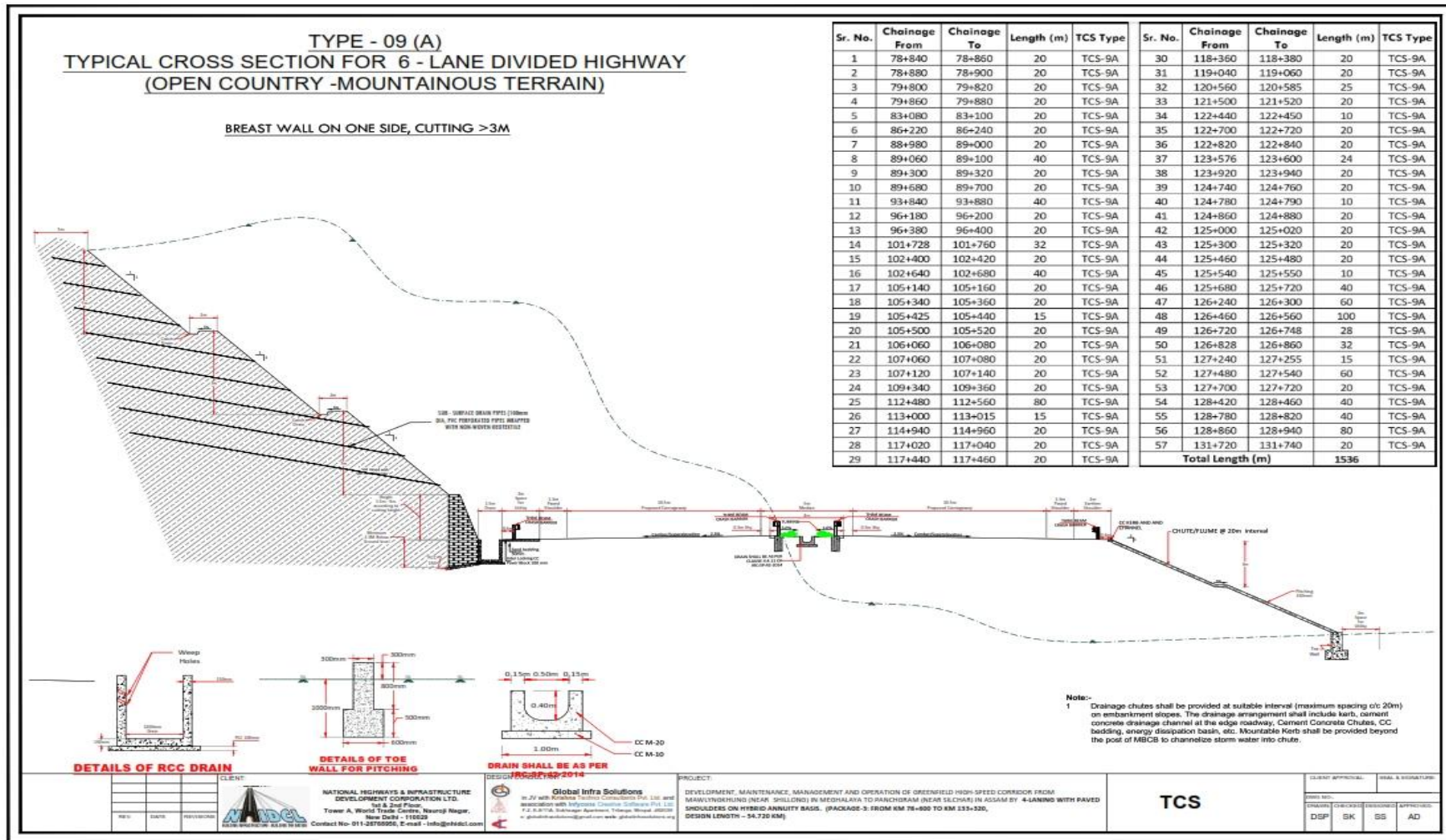


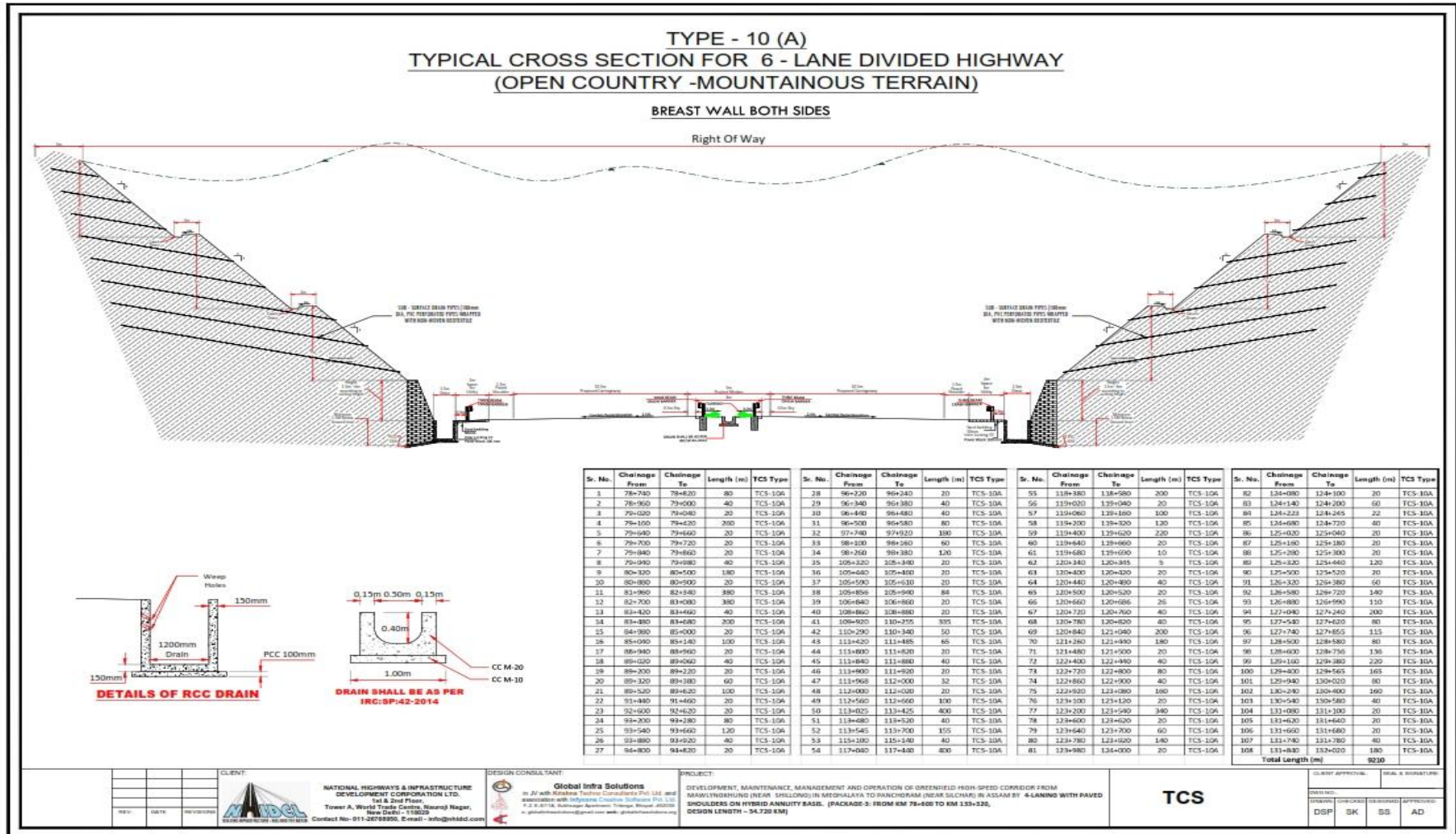


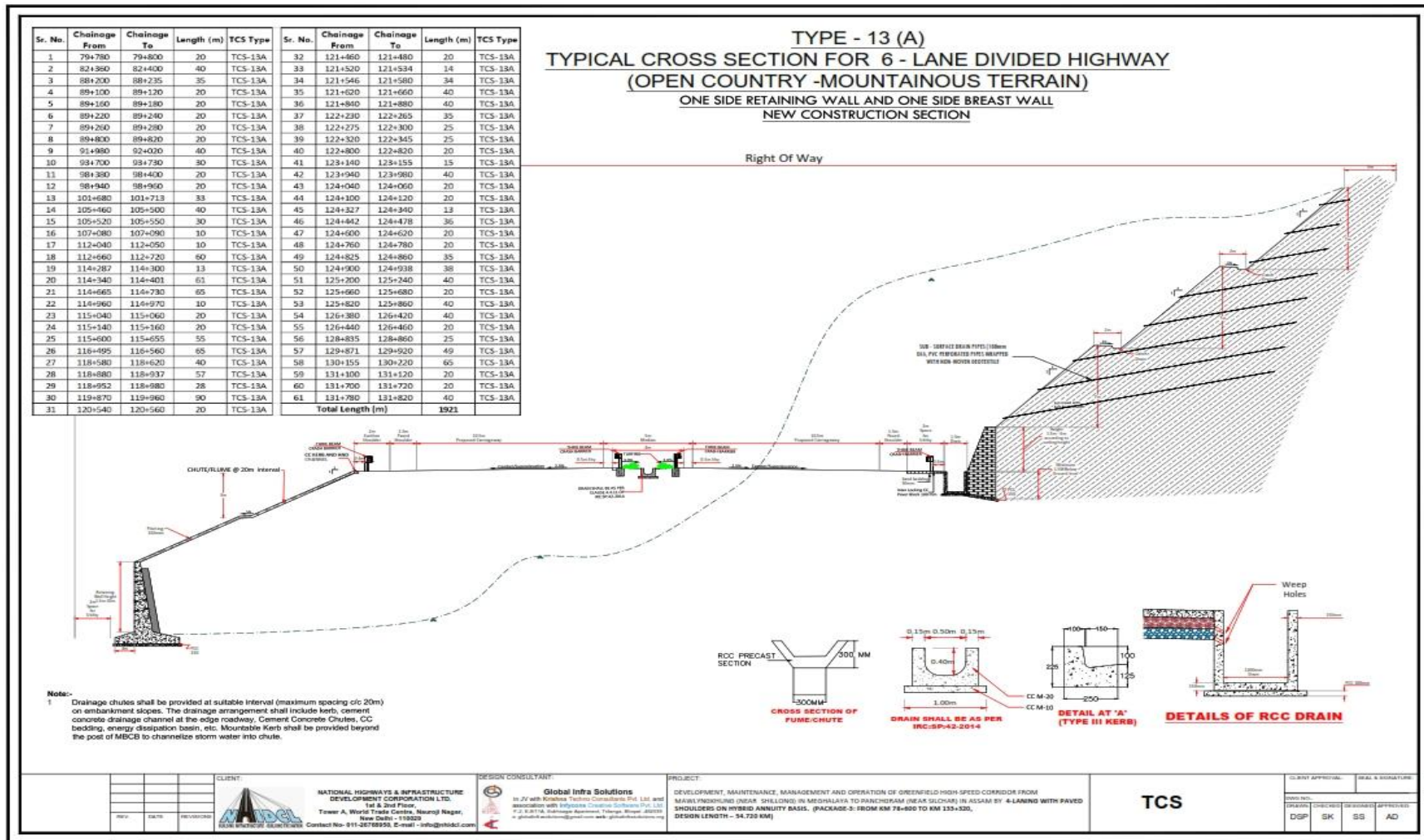


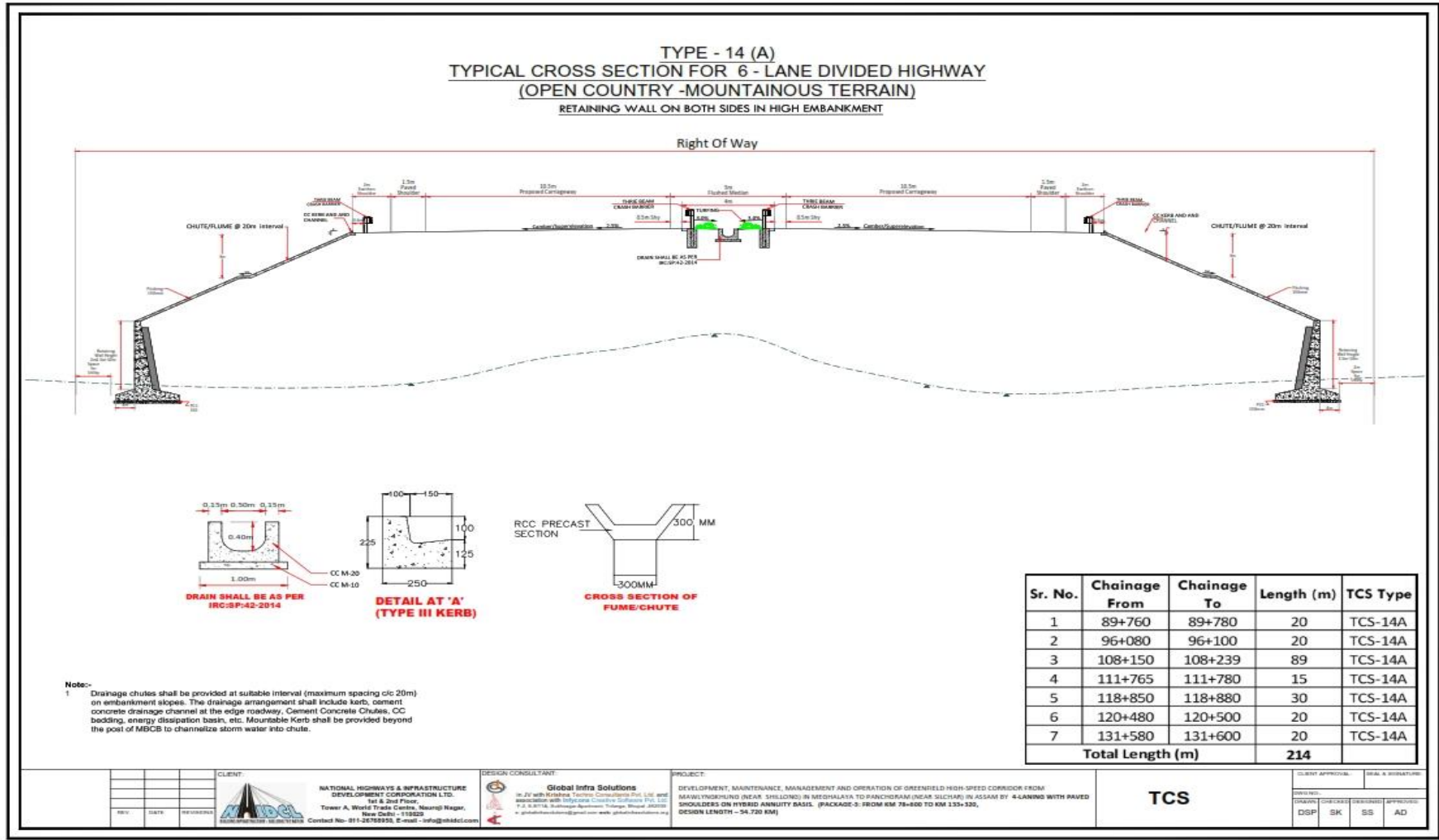


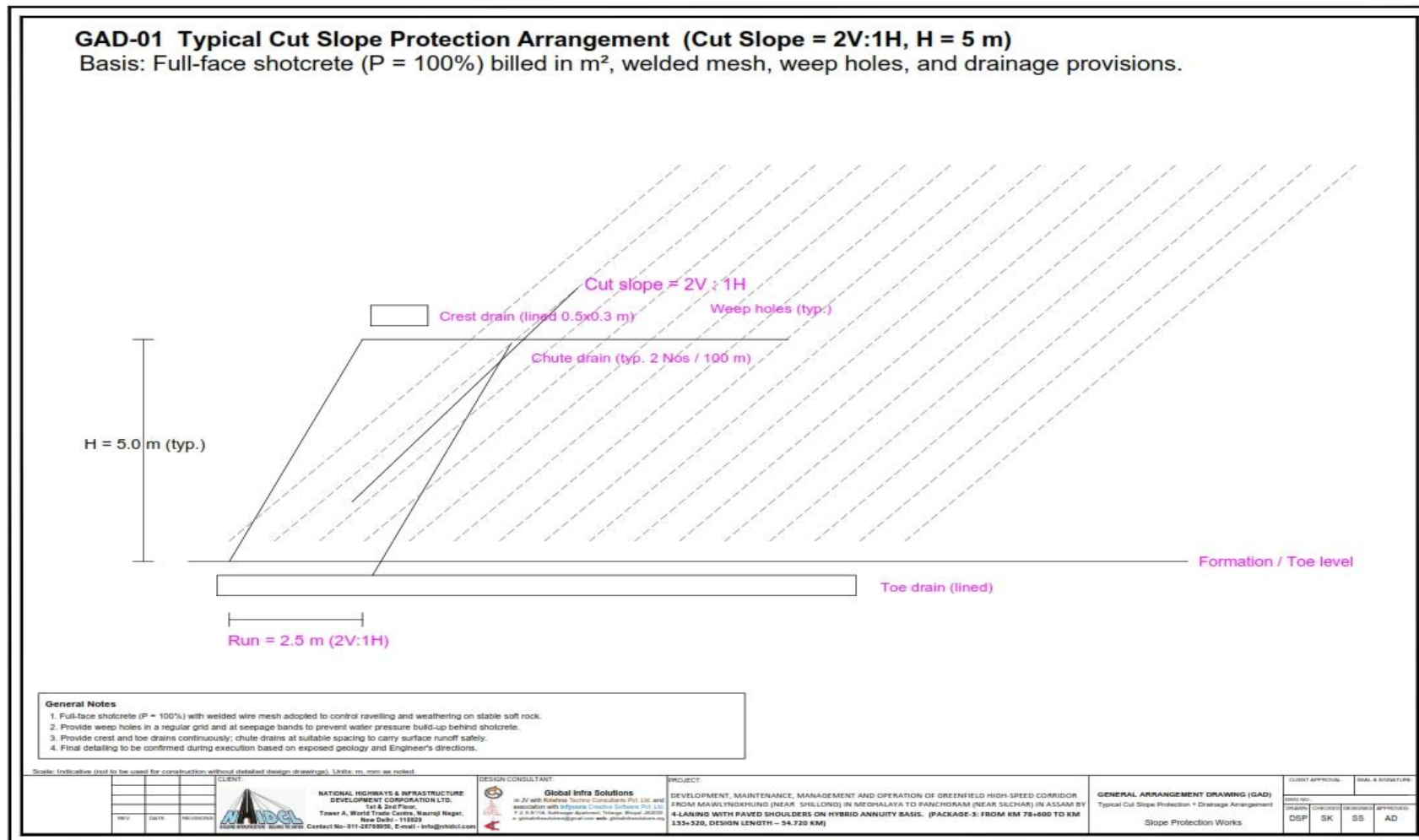


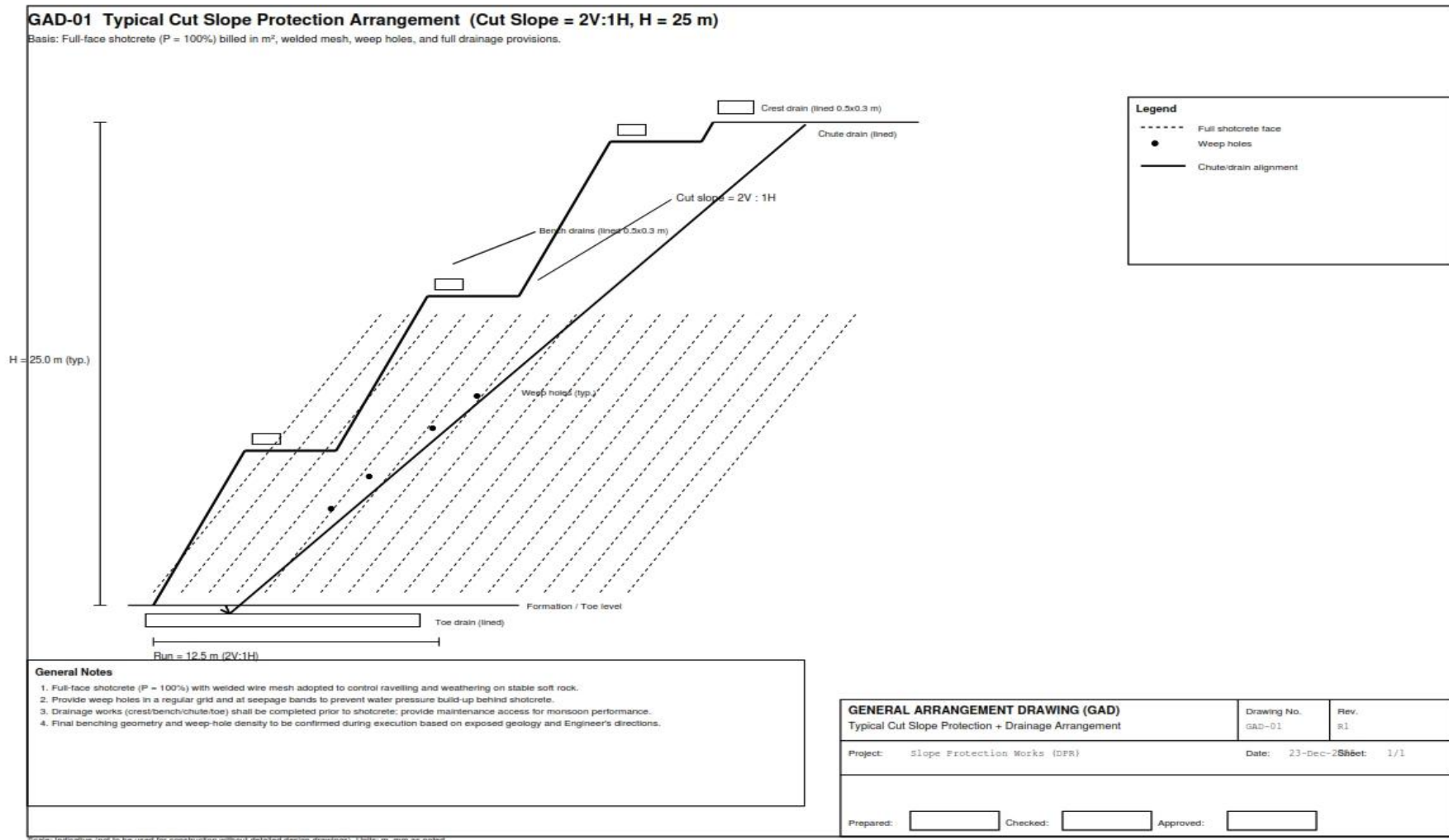


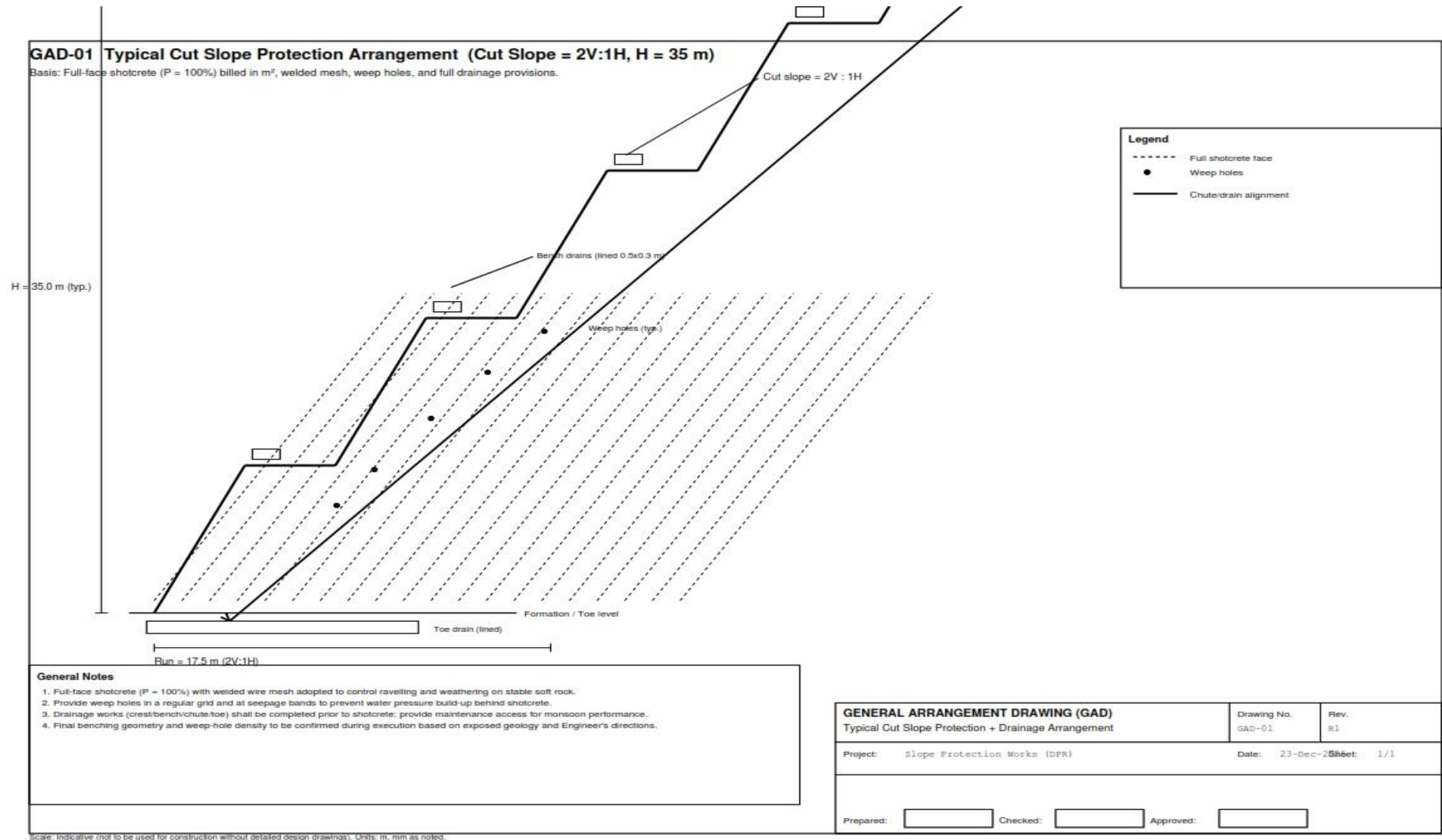


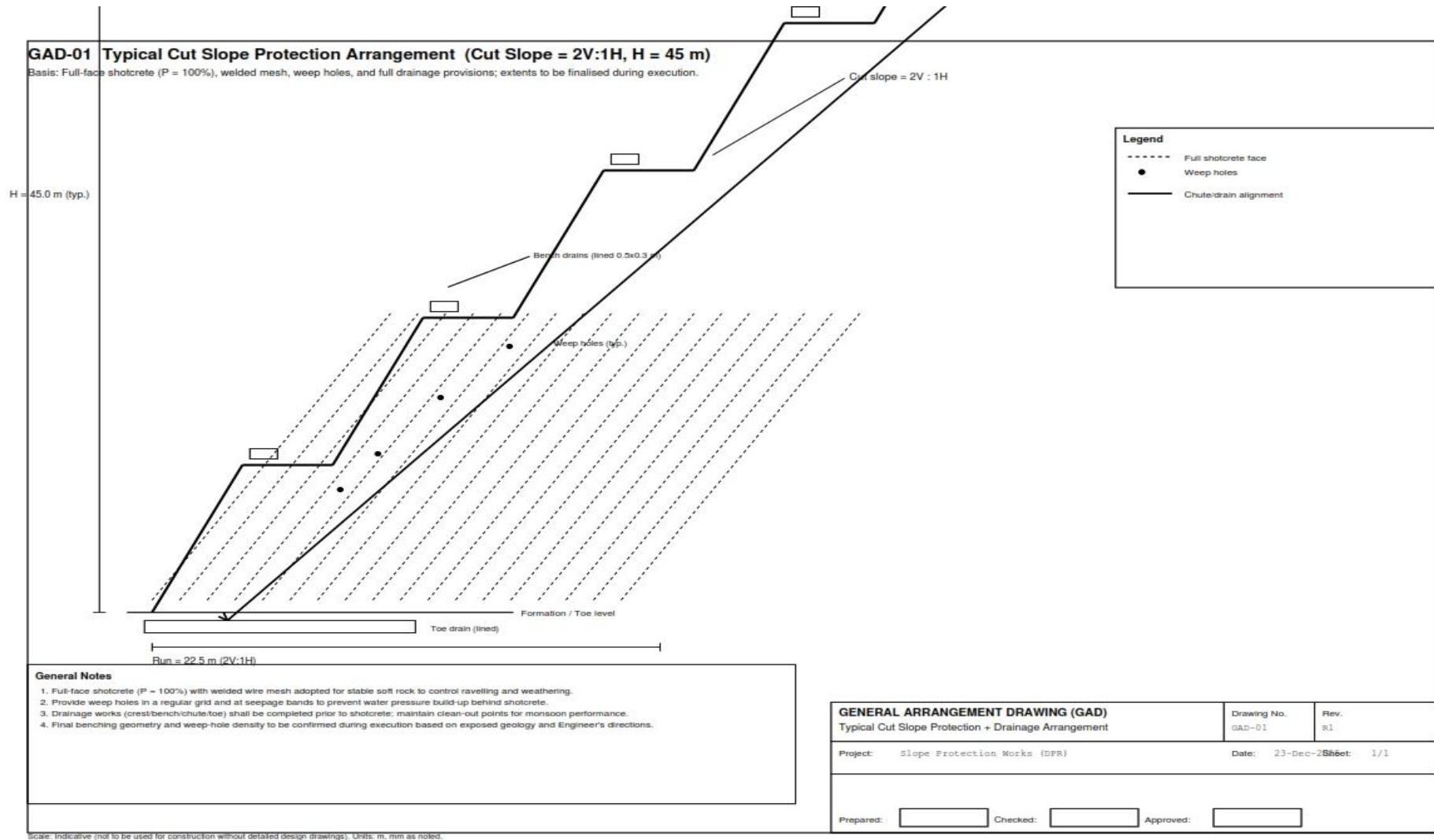


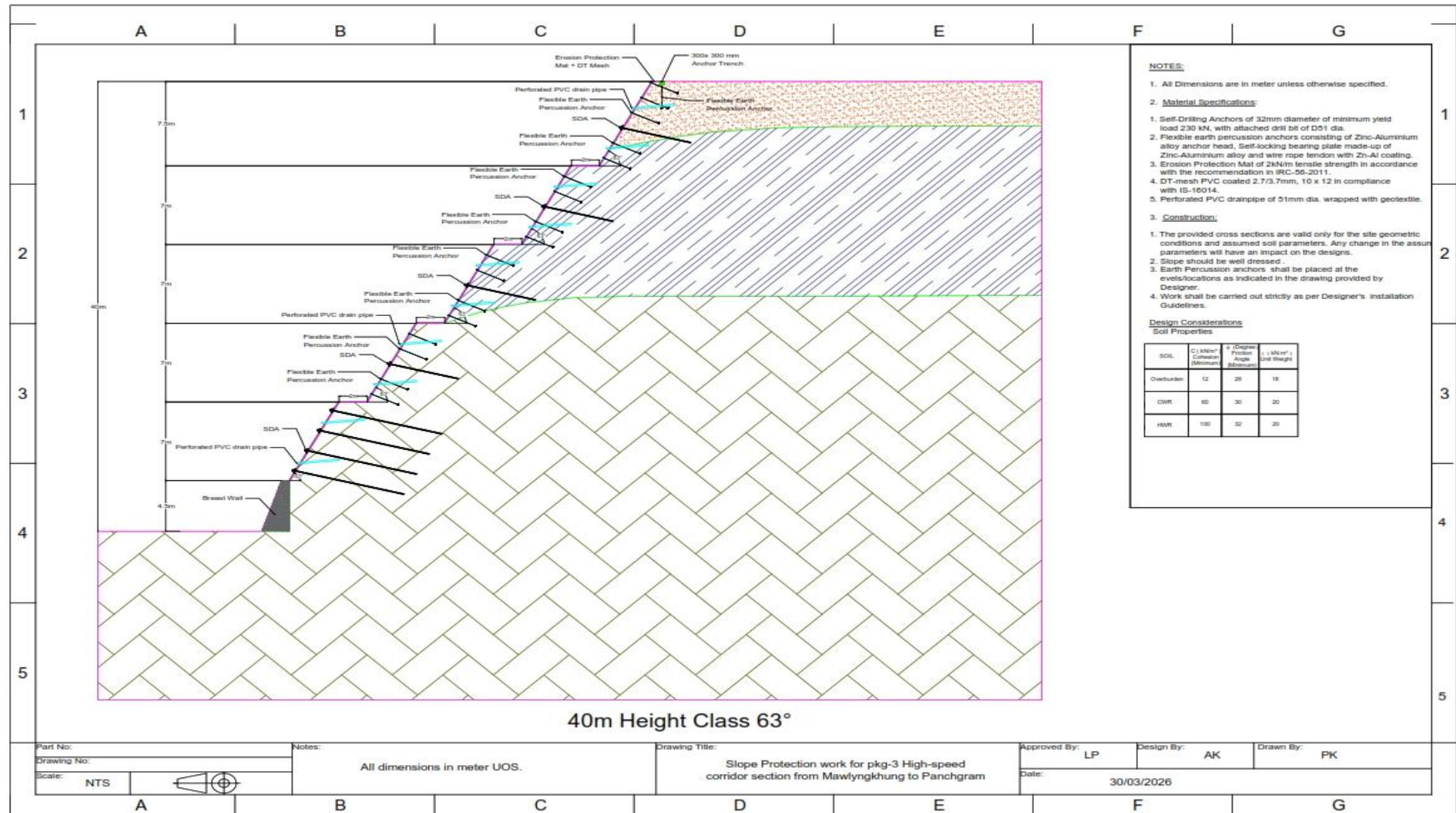












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SCHEDULE – C
(See Clause 2.1)

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.

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Page

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	
Nil						

Note:

- 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.
- 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
- 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.
- 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.
- 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.
- Point of Sale (POS) with card swapping machines shall be provided.
- 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 confirm to section 10.6 of IRC SP 99 i.e. Manual of Specifications and Standards for Expressways. (Clause No9.6, IRC: SP:84)

2. Roadside furniture

2.1. Kilometre and Hectometre Stones

S. No.	Item	Number	Remarks
1	Kilometer Marker/ Stones (including 5th Kilometer stone)	110 Nos. (For MCW)	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	438 Nos. (For MCW)	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 Kmph).

The overhead gantry/Cantilever signs shall be placed as given below: (**Clause No. 16.3.2 of IRC 67 2022**)

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)	Both Side
3	Overhead Gantry signs (Vehicle Type) 2 nos. for each direction	Both Side
4	Cantilever Gantry signs	
a	Advance Direction Sign 2Km Before Exit	Nil
b	Advance Direction Sign 1Km Before Exit	Nil
c	Advance Direction Sign 500m Before Exit	Nil
5	Cantilever Gantry signs at Fee Plaza	Nil

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/ Authority, as per site requirement.

S. No.	Road Signs	Number	Remarks
I	Mandatory/Regulatory		
1	Stop signs	102	At all cross roads below/above underpasses and overpasses
2	Give Way Signs	102	At all cross roads below/above underpasses and overpasses
3	Prohibitory signs		At all entry Ramps for Two-Wheeler prohibited/Cycle prohibited
4	No Parking signs		
5	No Stopping signs		

S. No.	Road Signs	Number	Remarks
6	Speed Limit signs (Circular)	102	At all cross roads below/above underpasses and overpasses
7	Speed Limit signs (Vehicle Type)	22	At every 5Km interval for MCW
8	Vehicle Control signs		
9	Restriction Ends sign		
10	Compulsory Direction Control and other signs		
II	Cautionary/Warning		
1	Left/Right Curve	248	Approach of curve where reduction of speed due to change in direction and radius of curvature is below specified limit
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	102	Approach of intersection/ side roads below/above underpasses and overpasses
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		at entry ramps where the traffic from other road is merging and the drivers are required to slow down their vehicle for safe travel.

S. No.	Road Signs	Number	Remarks
15	Narrow Road Ahead		
16	Road Widens		
17	Narrow Bridge Ahead		
18	Steep Ascent/Descent		
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 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		Before 250m Rumble Strips
37	Rough Road		
38	Dangerous Ditch		
39	Slippery Road		
40	Slippery Road because of Ice		
41	Opening or Swing Bridge		
42	Overhead Cable	8	Approach of Overhead Cable Crossing
43	Play Ground Ahead		
44	Quay Side or River Bank		
45	Sudden Side Winds		
46	Tunnel Ahead Warning	2	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		

S. No.	Road Signs	Number	Remarks
52	Unguarded Railway Crossing		
53	Guarded Railway Crossing		
54	Crash prone area ahead		
55	U- Turn	-	
III	Chevron Signs		
1	Single Chevron	541	Outer edge of curves
2	Double Chevron		
3	Triple Chevron		
IV	Object Hazard Marker Sign		
1	Left /Right side Object Hazard Marker	1120	Culvert, Bridge & ROB Location
2	Two-way Object Hazard Marker	-	
V	Informatory/Guide		
1	Direction and Place Identification signs	22	at every 5 Km both side
2	Stack Type Advance Direction Sign (Shoulder Mounted)	11	at every 10 Km both side
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		
7	Reassurance Sign	22	at every 5 Km both side
8	Place Identification Sign		
9	Bus Lay Bay	-	
10	Toll Booth Ahead		
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		

S. No.	Road Signs	Number	Remarks
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		
18	Cantilever Gantry Mounted Advance Direction Sign for Interchange		
19	Lane Dedicated Gantry Sign		
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	8	Eating Place/ Light Refreshment/Fuel Pump
2	Light Refreshment		
3	Resting Place		
4	First Aid Post		
5	Toilet	4	
6	Filling Station (Fuel Pump)	4	
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		

S. No.	Road Signs	Number	Remarks
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		
27	Guide Sign on Toll Lane Portal		
28	Country Border		
29	Entry Ramp for Expressway/HSC		
30	Exit Ramp for Expressway/HSC		
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	28	Emergency call box locations
7	Toilet Facilities	4	At toilet facility locations
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		

S. No.	Road Signs	Number	Remarks
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/HSC Route Marker Sign	24	At every 5Km interval

2.3. Road Marking

Road Markings shall be Hot applied thermoplastic materials with reflectorized beads to achieve visibility conforming 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
16	Stop Line			As per Manual
17	Give Way Lines			As per Manual

S. No.	Item	For Main Carriageway		Remarks
		Length/Area	Number	
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			As per Manual
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

S. No.	Item	For Main Carriageway		Remarks
		Length/Area	Number	
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
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/Authority, as per site requirement. It is clarified here that the above requirement is minimum only and actual layout of road marking shall be as per design of the Concessionaire and shall be subjected to approval of Independent Engineer/Authority and any increase in number/length or change in locations shall not constitute COS.

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 2019)	10944	
3	Object Markers	-	At Intersections, Grade Separators, Bridges & ROB locations
4	Road Delineators	1605 (For Main Carriageway)	As per Manual
5	Flexible Object Markers (Clause 6 of IRC 79 2019) i. On Metal Beam Barrier ii. On Toll Booth/Toll Island iii. On Entry/Exit of Tunnel iv. On Exit from Main carriageway	As mentioned in clause 8.4 (On Thrie Beam Crash)	On Thrie Beam Crash Barrier in Fig 2.2A on either side

S. No.	Item	Number/ Length (m)	Remarks
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/Authority, 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	7243 (For Main Carriageway)	Traffic lane line & center of carriageway	
2	Red Colour one coloured face Road Studs	7243 (For Main Carriageway)	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	7243 (For Main Carriageway)	Median side edge line, zebra crossing	
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)	-	NIL	

S.No.	Item	Number	Location	Remarks
	and Builtup areas, In storage lane of median opening and Exit/Entry from main carriageway			

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

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

2.6.1 Provide Impact Attenuators in Gore Areas

It shall be **self-restoring confirming to section 6 of IRC SP 84:2019** at the following locations.

S. No.	Item	Chainage/Number	Remarks
1	On flyover/grade separated structure at exit from main carriageway	Nil	As per site requirement
2	Any other location which Safety Hazard -Before Toll Plaza	Nil	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			

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	-	-	-	-

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	Nil	

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 2022. This shall consist of footpath (sidewalks), pedestrian guard rails and pedestrian crossing.

The details are as mentioned below:

S. No.	Pedestrian Facilities	Chainage		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 locations having an illumination of min. 40 lux at the extreme edge of Highway. (Drawing Attached as Annexure A of Schedule C).

S. 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)			Nil	Electricity Board/ Generator/ Solar

S. No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
2	On Major/Minor Bridges, viaducts and Underpasses and its approaches (Both side Over hanged) for main carriageway	78+600	78+697	Both	Electricity Board/ Generator/ Solar
		78+697	78+704	Both	
		78+704	78+720	Both	
		79+470	79+590	Both	
		79+980	80+047	Both	
		80+047	80+054	Both	
		80+054	80+140	Both	
		80+560	80+650	Both	
		80+650	80+850	Both	
		80+850	80+880	Both	
		81+660	81+703	Both	
		81+703	81+928	Both	
		81+928	81+960	Both	
		82+400	82+430	Both	
		82+430	82+655	Both	
		82+655	82+680	Both	
		83+240	83+255	Both	
		83+255	83+360	Both	
		83+360	83+400	Both	
		83+720	83+960	Both	
		84+840	84+880	Both	
		84+880	84+925	Both	
		84+925	84+960	Both	
		85+220	85+305	Both	
		86+240	86+260	Both	
		86+260	86+295	Both	
		86+295	86+320	Both	
		88+234	88+900	Both	
		89+380	89+402	Both	
		89+402	89+409	Both	
		89+409	89+480	Both	
		89+830	90+012	Both	
		91+480	91+980	Both	
		92+200	92+240	Both	
		92+240	92+440	Both	
		92+440	92+552	Both	
		92+552	92+568	Both	
		92+568	92+600	Both	
		93+280	93+320	Both	
		93+320	93+490	Both	
93+490	93+520	Both			
93+730	93+770	Both			
93+770	93+840	Both			
94+720	94+772	Both			
94+772	94+779	Both			
94+779	94+800	Both			
96+100	96+110	Both			
96+145	96+155	Both			
96+620	96+720	Both			
97+640	97+687	Both			
97+687	97+694	Both			

S. No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
		97+694	97+720	Both	
		97+980	98+057	Both	
		98+057	98+064	Both	
		98+064	98+100	Both	
		98+170	98+230	Both	
		98+400	98+940	Both	
		100+020	100+260	Both	
		100+860	100+897	Both	
		100+897	100+904	Both	
		100+904	100+920	Both	
		101+712	101+728	Both	
		102+440	102+530	Both	
		102+700	102+760	Both	
		105+360	105+425	Both	
		105+550	105+590	Both	
		105+610	105+860	Both	
		105+950	106+030	Both	
		106+890	106+995	Both	
		107+090	107+120	Both	
		108+088	108+150	Both	
		108+240	108+560	Both	
		108+560	108+617	Both	
		108+617	108+624	Both	
		108+624	108+660	Both	
		108+660	108+835	Both	
		109+380	109+860	Both	
		110+255	110+290	Both	
		111+485	111+765	Both	
		111+952	111+968	Both	
		112+050	112+460	Both	
		112+735	112+775	Both	
		112+815	112+825	Both	
		112+850	112+980	Both	
		113+015	113+025	Both	
		113+425	113+435	Both	
		113+535	113+545	Both	
		113+700	113+780	Both	
		113+895	113+935	Both	
		113+945	114+285	Both	
		114+400	114+665	Both	
		114+730	114+920	Both	
		114+970	115+040	Both	
		115+160	115+545	Both	
		115+560	115+600	Both	
		115+655	116+500	Both	
		116+560	117+020	Both	
		117+460	118+360	Both	
		118+620	118+850	Both	
		118+937	118+953	Both	
		119+335	119+345	Both	
		119+690	119+810	Both	

S. No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
		119+835	119+870	Both	
		119+960	120+320	Both	
		120+345	120+370	Both	
		120+585	120+630	Both	
		120+686	120+694	Both	
		121+060	121+180	Both	
		121+215	121+225	Both	
		121+534	121+546	Both	
		121+580	121+620	Both	
		121+680	121+840	Both	
		121+900	122+230	Both	
		122+265	122+275	Both	
		122+345	122+375	Both	
		122+450	122+690	Both	
		122+815	122+825	Both	
		123+155	123+165	Both	
		123+564	123+576	Both	
		123+700	123+760	Both	
		124+000	124+040	Both	
		124+208	124+223	Both	
		124+245	124+275	Both	
		124+312	124+327	Both	
		124+340	124+440	Both	
		124+480	124+580	Both	
		124+790	124+825	Both	
		124+940	125+000	Both	
		125+040	125+140	Both	
		125+550	125+640	Both	
		125+720	125+800	Both	
		125+860	126+220	Both	
		126+720	126+820	Both	
		126+990	127+020	Both	
		127+255	127+480	Both	
		127+855	128+420	Both	
		128+470	128+500	Both	
		128+736	128+744	Both	
		128+810	128+825	Both	
		128+955	129+135	Both	
		129+565	129+871	Both	
		130+020	130+155	Both	
		130+182	130+198	Both	
		130+400	130+520	Both	
		131+120	131+580	Both	
		132+020	132+280	Both	
3	Grade separated interchanges, underpasses (pedestrian) overpasses: Lighting requirement shall be as per section 12 of	Nil			Electricity Board/ Generator/ Solar

S. No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
	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				

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

10.1. Tree Plantation and Protection

The Contractor shall ensure the plantation of **1,50,000 (Three Lakh Fifty Thousand)** trees, each with a **tree guard**, at locations identified in coordination with the Authority or the Independent Engineer.

10.2. 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.

10.3. Environmental Monitoring

The Concessionaire/Contractor shall:

- Monitor **Ambient Air Quality, Ambient Noise Levels, Noise Barriers (IRC SP 130), 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		

Sl. No.	Types of Plantations	Location (Km)	Number of trees to be planted	Remarks
2	Land Scaping	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 NHA 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 NHA 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:

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:

S. No	Location (Km)	Remarks	Availability of Full Gantry
1	86+000	BHS	No
2	113+300	BHS	No

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	84+370	BHS VASD on Butterfly type Gantry	No
2	119+100	BHS VASD on Butterfly type Gantry	No

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

12.1.4.1.1. Gantry (M Type)

VMS - Full M' Type					
Sr. no	Equipment name	Location	Side	Location	Remarks
1	VMS F+RSU	90+480	Shillong -Silchar	On Overpass	
2	VMS F+RSU	90+480	Silchar-Shillong	On Overpass	
3	VMS F+RSU	128+680	Shillong -Silchar	On Overpass	
4	VMS F+RSU	128+680	Silchar-Shillong	On Overpass	

12.1.4.1.2 Cantilever (M Type)

VMS - Full L' Type					
Sr. no	Equipment name	Location	Side	Location	Remarks
1	VMS F+RSU	81+000	Shillong -Silchar		
2	VMS F+RSU	81+000	Silchar-Shillong		
3	VMS F+RSU	95+700	Shillong -Silchar		
4	VMS F+RSU	95+700	Silchar-Shillong		

12.1.4.2. Portable VMS

The Concessionaire shall provide 04 (No.) 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.

12.1.1 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 Authority 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 Authority
- 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 Authority 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, trail-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 (NHA 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 bye 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. 1 One 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.

18. Establishment of Fully Furnished office PMU-NHIDCL Khliehriat at Khliehriat by the Concessionaire

The Concessionaire shall be responsible for the establishment of one (01) fully furnished office for PMU–NHIDCL Khliehriat at Khliehriat, with an approximate built-up area of 12000 SQFT. The Authority shall provide the required land for construction of the said PMU office. The Concessionaire shall be responsible for providing all necessary infrastructure, furnishings, utilities, and facilities to ensure the office is fully functional. This shall include, but not be limited to, the following:

1. Civil & Interior Works

Office rooms, meeting room, record room, pantry, and toilets, Flooring, false ceiling, lighting fixtures, and internal partitions, Adequate ventilation and air-conditioning

2. Furniture & Fixtures

Office tables, chairs, and storage units for PMU staff, Conference table with chairs, workstations as required, Filing cabinets and document storage racks, Notice boards and display boards

3. Electrical & Power Supply

Internal electrification with sufficient power outlets, LED lighting fixtures, Power backup through inverter/UPS and DG set, Earthing and electrical safety measures

4. IT & Communication Internet connectivity (broadband/fiber), LAN wiring and network points, Telephone lines/intercom facility, Provision for printers, scanners, and other office equipment

5. Utilities & Services

Drinking water facility (water purifier/dispenser), Functional pantry with basic fittings, Adequate sanitation facilities, Housekeeping and routine maintenance

6. Safety & Security- Fire extinguishers and basic fire safety arrangements, First aid box, Secure doors, windows, and locking systems

7. The construction of the Office Building shall commence from the Appointed Date and shall be completed within 01 year. The Concessionaire shall handover the office premises to Authority after completion of construction.

8. The entire office work shall be carried out as per CPWD specifications with earthquake resistant building design for seismic zone 5. Further, the concessionaire shall engage an architectural expert for design of building including its outer façade and elevation which shall be finalized in consultation with the Authority. The entire plan of office building shall be finalized in consultation with Authority. NHIDCL may also develop one floor as guest house within the total builtup area for which entire fitting furnishing including furniture shall be provided by the concessionaire.
9. The concessionaire shall also provide a lift with adequate power supply.
10. The concessionaire shall also provide aesthetic boundary wall and plantation and landscaping of the entire PMU premises including vacant land to the satisfaction of Authority.
11. The concessionaire shall also be responsible for procuring electrical and water connection for the building.
12. The concessionaire shall be responsible for maintenance of the office building for the entire concession period except electricity bill.
13. The payment for the construction of said Office Building is not included in the Contract Price and shall be made from the Contingency head of the Project as per the actual requirement.

19. TRAINING FACILITY & CAPACITY BUILDING INFRASTRUCTURE

1. GENERAL

1.1 This Annexure to Schedule–C forms an integral part of the Concession Agreement ("Agreement").

1.2 The Concessionaire shall design, construct, establish, operate and maintain the Project Facilities described herein in accordance with the Agreement, Applicable Laws, Applicable Permits and Good Industry Practice.

1.3 Without prejudice to the generality of the foregoing, the Concessionaire shall establish and operate a dedicated Training and Capacity Building Facility in accordance with this Schedule–C.

2. TRAINING FACILITY – ESTABLISHMENT OBLIGATION

2.1 Objective

The Training Facility shall serve as a structured skill development and upskilling centre for highway construction personnel engaged in the Project, particularly for hill road and North-Eastern terrain conditions.

2.2 Location

The Training Facility shall be established at Package–3 (Khlerihat – Mid Corridor Location) or at such other location as may be approved in writing by the Authority.

2.3 Minimum Infrastructure Requirements

(a) Built-Up Area: Minimum 5000 sqm; G+1 RCC structure. The Architectural Drawing shall be approved by Authority.

(b) Academic Infrastructure: Two Smart Classrooms; One Conference Room; Audio-visual systems; Internet-enabled systems; Digital knowledge repository.

(c) Residential Infrastructure: Accommodation for minimum 30 Technician trainees and 18 Officer trainees; Twin-sharing rooms; Separate trainer accommodation; Mess and sanitation facilities.

(d) Utilities: Power backup; Water supply; Fire & safety compliance; Basic security systems including CCTV.

3. TIMELINE FOR COMPLETION

3.1 The Training Facility shall be completed prior to Construction Milestone–I and in any event within 255 (Two Hundred and Fifty-Five) days from the Appointed Date.

3.2 Completion of the Training Facility shall be a pre-condition for certification of Construction Milestone–I.

4. TRAINING PROGRAMME REQUIREMENTS

4.1 Scope of Training

The Concessionaire shall conduct structured training covering the following trades:

- (a) Earthwork & Subgrade Supervisors
- (b) Hill Road Slope Protection Masons
- (c) RE Wall Construction Technicians
- (d) Heavy Structural Formwork Technicians
- (e) Pre-stressing Technicians (where applicable)
- (f) Sensor Paver Operators
- (g) Hot Mix Plant Operators

- (h) Geo-technical / Boring Technicians
- (i) Highway QC Documentation Assistants
- (j) Work Zone / Traffic Safety Marshals

Minimum 10% of the workforce deployed on the Project shall undergo structured training.

4.2 Duration of Courses

- (a) 1-week Awareness Programmes
- (b) 2-week Intermediate Programmes
- (c) 4-week Advanced Technical Programmes
- (d) 12-week Certification Programmes

5. KNOWLEDGE PARTNER

5.1 The Authority may appoint a Knowledge Partner for curriculum design, training of trainers, assessment and certification.

5.2 The Concessionaire shall provide logistical support, access to equipment, and facilitate field demonstrations for the Training Programme.

6. ROLE OF INDEPENDENT ENGINEER

6.1 The Independent Engineer shall deploy:

- (a) One (1) Training Coordinator (Full-Time)
- (b) Two (2) Assistant Training Coordinators (Full-Time)

6.2 The Training Coordinator shall oversee operations of the Training Facility, prepare case studies, monitor training quality and submit Monthly Reports to the Authority.

6.3 The Independent Engineer shall approve the design of the training facility building and supervise its Construction.

7. ROLE OF CONCESSIONAIRE

7.1 The Shillong Silchar High Speed Corridor Project is bifurcated into 4 packages, i.e. Package-1 from km 0+000 to km 45+645, Package-2 from km 45+645 to km 78+600, Package-3 from km 78+600 to km 133+320, & Package-4 from km 133+320 to km 164+355.

7.2 This Annexure-to schedule C is applicable in entirety for Concessionaire for Package-3.

7.3. Other than above, the Concessionaire for Package-1, 2, 3, & 4 shall be responsible for providing access to the project site and facilitating trainees on its respective project packages.

7.4. Concessionaire for Package-1, 2, 3, & 4 shall be responsible for having their manpower trained at the training facility covered in this Annexure, to an extent of 10% of its manpower for duration minimum 2 months.

7.5 Training Coordinator – Each of the Concessionaire shall appoint at its own cost one adequately qualified and experienced training coordinator and the same shall be intimated to the Independent Engineer and the Authority.

8. FINANCIAL PROVISIONS (HAM STRUCTURE)

8.1 The capital cost of the Training Facility shall be paid separately for an estimate as per Meghalaya PWD (Building)SOR 2021-2022 with effect from July 2021. **It is to clarify that for determination of cost of change of scope (if any), the same SOR rate shall be applicable for items of works without any updation to Base date. The Tender premium / discount shall be applied over the cost estimate for the purpose of cost payable to the Concessionaire.**

8.2 The Authority shall reimburse Rs. [****] per trainee per batch and Rs. [****] per month towards operational support during the Construction Period.

8.3 The Training Facility shall constitute a Project Asset, and ownership shall vest with the Authority.

9. OPERATION DURING O&M PERIOD

9.1 During the O&M Period, the Facility shall continue as a knowledge and training hub.

10. REPORTING REQUIREMENTS

The Concessionaire shall submit:

- (a) Monthly Training Progress Reports
- (b) Attendance and Certification Records
- (c) Skill Assessment Sheets
- (d) Safety Compliance Integration Reports
- (e) Photographic Documentation

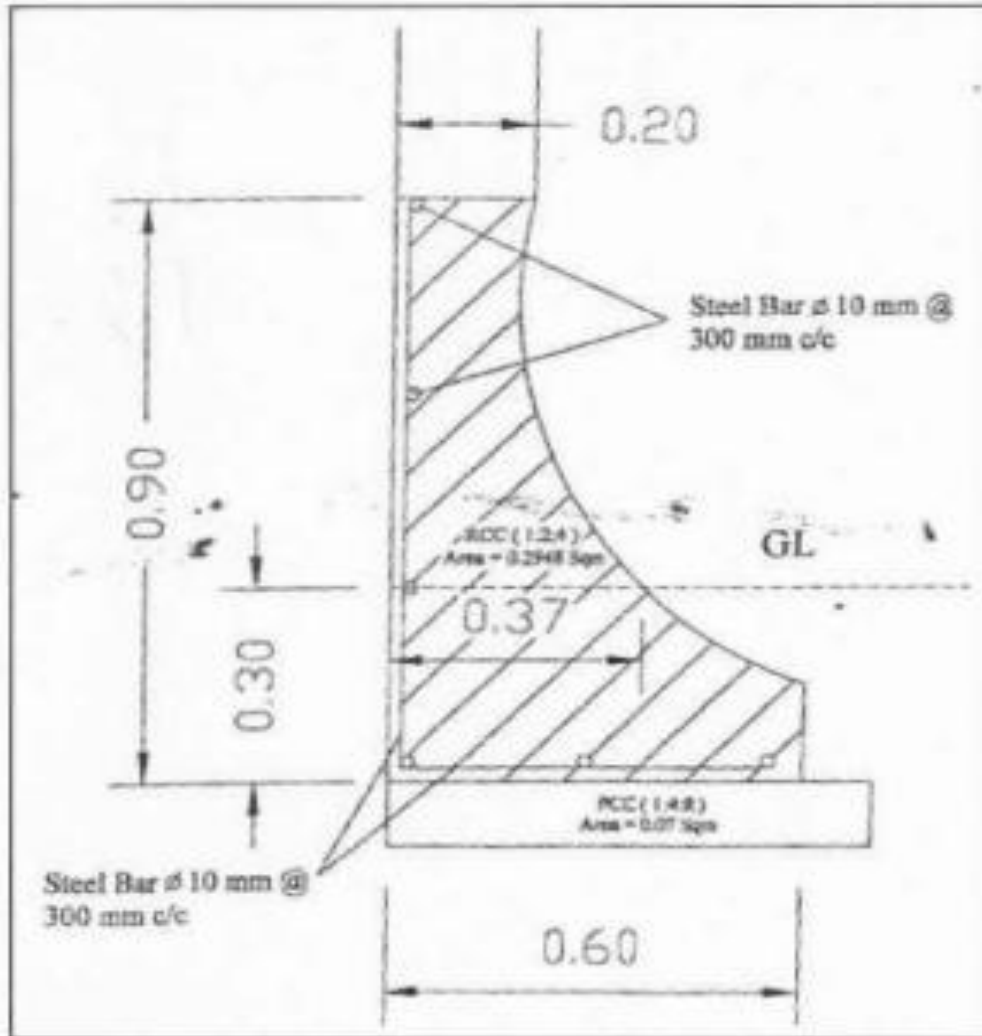
11. NON-COMPLIANCE

Failure to comply with this Schedule–C shall constitute a Material Breach and may result in withholding of Milestone Payments, deduction in Annuity Payments, or invocation of Performance Security in accordance with the Agreement.

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.

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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 Km/h for Mountainous terrain	Ruling Design Speed is 80 Km/h
2	6.2.2 of IRC-92-2017	Desirable design speed for loops/ramps	As per IRC 92-2017
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	<ul style="list-style-type: none"> • 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.

S. No.	Clause as per Manual	Manual Provision	Modified Provision
6	2.17	Typical cross-sections	The typical cross sections are not as per manual.
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 NHA 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.