National Highway Infrastructure Development Corporation Limited

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

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

TECHNICAL SCHEDULES (A to D)

Dec. 2025
1st & 2nd Floor,
Tower A, World Trade Centre, Nauroji Nagar,
New Delhi - 110029

SCHEDULE-A

(See Clause 2.1 and 8.1)

SITE OF THE PROJECT

1 THE SITE

1.1 Site of the Four Lane Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.

1.2 The dates of handing over the Right of Way to the Concessionaire are specified in Annex-II of this Schedule-A.

1.3 An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attach to, the Site shall be prepared jointly by the Authority Representative and the Concessionaire, and such inventory shall form part of the memorandum referred to in Clause 8.2(i) of this Agreement.

1.4 The alignment plans of the Project Highway are specified in Annex-III of Schedule-A. The proposed profile of the Project Highways shall be followed by the Concessionaire with minimum FRL as indicated in the alignment plan. The Concessionaire, however, improve/upgrade the Road Profile as indicated in Annex-III based on site/design requirement.

1.5 The status of the environment clearances obtained or awaited is given in Annex-IV of Schedule-A.

Annex – I

(Schedule-A)

Site for Four Laning

1 Site

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

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

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

2 Land

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

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

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

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

3 Carriageway

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

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

4 Major Bridges-

The site includes the following major bridge:

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

5 Railway Over Bridges / Road under Bridges

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

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

6 Grade Separators

The site includes the following Grade Separators:

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

7 Minor Bridges

The Site includes the following Minor Bridges:

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

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:

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

11 Toll Plaza:

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

12 Total Number of Structures

The total number of structures on the Site indicated below:

(a) No. of Major Bridges – Nil

(b) No. of Railway Over Bridges – Nil

(c) No. of Grade Separators –Nil

(d) No. of Underpasses – Nil

(e) No. of Minor Bridges – Nil

(f) No. of Culverts – Nil

(g) Toll Plaza –Nil

13 Bus bays/Bus shelters and Truck lay-byes

13.1 Truck Lay-byes

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

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

14 Road Side Drains (Lined)

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

15 Major Junction

The details of major junctions are as follows:

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

			Right/ Both)			
Nil						

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

16 Minor Junction

The details of minor junctions are as follows:

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

17 Built up Area

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

S. No.	Existing Chainage (km)		Length (km)	Side (LHS / RHS / Both)	Village name
	From	To			
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	71+180					1		Raising required to meet the requisite vertical clearance	MePTCL
2	72+060					1		-do-	MePTCL
3	73+620					1		-do-	MePTCL

- SC – Single Circuit, DC – Double Circuit

(b) Low Tension Lines (LT Lines)

S. No.	Design Chainage		Length (in Km)				Crossings			Transformer (63 Kv/100 KV/200KV)
	From	To	33 KV	11 KV	LT	LT (UG)	33 KV	11 KV	LT	No.
1	45+680		-	0.11		-	-	2		

2	47+180		0.15				4			
3	51+820	51+970			0.15				4	
4	54+550			0.2				4		
5	55+500			0.05				5		
6	59+660			0.055				4		
7	63+860				0.05				2	
8	64+660			0.28				4		
9	64+930				0.12				2	
10	65+080		0.16				4			
11	68+010			0.07				9		
12	71+250	71+370	0.12				5			
13	72+260	72+450	0.19				7			
14	73+500	73+680	0.18				5			
15	72+500				0.001				1	
16	70+650				0.06				2	
17	70+800			0.06				2		
18	74+600			0.4				2		
19	76+100			0.4				2		
20	76+200			0.2				2	2	
21	77+000				0.1				6	
22	76+760				0.075				5	
23	77+620			0.15	0.9				6	63kv

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.)
	From	To				
1	**54+500**			80		1
2	**63+680**	**63+770**	210	50		1
3	**63+770**		110	15		2
4	**64+020**		110	15		2
5	**67+940**		80	100		1
6	**67+940**		80	80		1
7	**70+675**		60	100	D.I.	1
8	**71+140**	**71+200**	60	200	D.I.	1
9	**74+440**		60	150	D.I.	1
10	**76+260**		60	150	D.I.	1
11	**76+260**		60	80	G.I.	1
12	**76+260**		60	65	G.I.	1
13	**76+260**		60	50	G.I.	1
14	**76+260**		60	40	G.I.	1
15	**76+260**		60	25	G.I.	1

S.No.	Design Chainage (m) From	To	Length (m)	Dia (mm)	Type of pipe	Crossings (Nos.)
16	**76+770**		75	65		1
17	**76+870**		70	40		2
18	**76+870**		70	25		2
19	**76+870**		70	250	D.I.	1
20	**76+950**		80	40		1
21	**76+950**		80	15		1
22	**76+950**		80	25		1
23	**76+950**		10,000 ltr water tank			

21 IGGL

The site includes the following water pipeline utilities:

S.No.	Design Chainage (m) From	To	Length (m)	Dia (mm)	Type of pipe	Crossings (Nos.)
1	**50+650**					1

Annex - II

(Schedule-A)

DATES FOR PROVIDING RIGHT OF WAY OF CONSTRUCTION ZONE

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

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

For Main Carriageway

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
1	45645	45870	225	30	38	68
2	45870	45900	30	35	38	73
3	45900	45960	60	35	30	65
4	45960	46150	190	30	30	60
5	46150	46190	40	30	42	72
6	46190	46440	250	40	42	82
7	46440	46580	140	22.5	22.5	45
8	46580	46720	140	74	47	121
9	46720	46820	100	74	37	111
10	46820	46840	20	59	37	96
11	46840	46940	100	59	27	86
12	46940	47050	110	45	27	72
13	47050	47100	50	45	38	83
14	47100	47130	30	35	38	73
15	47130	47220	90	35	83	118
16	47220	47240	20	29	83	112
17	47240	47320	80	29	43	72
18	47320	47370	50	29	25	54
19	47370	47410	40	54	25	79

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
20	47410	47500	90	54	82	136
21	47500	47540	40	37	82	119
22	47540	47640	100	37	64	101
23	47640	47690	50	37	30	67
24	47690	47750	60	47	30	77
25	47750	47760	10	47	52	99
26	47760	47780	20	42	52	94
27	47780	47880	100	38	52	90
28	47880	47920	40	38	27	65
29	47920	48060	140	35	27	62
30	48060	48130	70	27.5	27	54.5
31	48130	48140	10	27.5	27	54.5
32	48140	48150	10	27.5	27	54.5
33	48150	48160	10	27.5	49	76.5
34	48160	48170	10	27.5	49	76.5
35	48170	48180	10	27.5	49	76.5
36	48180	48190	10	27.5	49	76.5
37	48190	48200	10	27.5	49	76.5
38	48200	48210	10	27.5	49	76.5
39	48210	48220	10	27.5	49	76.5
40	48220	48270	50	27.5	49	76.5
41	48270	48390	120	22.5	22.5	45
42	48390	48610	220	27.5	39	66.5
43	48610	48640	30	36	39	75
44	48640	48700	60	36	25	61
45	48700	48790	90	30	25	55
46	48790	48850	60	30	30	60
47	48850	48890	40	38	30	68
48	48890	49020	130	38	38	76
49	49020	49170	150	24	38	62
50	49170	49250	80	24	49	73
51	49250	49320	70	29	49	78
52	49320	49410	90	29	32	61
53	49410	49550	140	36	32	68
54	49550	49650	100	56	39	95
55	49650	49860	210	56	64	120
56	49860	49900	40	56	49	105
57	49900	50010	110	35	49	84
58	50010	50040	30	24	35	59
59	50040	50200	160	24	27	51
60	50200	50320	120	28	34	62
61	50320	50360	40	28	30	58
62	50360	50400	40	30	30	60
63	50400	50560	160	30	26	56

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
64	50560	50640	80	50	26	76
65	50640	50740	100	35	39	74
66	50740	50860	120	55	39	94
67	50860	50870	10	30	39	69
68	50870	50980	110	30	27	57
69	50980	51060	80	39	33	72
70	51060	51160	100	36	36	72
71	51160	51260	100	25	36	61
72	51260	51360	100	33	36	69
73	51360	51480	120	33	26	59
74	51480	51500	20	33	34	67
75	51500	51580	80	24	34	58
76	51580	51680	100	24	30	54
77	51680	51720	40	31	30	61
78	51720	51840	120	31	22	53
79	51840	51900	60	31	50	81
80	51900	51960	60	35	50	85
81	51960	52060	100	46	64	110
82	52060	52180	120	37	64	101
83	52180	52200	20	37	46	83
84	52200	52260	60	25	46	71
85	52260	52460	200	25	28	53
86	52460	52560	100	25	30	55
87	52560	52680	120	70	40	110
88	52680	52760	80	22	33	55
89	52760	52880	120	22	27	49
90	52880	52920	40	29	27	56
91	52920	53000	80	29	29	58
92	53000	53060	60	45	29	74
93	53060	53160	100	45	44	89
94	53160	53180	20	45	36	81
95	53180	53280	100	27	36	63
96	53280	53600	320	27	26	53
97	53600	53720	120	20	26	46
98	53720	53740	20	27	26	53
99	53740	53800	60	27	34	61
100	53800	53900	100	27	24	51
101	53900	54000	100	23	24	47
102	54000	54040	40	23	27	50
103	54040	54120	80	28	27	55
104	54120	54160	40	40	27	67
105	54160	54200	40	40	45	85
106	54200	54330	130	55	45	100
107	54330	54410	80	55	60	115

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
108	54410	54550	140	62	60	122
109	54550	54570	20	73	60	133
110	54570	54860	290	73	80	153
111	54860	54870	10	73	85	158
112	54870	54970	100	54	85	139
113	54970	55070	100	54	67	121
114	55070	55170	100	54	53	107
115	55170	55190	20	54	46	100
116	55190	55270	80	36	46	82
117	55270	55340	70	36	40	76
118	55340	55370	30	36	22	58
119	55370	55440	70	32	22	54
120	55440	55480	40	32	25	57
121	55480	55600	120	26	25	51
122	55600	55680	80	32	25	57
123	55680	55700	20	32	33	65
124	55700	55760	60	24	33	57
125	55760	55860	100	24	28	52
126	55860	55920	60	28	28	56
127	55920	56020	100	28	23	51
128	56020	56320	300	28	27	55
129	56320	56400	80	28	38	66
130	56400	56440	40	44	38	82
131	56440	56520	80	44	27	71
132	56520	56700	180	24	27	51
133	56700	56780	80	30	27	57
134	56780	57100	320	25	27	52
135	57100	57160	60	32	27	59
136	57160	57200	40	32	22	54
137	57200	57260	60	26	22	48
138	57260	57320	60	26	40	66
139	57320	57420	100	40	40	80
140	57420	57440	20	28	40	68
141	57440	57540	100	28	24	52
142	57540	58000	460	28	27	55
143	58000	58160	160	23	27	50
144	58160	58320	160	29	27	56
145	58320	58420	100	37	24	61
146	58420	58460	40	22	24	46
147	58460	58520	60	22	28	50
148	58520	58620	100	30	28	58
149	58620	58720	100	30	30	60
150	58720	58840	120	30	28	58
151	58840	58860	20	26	28	54

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
152	58860	58980	120	26	31	57
153	58980	59060	80	29	31	60
154	59060	59220	160	29	64	93
155	59220	59340	120	29	28	57
156	59340	59360	20	29	22	51
157	59360	59500	140	46	22	68
158	59500	59640	140	46	37	83
159	59640	59740	100	30	37	67
160	59740	59800	60	30	29	59
161	59800	59920	120	40	29	69
162	59920	59940	20	29	29	58
163	59940	60020	80	29	26	55
164	60020	60180	160	27	26	53
165	60180	60280	100	22	45	67
166	60280	60320	40	22	24	46
167	60320	60440	120	26	24	50
168	60440	60560	120	26	27	53
169	60560	60680	120	21	27	48
170	60680	60700	20	25	27	52
171	60700	60840	140	25	23	48
172	60840	60940	100	44	37	81
173	60940	61000	60	44	28	72
174	61000	61060	60	28	28	56
175	61060	61180	120	28	36	64
176	61180	61260	80	44	36	80
177	61260	61360	100	44	46	90
178	61360	61380	20	44	49	93
179	61380	61460	80	35	49	84
180	61460	61520	60	35	61	96
181	61520	61560	40	30	61	91
182	61560	61720	160	30	37	67
183	61720	61760	40	48	37	85
184	61760	61940	180	48	30	78
185	61940	62070	130	45	43	88
186	62070	62110	40	30	43	73
187	62110	62180	70	30	37	67
188	62180	62230	50	22	37	59
189	62230	62360	130	22	27	49
190	62360	62390	30	34	27	61
191	62390	62500	110	34	30	64
192	62500	62540	40	30	30	60
193	62540	62620	80	30	28	58
194	62620	62680	60	36	28	64
195	62680	62760	80	36	34	70

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
196	62760	62780	20	28	34	62
197	62780	63020	240	28	30	58
198	63020	63110	90	34	25	59
199	63110	63160	50	34	33	67
200	63160	63200	40	28	33	61
201	63200	63320	120	28	24	52
202	63320	63380	60	28	32	60
203	63380	63460	80	30	32	62
204	63460	63560	100	30	36	66
205	63560	63640	80	24	36	60
206	63640	63680	40	24	28	52
207	63680	63760	80	28	28	56
208	63760	63900	140	28	39	67
209	63900	63920	20	22	39	61
210	63920	64040	120	22	24	46
211	64040	64180	140	27	24	51
212	64180	64260	80	27	29	56
213	64260	64370	110	42	40	82
214	64370	64450	80	47	40	87
215	64450	64530	80	47	47	94
216	64530	64550	20	42	47	89
217	64550	64650	100	42	40	82
218	64650	64670	20	48	40	88
219	64670	64730	60	48	49	97
220	64730	64770	40	72	49	121
221	64770	64830	60	72	74	146
222	64830	65110	280	78	74	152
223	65110	65210	100	68	62	130
224	65210	65230	20	55	62	117
225	65230	65300	70	55	57	112
226	65300	65350	50	40	57	97
227	65350	65800	450	40	54	94
228	65800	65920	120	40	30	70
229	65920	65960	40	40	22	62
230	65960	66060	100	36	22	58
231	66060	66240	180	30	30	60
232	66240	66340	100	30	24	54
233	66340	66400	60	30	35	65
234	66400	66520	120	50	35	85
235	66520	66620	100	63	48	111
236	66620	66660	40	63	29	92
237	66660	66740	80	46	29	75
238	66740	66760	20	46	24	70
239	66760	66900	140	23	24	47

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
240	66900	66960	60	23	30	53
241	66960	67060	100	28	30	58
242	67060	67080	20	40	30	70
243	67080	67160	80	40	38	78
244	67160	67180	20	40	44	84
245	67180	67240	60	32	44	76
246	67240	67320	80	32	30	62
247	67320	67340	20	36	30	66
248	67340	67420	80	37	30	67
249	67420	67520	100	37	39	76
250	67520	67580	60	44	39	83
251	67580	67640	60	44	44	88
252	67640	67740	100	46	44	90
253	67740	67780	40	46	30	76
254	67780	67920	140	40	30	70
255	67920	67980	60	40	38	78
256	67980	68000	20	38	38	76
257	68000	68120	120	38	30	68
258	68120	68240	120	34	35	69
259	68240	68360	120	39	35	74
260	68360	68400	40	39	45	84
261	68400	68500	100	27	45	72
262	68500	68620	120	38	36	74
263	68620	68680	60	38	40	78
264	68680	68780	100	63	40	103
265	68780	68880	100	48	40	88
266	68880	68900	20	48	30	78
267	68900	69000	100	24	30	54
268	69000	69060	60	34	30	64
269	69060	69330	270	22.5	22.5	45
270	69330	69400	70	56	35	91
271	69400	69500	100	56	28	84
272	69500	69560	60	56	42	98
273	69560	69580	20	33	42	75
274	69580	69660	80	33	30	63
275	69660	69680	20	28	30	58
276	69680	69800	120	28	48	76
277	69800	69900	100	28	31	59
278	69900	69920	20	40	31	71
279	69920	70040	120	40	39	79
280	70040	70130	90	22.5	22.5	45
281	70130	70260	130	40	44	84
282	70260	70280	20	40	34	74
283	70280	70400	120	33	34	67

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
284	70400	70460	60	33	30	63
285	70460	70520	60	35	30	65
286	70520	70660	140	35	27	62
287	70660	70700	40	31	27	58
288	70700	70800	100	31	31	62
289	70800	71020	220	31	28	59
290	71020	71040	20	31	36	67
291	71040	71180	140	34	36	70
292	71180	71280	100	30	30	60
293	71280	71380	100	30	27	57
294	71380	71500	120	27	27	54
295	71500	71560	60	27	21	48
296	71560	71660	100	29	21	50
297	71660	71860	200	29	28	57
298	71860	72000	140	25	28	53
299	72000	72080	80	30	28	58
300	72080	72120	40	30	32	62
301	72120	72160	40	22	32	54
302	72160	72240	80	22	25	47
303	72240	72260	20	28	25	53
304	72260	72320	60	28	37	65
305	72320	72440	120	28	26	54
306	72440	72500	60	28	30	58
307	72500	72620	120	23	30	53
308	72620	72700	80	23	32	55
309	72700	72840	140	29	32	61
310	72840	72860	20	26	32	58
311	72860	73060	200	26	23	49
312	73060	73120	60	39	23	62
313	73120	73140	20	39	28	67
314	73140	73220	80	30	28	58
315	73220	73300	80	30	35	65
316	73300	73380	80	35	35	70
317	73380	73780	400	21	30	51
318	73780	73950	170	21	27	48
319	73950	74050	100	30	27	57
320	74050	74070	20	40	27	67
321	74070	74240	170	40	38	78
322	74240	74270	30	40	28	68
323	74270	74370	100	46	28	74
324	74370	74470	100	30	28	58
325	74470	74630	160	34	28	62
326	74630	75050	420	28	28	56
327	75050	75070	20	40	28	68

S. No.	Chainage (m)		Length (m)	Row Width (m)		Total Width (m)
	From	To		Left	Right	
328	75070	75250	180	40	34	74
329	75250	75360	110	28	43	71
330	75360	75500	140	28	36	64
331	75500	75550	50	28	32	60
332	75550	75690	140	38	32	70
333	75690	75890	200	30	32	62
334	75890	76060	170	30	26	56
335	76060	76180	120	30	37	67
336	76180	76300	120	30	29	59
337	76300	76360	60	40	29	69
338	76360	76380	20	40	25	65
339	76380	76560	180	28	25	53
340	76560	76600	40	33	25	58
341	76600	76720	120	33	37	70
342	76720	76900	180	38	37	75
343	76900	77110	210	31	37	68
344	77110	77390	280	41	45	86
345	77390	77410	20	41	52	93
346	77410	77490	80	53	52	105
347	77490	77510	20	53	70	123
348	77510	77700	190	80	70	150
349	77700	77910	210	80	88	168
350	77910	78010	100	70	76	146
351	78010	78110	100	56	60	116
352	78110	78330	220	43	37	80
353	78330	78520	190	32	31	63
354	78520	78600	80	24	31	55

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

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

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

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

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

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

ANNEX-III

(Schedule-A)

ALIGNMENT PLAN

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

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

(i) The alignment of the Project Highway enclosed in alignment plan. Finished road level indicated in the alignment plan shall be minimum requirement. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The Concessionaire shall, however, improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.

(ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed, which is minimum requirement. The Concessionaire shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III of Schedule-A based on site/design requirement as per IRC: SP: 84-2019 & IRC: 67-2022 and other project facilities/road furniture as per IRC standards/Manual.

ANNEX-IV

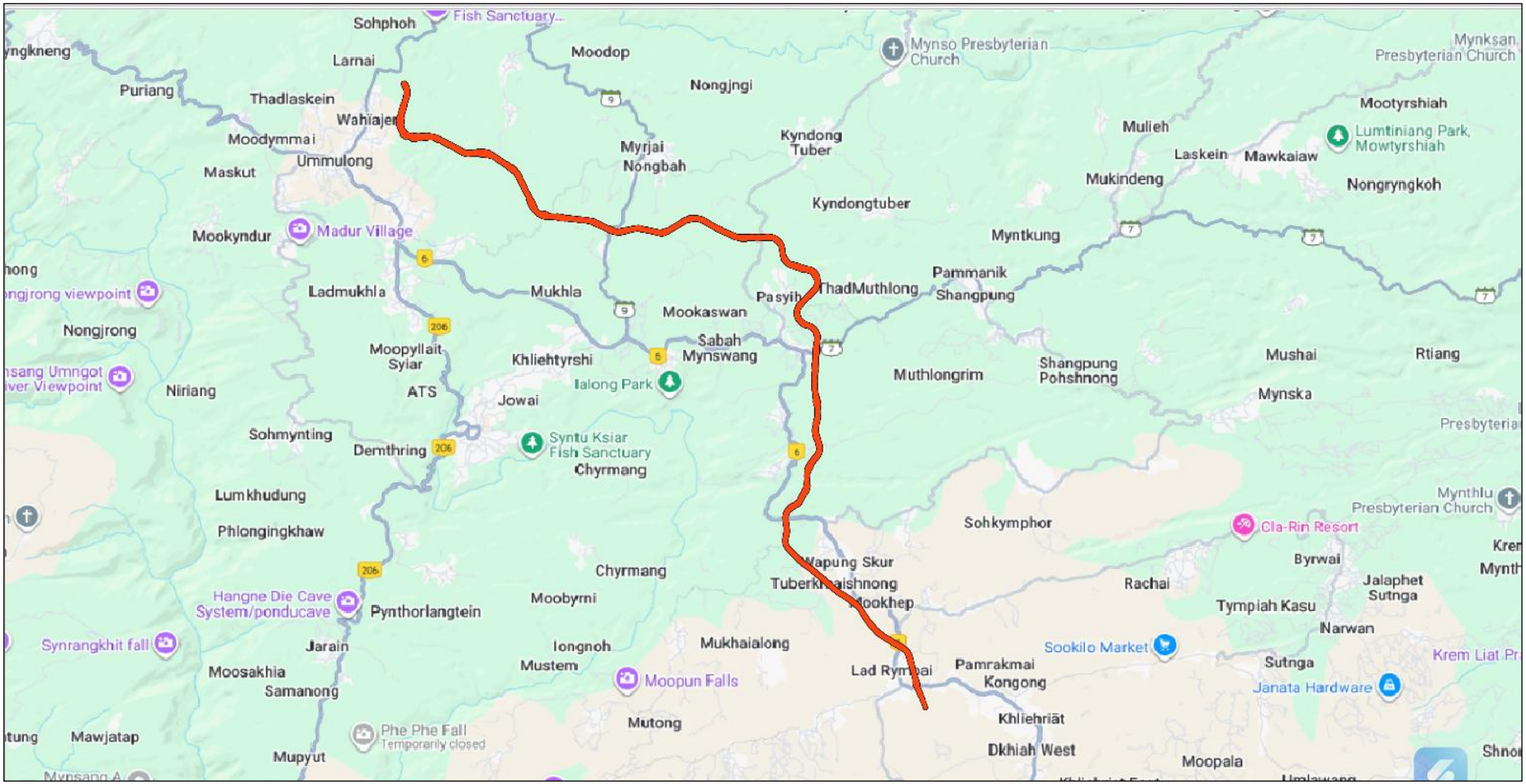
(Schedule-A)

ENVIRONMENTAL CLEARANCES

Environmental Clearance	: Not Applicable
Forest Clearance	**: Deemed Forest identification under progress**
Wildlife Clearance	**: Required for a length of about 110m (0.56 Ha)**

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

PLAN OF THE PROJECT HIGHWAY



Appendix A-II (Schedule-A)

Proposed ROW Co-ordinates

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
1	45645	417067.48	2825088.15	417095.897	2825096.785	417030.855	2825076.951
2	45650	417068.93	2825083.36	417097.7782	2825090.519	417032.4723	2825071.576
3	45700	417080.08	2825034.66	417109.6136	2825038.055	417042.4294	2825027.554
4	45750	417085.07	2824984.94	417114.8081	2824984.523	417046.8344	2824982.635
5	45800	417083.82	2824934.99	417113.3094	2824931.185	417045.557	2824936.983
6	45850	417076.36	2824885.58	417105.1378	2824878.015	417038.6746	2824892.39
7	45900	417063.69	2824837.22	417096.9641	2824826.33	417034.4698	2824844.204
8	45950	417049.80	2824789.19	417083.0591	2824778.195	417020.6179	2824796.253
9	46000	417035.91	2824741.16	417064.3648	2824731.552	417006.7268	2824748.221
10	46050	417022.02	2824693.13	417050.4737	2824683.521	416992.8357	2824700.19
11	46100	417008.13	2824645.09	417036.5826	2824635.489	416978.9447	2824652.158
12	46150	416994.24	2824597.06	417022.6915	2824587.457	416953.526	2824607.46
13	46200	416980.35	2824549.03	417018.4067	2824536.647	416939.6349	2824559.429
14	46250	416966.46	2824501.00	417004.5157	2824488.616	416925.7438	2824511.397
15	46300	416952.57	2824452.97	416990.6246	2824440.584	416911.8527	2824463.366
16	46350	416938.68	2824404.94	416976.7335	2824392.553	416897.9616	2824415.334
17	46400	416924.78	2824356.90	416962.8424	2824344.521	416884.0705	2824367.302
18	46450	416910.89	2824308.87	416932.4414	2824302.392	416889.2129	2824314.894
19	46500	416897.00	2824260.84	416918.5503	2824254.361	416875.3218	2824266.863
20	46550	416883.11	2824212.81	416904.6592	2824206.329	416861.4307	2824218.831
21	46600	416869.22	2824164.78	416940.2406	2824143.99	416824.0041	2824177.606
22	46650	416855.64	2824116.66	416926.9626	2824096.901	416809.7953	2824127.115
23	46700	416845.31	2824067.76	416918.2341	2824055.038	416798.682	2824073.701
24	46750	416840.40	2824018.03	416914.3066	2824014.126	416803.375	2824017.995
25	46800	416841.04	2823968.06	416914.9484	2823972.047	416804.2345	2823964.083
26	46850	416847.21	2823918.47	416905.5105	2823927.638	416820.8834	2823912.371
27	46900	416858.84	2823869.86	416915.6161	2823885.946	416833.4185	2823860.657
28	46950	416875.79	2823822.85	416917.6726	2823839.373	416851.504	2823810.995
29	47000	416897.85	2823778.01	416937.7372	2823798.897	416874.9633	2823763.635
30	47050	416924.74	2823735.89	416961.8313	2823761.392	416894.8544	2823712.372
31	47100	416956.14	2823697.01	416982.9181	2823719.594	416928.9349	2823670.453
32	47150	416991.65	2823661.85	417015.8771	2823687.158	416937.5747	2823598.892
33	47200	417030.85	2823630.85	417051.8622	2823658.864	416984.6849	2823561.852
34	47250	417073.24	2823604.38	417088.2854	2823629.217	417053.8322	2823565.999
35	47300	417118.30	2823582.78	417130.6218	2823609.079	417103.0939	2823542.549
36	47350	417165.49	2823566.31	417174.5631	2823593.878	417160.0389	2823541.868
37	47400	417214.20	2823555.17	417224.4181	2823608.219	417211.3913	2823530.3
38	47450	417263.85	2823549.50	417268.2925	2823603.336	417260.4553	2823467.563
39	47500	417313.83	2823548.38	417315.2278	2823585.376	417315.0202	2823466.376
40	47550	417363.83	2823548.31	417365.2115	2823585.31	417365.0797	2823484.31
41	47600	417413.83	2823548.25	417415.2114	2823585.245	417415.0796	2823484.245

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
42	47650	417463.83	2823548.18	417465.2114	2823585.18	417465.124	2823518.18
43	47700	417513.83	2823548.12	417515.2244	2823595.114	417515.1239	2823518.115
44	47750	417563.83	2823548.05	417565.2244	2823595.049	417565.0952	2823496.049
45	47800	417613.83	2823547.99	417615.2126	2823585.984	417615.0951	2823495.984
46	47850	417663.83	2823547.92	417665.2125	2823585.919	417665.0951	2823495.919
47	47900	417713.83	2823547.86	417715.2125	2823585.853	417715.1277	2823520.853
48	47950	417763.83	2823547.65	417765.7036	2823582.627	417764.7442	2823520.635
49	48000	417813.77	2823545.31	417818.296	2823580.04	417812.6173	2823518.3
50	48050	417863.34	2823538.93	417870.6613	2823573.175	417860.0166	2823512.098
51	48100	417912.22	2823528.45	417920.3961	2823554.728	417906.7343	2823501.968
52	48150	417960.05	2823513.93	417970.323	2823539.467	417945.2311	2823467.204
53	48200	418006.51	2823495.49	418019.0987	2823519.979	417987.4459	2823450.334
54	48250	418051.30	2823473.30	418065.5449	2823496.867	418029.1816	2823429.562
55	48300	418095.01	2823449.01	418106.2225	2823468.519	418084.2041	2823429.274
56	48350	418138.61	2823424.55	418149.8284	2823444.054	418127.8099	2823404.809
57	48400	418182.22	2823400.08	418196.8322	2823423.416	418164.2938	2823365.42
58	48450	418225.82	2823375.62	418240.438	2823398.951	418207.8997	2823340.955
59	48500	418269.43	2823351.15	418284.0438	2823374.486	418251.5055	2823316.49
60	48550	418313.03	2823326.69	418327.6497	2823350.021	418295.1113	2823292.025
61	48600	418356.64	2823302.22	418371.2555	2823325.556	418338.7171	2823267.56
62	48650	418400.25	2823277.76	418419.0203	2823308.504	418389.1731	2823255.305
63	48700	418443.85	2823253.29	418459.6903	2823278.806	418432.7789	2823230.84
64	48750	418487.46	2823228.83	418503.2962	2823254.341	418476.3847	2823206.375
65	48800	418531.06	2823204.36	418546.902	2823229.877	418517.5441	2823177.55
66	48850	418574.67	2823179.90	418594.4222	2823212.389	418561.1499	2823153.085
67	48900	418618.28	2823155.43	418638.028	2823187.924	418600.8413	2823121.643
68	48950	418661.88	2823130.97	418681.6338	2823163.459	418644.4471	2823097.178
69	49000	418705.49	2823106.50	418725.2396	2823138.994	418688.0529	2823072.713
70	49050	418749.11	2823082.07	418761.8666	2823102.436	418731.9121	2823048.152
71	49100	418793.65	2823059.38	418804.543	2823080.809	418779.5412	2823024.073
72	49150	418840.45	2823041.89	418848.5398	2823064.523	418830.9425	2823005.074
73	49200	418889.07	2823030.37	418894.2226	2823053.842	418882.5554	2822981.78
74	49250	418938.75	2823025.00	418941.4133	2823053.908	418937.8337	2822975.99
75	49300	418988.74	2823024.37	418989.9334	2823053.381	418990.3113	2822975.381
76	49350	419038.74	2823024.62	419039.9328	2823053.623	419040.2283	2822992.624
77	49400	419088.74	2823024.86	419089.9322	2823053.865	419090.2277	2822992.866
78	49450	419138.74	2823025.10	419139.8977	2823061.107	419140.2272	2822993.108
79	49500	419188.74	2823025.34	419189.8971	2823061.349	419190.2266	2822993.35
80	49550	419238.74	2823025.59	419239.7996	2823081.592	419240.2599	2822986.593
81	49600	419288.74	2823025.83	419289.799	2823081.834	419290.2593	2822986.835
82	49650	419338.74	2823026.03	419340.2578	2823082.023	419339.8551	2822962.024
83	49700	419388.71	2823024.49	419393.3325	2823080.304	419386.268	2822960.512
84	49750	419438.48	2823019.84	419447.0013	2823075.199	419431.5757	2822956.197

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
85	49800	419487.87	2823012.09	419499.6926	2823066.835	419477.1585	2822948.97
86	49850	419536.68	2823001.27	419551.7608	2823055.206	419522.2006	2822938.908
87	49900	419584.71	2822987.43	419596.6217	2823020.359	419571.0847	2822940.336
88	49950	419631.79	2822970.61	419645.9758	2823002.631	419614.9042	2822924.59
89	50000	419677.73	2822950.88	419693.5989	2822981.919	419658.2034	2822905.907
90	50050	419722.34	2822928.33	419734.0509	2822949.277	419709.6151	2822904.512
91	50100	419765.46	2822903.03	419778.4544	2822923.205	419751.2704	2822880.054
92	50150	419806.92	2822875.10	419821.086	2822894.47	419791.3987	2822853.001
93	50200	419847.42	2822845.78	419864.0516	2822868.305	419827.6605	2822818.109
94	50250	419887.90	2822816.43	419904.5327	2822838.958	419868.1415	2822788.761
95	50300	419928.38	2822787.08	419945.0137	2822809.61	419908.6225	2822759.414
96	50350	419968.87	2822757.73	419985.4947	2822780.262	419951.4514	2822733.304
97	50400	420009.35	2822728.39	420027.1496	2822752.534	419994.2802	2822707.195
98	50450	420049.83	2822699.04	420067.6306	2822723.186	420034.7612	2822677.847
99	50500	420090.31	2822669.69	420108.1117	2822693.838	420075.2422	2822648.5
100	50550	420130.79	2822640.34	420148.5927	2822664.491	420115.7233	2822619.152
101	50600	420171.27	2822611.00	420200.8128	2822651.336	420156.2043	2822589.804
102	50650	420211.75	2822581.65	420232.4895	2822609.844	420189.0549	2822549.932
103	50700	420252.23	2822552.30	420272.9705	2822580.496	420229.5359	2822520.584
104	50750	420292.71	2822522.95	420325.1906	2822567.341	420270.0169	2822491.236
105	50800	420332.63	2822492.84	420366.3211	2822537.319	420309.8795	2822462.151
106	50850	420370.44	2822460.14	420408.5431	2822502.832	420346.106	2822432.564
107	50900	420405.82	2822424.83	420428.2371	2822446.299	420386.2368	2822406.299
108	50950	420438.58	2822387.08	420462.7089	2822406.943	420417.525	2822370.578
109	51000	420468.58	2822347.08	420500.4134	2822369.334	420440.7601	2822329.017
110	51050	420495.64	2822305.05	420528.2284	2822324.238	420465.4262	2822289.026
111	51100	420519.63	2822261.20	420552.0845	2822277.482	420486.9891	2822246.716
112	51150	420541.15	2822216.07	420573.3776	2822232.134	420508.1981	2822201.546
113	51200	420562.39	2822170.80	420584.6614	2822182.197	420529.44	2822156.282
114	51250	420583.63	2822125.54	420605.9033	2822136.934	420550.6818	2822111.019
115	51300	420604.88	2822080.28	420634.3873	2822095.069	420571.9237	2822065.755
116	51350	420626.12	2822035.01	420655.6291	2822049.805	420593.1655	2822020.492
117	51400	420647.36	2821989.75	420676.871	2822004.542	420623.46	2821979.477
118	51450	420668.60	2821944.49	420698.1128	2821959.278	420644.7019	2821934.213
119	51500	420689.84	2821899.22	420711.2072	2821910.191	420658.7016	2821885.551
120	51550	420711.09	2821853.96	420732.4491	2821864.928	420679.9434	2821840.287
121	51600	420732.33	2821808.70	420753.6909	2821819.664	420704.8063	2821796.723
122	51650	420753.57	2821763.43	420774.9327	2821774.401	420726.0482	2821751.46
123	51700	420774.81	2821718.17	420802.5115	2821732.111	420747.29	2821706.196
124	51750	420796.05	2821672.90	420823.7533	2821686.848	420775.774	2821664.331
125	51800	420817.29	2821627.64	420844.9951	2821641.584	420797.0158	2821619.068
126	51850	420838.54	2821582.38	420866.237	2821596.321	420792.9101	2821561.909
127	51900	420859.78	2821537.11	420891.0999	2821552.757	420814.152	2821516.646

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
128	51950	420881.02	2821491.85	420912.3417	2821507.493	420835.3938	2821471.382
129	52000	420902.26	2821446.59	420943.5416	2821466.903	420843.9619	2821420.171
130	52050	420923.50	2821401.32	420964.7834	2821421.639	420865.2037	2821374.907
131	52100	420944.75	2821356.06	420977.8778	2821372.552	420886.4455	2821329.644
132	52150	420965.99	2821310.80	420999.1196	2821327.289	420907.6874	2821284.38
133	52200	420987.23	2821265.53	421009.498	2821276.928	420945.2246	2821246.763
134	52250	421009.38	2821220.72	421030.9546	2821233.387	420968.5408	2821199.541
135	52300	421035.95	2821178.40	421055.7871	2821193.638	421012.6805	2821162.803
136	52350	421067.59	2821139.72	421085.3678	2821157.315	421046.4419	2821121.345
137	52400	421103.80	2821105.29	421119.2462	2821124.963	421085.1086	2821084.421
138	52450	421144.02	2821075.64	421156.8939	2821097.087	421128.0771	2821052.605
139	52500	421187.62	2821051.24	421197.7232	2821074.122	421173.8073	2821024.594
140	52550	421233.93	2821032.46	421241.097	2821056.427	421223.5426	2821004.304
141	52600	421282.21	2821019.61	421295.2723	2821088.382	421273.4343	2820980.571
142	52650	421331.64	2821012.13	421339.293	2821081.711	421325.9301	2820972.526
143	52700	421381.28	2821006.15	421383.0564	2821028.099	421376.4935	2820973.492
144	52750	421430.92	2821000.19	421432.6992	2821022.133	421426.1363	2820967.526
145	52800	421480.56	2820994.22	421482.342	2821016.167	421476.495	2820967.517
146	52850	421530.21	2820988.26	421531.9847	2821010.2	421526.1377	2820961.551
147	52900	421579.85	2820982.29	421582.4627	2821011.184	421575.7805	2820955.584
148	52950	421629.49	2820976.32	421632.1055	2821005.218	421625.1846	2820947.632
149	53000	421679.14	2820970.36	421683.6575	2821015.137	421674.8274	2820941.666
150	53050	421728.78	2820964.39	421733.3002	2821009.171	421724.4701	2820935.7
151	53100	421778.42	2820958.42	421782.943	2821003.205	421772.323	2820914.841
152	53150	421828.06	2820952.46	421832.5857	2820997.238	421821.9657	2820908.874
153	53200	421877.71	2820946.49	421880.0806	2820973.401	421872.5631	2820910.851
154	53250	421927.35	2820940.53	421929.7234	2820967.434	421922.2059	2820904.884
155	53300	421976.99	2820934.56	421979.3661	2820961.468	421973.0419	2820908.847
156	53350	422026.63	2820928.59	422029.0089	2820955.502	422022.6846	2820902.88
157	53400	422076.28	2820922.63	422078.6517	2820949.535	422072.3274	2820896.914
158	53450	422125.92	2820916.66	422128.2944	2820943.569	422121.9701	2820890.948
159	53500	422175.56	2820910.69	422177.9372	2820937.603	422171.6129	2820884.982
160	53550	422225.21	2820904.73	422227.5799	2820931.637	422221.2557	2820879.015
161	53600	422274.85	2820898.76	422276.3874	2820918.72	422270.8984	2820873.049
162	53650	422324.49	2820892.79	422326.0302	2820912.754	422320.5412	2820867.083
163	53700	422374.13	2820886.83	422376.7575	2820906.657	422371.2685	2820860.986
164	53750	422423.78	2820880.86	422427.2356	2820907.641	422419.9567	2820847.077
165	53800	422473.42	2820874.90	422476.8783	2820901.675	422470.7927	2820851.039
166	53850	422523.06	2820868.93	422526.5211	2820895.708	422520.4355	2820845.073
167	53900	422572.71	2820862.96	422575.6865	2820885.771	422570.0782	2820839.107
168	53950	422622.35	2820856.99	422625.3677	2820879.795	422619.6797	2820833.14
169	54000	422671.78	2820849.57	422676.3417	2820872.11	422667.5026	2820825.949
170	54050	422720.46	2820838.21	422728.1577	2820865.126	422713.4868	2820812.121

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
171	54100	422768.02	2820822.84	422777.8703	2820849.049	422758.967	2820797.399
172	54150	422814.15	2820803.58	422829.803	2820840.407	422803.586	2820778.711
173	54200	422859.26	2820782.02	422875.385	2820818.647	422841.128	2820740.804
174	54250	422904.33	2820760.36	422926.498	2820810.729	422886.195	2820719.15
175	54300	422949.40	2820738.71	422971.566	2820789.075	422931.263	2820697.495
176	54350	422994.46	2820717.05	423016.633	2820767.421	422970.285	2820662.104
177	54400	423039.53	2820695.40	423061.701	2820745.766	423015.353	2820640.45
178	54450	423084.60	2820673.74	423109.59	2820730.522	423060.42	2820618.795
179	54500	423129.67	2820652.09	423154.657	2820708.868	423105.488	2820597.141
180	54550	423174.73	2820630.44	423199.725	2820687.214	423150.555	2820575.486
181	54600	423219.80	2820608.78	423249.226	2820675.633	423187.563	2820535.516
182	54650	423264.87	2820587.13	423294.293	2820653.978	423232.63	2820513.862
183	54700	423309.94	2820565.47	423339.361	2820632.324	423277.698	2820492.207
184	54750	423355.00	2820543.82	423384.428	2820610.67	423322.765	2820470.553
185	54800	423400.16	2820522.36	423428.119	2820589.845	423369.54	2820448.408
186	54850	423446.65	2820504.03	423466.988	2820574.213	423424.394	2820427.176
187	54900	423495.03	2820491.53	423503.485	2820544.918	423481.747	2820407.563
188	54950	423544.59	2820485.16	423546.323	2820539.187	423541.879	2820400.193
189	55000	423594.56	2820485.02	423589.541	2820538.841	423600.788	2820418.303
190	55050	423644.16	2820491.08	423632.809	2820543.904	423658.25	2820425.54
191	55100	423693.13	2820501.16	423680.04	2820553.576	423705.987	2820449.708
192	55150	423742.02	2820511.65	423728.927	2820564.07	423754.873	2820460.202
193	55200	423790.90	2820522.14	423782.178	2820557.091	423802.062	2820477.491
194	55250	423839.79	2820532.64	423831.064	2820567.585	423850.948	2820487.985
195	55300	423888.68	2820543.13	423879.95	2820578.079	423898.38	2820504.304
196	55350	423937.56	2820553.63	423928.837	2820588.573	423942.901	2820532.271
197	55400	423986.45	2820564.12	423979.9663	2820595.457	423991.2998	2820542.66
198	55450	424035.34	2820574.61	424028.8527	2820605.951	424040.8158	2820550.221
199	55500	424084.22	2820585.10	424079.0773	2820610.586	424089.6301	2820560.69
200	55550	424133.42	2820593.96	424130.3209	2820619.777	424136.8602	2820569.198
201	55600	424183.27	2820597.29	424183.42	2820623.291	424183.6023	2820572.291
202	55650	424233.16	2820594.38	424237.2696	2820626.113	424230.3654	2820569.532
203	55700	424282.34	2820585.51	424287.8907	2820608.862	424275.2622	2820553.278
204	55750	424330.99	2820573.98	424336.8031	2820597.266	424323.5538	2820541.827
205	55800	424379.62	2820562.36	424385.4336	2820585.643	424373.3465	2820535.068
206	55850	424428.25	2820550.73	424434.0641	2820574.021	424421.977	2820523.446
207	55900	424476.88	2820539.11	424483.6244	2820566.289	424470.6075	2820511.823
208	55950	424525.51	2820527.49	424532.2549	2820554.667	424520.4002	2820505.064
209	56000	424574.14	2820515.87	424580.8853	2820543.045	424569.0307	2820493.442
210	56050	424622.78	2820504.25	424629.5158	2820531.423	424616.7314	2820477.929
211	56100	424671.41	2820492.62	424678.1463	2820519.801	424665.3619	2820466.307
212	56150	424720.04	2820481.00	424726.7768	2820508.178	424713.9923	2820454.685
213	56200	424768.67	2820469.38	424775.4073	2820496.556	424762.6228	2820443.063

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
214	56250	424817.39	2820458.17	424823.2374	2820485.554	424812.2144	2820431.67
215	56300	424866.82	2820450.83	424869.4504	2820478.707	424864.7508	2820423.908
216	56350	424916.77	2820449.65	424915.9077	2820477.636	424918.5105	2820411.687
217	56400	424966.48	2820454.70	424962.136	2820482.365	424972.9407	2820417.256
218	56450	425015.18	2820465.92	425002.8473	2820508.155	425023.1123	2820440.109
219	56500	425062.09	2820483.11	425044.5923	2820523.486	425073.1828	2820458.497
220	56550	425106.56	2820505.91	425094.7784	2820526.82	425120.2587	2820482.642
221	56600	425149.40	2820531.70	425137.1167	2820552.322	425163.6458	2820508.765
222	56650	425192.10	2820557.71	425179.8195	2820578.331	425206.3487	2820534.774
223	56700	425234.80	2820583.72	425222.5223	2820604.34	425249.0515	2820560.783
224	56750	425277.51	2820609.73	425262.1041	2820635.473	425291.7543	2820586.792
225	56800	425320.21	2820635.74	425307.4078	2820657.212	425334.4572	2820612.801
226	56850	425362.91	2820661.75	425350.1107	2820683.221	425377.16	2820638.81
227	56900	425405.61	2820687.75	425392.8135	2820709.23	425419.8629	2820664.819
228	56950	425448.32	2820713.76	425435.5164	2820735.239	425462.5657	2820690.828
229	57000	425491.02	2820739.77	425478.2192	2820761.248	425505.2686	2820716.837
230	57050	425533.72	2820765.78	425520.9221	2820787.257	425547.9714	2820742.846
231	57100	425576.43	2820791.79	425563.6249	2820813.266	425590.6742	2820768.855
232	57150	425619.18	2820817.72	425603.062	2820845.362	425633.1555	2820794.614
233	57200	425662.99	2820841.78	425651.6227	2820865.164	425673.0079	2820822.191
234	57250	425708.62	2820862.19	425699.2397	2820886.434	425716.9737	2820841.83
235	57300	425755.79	2820878.72	425748.4618	2820903.666	425767.6566	2820840.519
236	57350	425804.18	2820891.27	425796.005	2820930.429	425812.8195	2820852.216
237	57400	425853.44	2820899.75	425848.5534	2820939.454	425858.7994	2820860.113
238	57450	425903.24	2820904.11	425902.2116	2820932.087	425904.5557	2820880.139
239	57500	425953.22	2820904.30	425954.5294	2820932.266	425952.5414	2820880.304
240	57550	426003.05	2820900.33	426006.6806	2820928.09	426000.0105	2820873.496
241	57600	426052.37	2820892.22	426058.3032	2820919.587	426047.112	2820865.738
242	57650	426100.85	2820880.04	426109.0389	2820906.817	426093.4043	2820854.086
243	57700	426148.15	2820863.87	426158.5356	2820889.869	426138.5662	2820838.622
244	57750	426193.93	2820843.81	426206.4499	2820868.859	426182.2841	2820819.452
245	57800	426237.93	2820820.09	426252.2525	2820844.148	426224.5272	2820796.647
246	57850	426280.90	2820794.51	426295.4672	2820818.424	426267.2484	2820771.214
247	57900	426323.81	2820768.86	426338.3846	2820792.77	426310.1657	2820745.561
248	57950	426366.73	2820743.21	426381.3019	2820767.117	426353.0831	2820719.908
249	58000	426409.65	2820717.55	426421.6539	2820737.171	426396.0005	2820694.254
250	58050	426452.57	2820691.90	426464.5713	2820711.518	426438.9178	2820668.601
251	58100	426495.48	2820666.25	426507.4887	2820685.865	426481.8352	2820642.947
252	58150	426538.40	2820640.59	426550.406	2820660.211	426524.7526	2820617.294
253	58200	426581.32	2820614.94	426596.4018	2820639.708	426567.6699	2820591.64
254	58250	426624.24	2820589.28	426639.3127	2820614.058	426610.5936	2820565.983
255	58300	426667.48	2820564.20	426681.7549	2820589.446	426654.6012	2820540.47
256	58350	426711.70	2820540.86	426728.4917	2820573.836	426701.1614	2820519.301

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
257	58400	426756.76	2820519.20	426772.7527	2820552.566	426746.7449	2820497.388
258	58450	426801.99	2820497.88	426811.5851	2820517.679	426791.9727	2820476.07
259	58500	426847.22	2820476.56	426856.8128	2820496.361	426835.495	2820451.134
260	58550	426892.44	2820455.25	426905.4514	2820482.28	426880.7227	2820429.816
261	58600	426937.67	2820433.93	426950.6792	2820460.962	426925.9505	2820408.498
262	58650	426982.90	2820412.61	426995.9069	2820439.644	426970.3255	2820385.371
263	58700	427028.13	2820391.29	427041.1347	2820418.326	427015.5532	2820364.053
264	58750	427073.36	2820369.97	427086.3624	2820397.009	427061.6337	2820344.544
265	58800	427118.58	2820348.66	427131.5902	2820375.691	427106.8614	2820323.227
266	58850	427164.16	2820328.10	427174.255	2820352.06	427153.7394	2820302.109
267	58900	427211.44	2820311.94	427218.5142	2820336.957	427203.5059	2820281.969
268	58950	427260.36	2820301.79	427264.2654	2820327.495	427256.2299	2820271.064
269	59000	427310.15	2820297.44	427311.7693	2820326.391	427308.9207	2820266.459
270	59050	427360.12	2820295.50	427361.4327	2820324.475	427359.2032	2820264.516
271	59100	427410.08	2820293.65	427411.3982	2820322.617	427407.9424	2820229.681
272	59150	427460.05	2820291.79	427461.3637	2820320.759	427457.9078	2820227.823
273	59200	427510.01	2820289.93	427511.3291	2820318.901	427507.8733	2820225.965
274	59250	427559.98	2820288.07	427561.2946	2820317.043	427559.1765	2820260.082
275	59300	427609.94	2820286.21	427611.2601	2820315.185	427609.142	2820258.224
276	59350	427659.91	2820284.36	427661.2255	2820313.327	427659.3304	2820262.362
277	59400	427709.87	2820282.50	427711.8227	2820328.457	427709.2959	2820260.504
278	59450	427759.84	2820280.69	427761.4724	2820326.663	427759.4151	2820258.694
279	59500	427809.83	2820279.74	427810.4171	2820325.738	427809.905	2820257.74
280	59550	427859.83	2820279.93	427859.3702	2820325.925	427860.6315	2820242.935
281	59600	427909.81	2820281.18	427908.6705	2820327.169	427911.1645	2820244.207
282	59650	427959.79	2820282.69	427959.1287	2820312.679	427961.142	2820245.709
283	59700	428009.77	2820284.19	428009.1061	2820314.182	428011.1194	2820247.212
284	59750	428059.75	2820285.69	428059.0835	2820315.684	428060.8564	2820256.711
285	59800	428109.72	2820287.19	428109.061	2820317.186	428110.8338	2820258.213
286	59850	428159.70	2820288.70	428158.7379	2820328.684	428160.8113	2820259.715
287	59900	428209.68	2820290.18	428208.8917	2820330.173	428210.6618	2820261.196
288	59950	428259.66	2820289.92	428261.4815	2820318.86	428258.4878	2820263.942
289	60000	428309.29	2820284.12	428314.7053	2820312.607	428304.8881	2820258.49
290	60050	428357.81	2820272.17	428366.1347	2820297.858	428350.2466	2820247.296
291	60100	428404.46	2820254.27	428415.9236	2820278.721	428393.8556	2820230.534
292	60150	428448.52	2820230.70	428462.9382	2820253.526	428435.0346	2820208.466
293	60200	428489.29	2820201.81	428503.3022	2820218.775	428461.2019	2820166.656
294	60250	428526.15	2820168.07	428542.1612	2820183.154	428493.8915	2820136.69
295	60300	428558.51	2820130.00	428576.2767	2820142.966	428539.4171	2820115.446
296	60350	428585.87	2820088.18	428608.5934	2820100.813	428565.1118	2820076.128
297	60400	428607.80	2820043.29	428631.924	2820052.984	428585.704	2820033.913
298	60450	428623.96	2819996.01	428649.1096	2820002.621	428597.9783	2819988.671
299	60500	428634.28	2819947.11	428659.9895	2819950.979	428607.6545	2819942.61

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
300	60550	428641.45	2819897.63	428667.2277	2819901.014	428614.745	2819893.628
301	60600	428648.42	2819848.11	428669.2448	2819850.805	428621.7133	2819844.116
302	60650	428655.38	2819798.60	428676.2132	2819801.293	428628.6816	2819794.604
303	60700	428662.36	2819749.09	428687.1419	2819752.398	428639.6263	2819745.596
304	60750	428670.81	2819699.82	428695.2807	2819704.938	428648.3922	2819694.668
305	60800	428684.50	2819651.77	428708.1418	2819659.894	428662.8996	2819643.858
306	60850	428704.07	2819605.79	428743.4958	2819625.335	428671.1189	2819588.968
307	60900	428729.23	2819562.62	428765.9052	2819586.923	428698.6271	2819541.816
308	60950	428759.57	2819522.92	428792.9288	2819551.605	428738.5915	2819504.366
309	61000	428794.62	2819487.31	428813.4729	2819508.01	428776.1209	2819466.287
310	61050	428833.84	2819456.35	428849.9638	2819479.238	428818.1051	2819433.183
311	61100	428876.61	2819430.52	428889.7571	2819455.24	428860.1934	2819398.477
312	61150	428922.27	2819410.22	428932.2831	2819436.37	428909.9094	2819376.408
313	61200	428969.81	2819394.76	428982.629	2819436.853	428959.7396	2819360.198
314	61250	429017.73	2819380.50	429030.5113	2819422.604	429007.6958	2819345.926
315	61300	429065.66	2819366.24	429078.4348	2819408.344	429052.7673	2819322.082
316	61350	429113.58	2819351.98	429126.3583	2819394.084	429100.6908	2819307.822
317	61400	429161.50	2819337.72	429171.715	2819371.198	429147.7587	2819290.687
318	61450	429209.43	2819323.46	429219.6385	2819356.939	429195.6822	2819276.427
319	61500	429257.35	2819309.20	429267.562	2819342.679	429240.1833	2819250.666
320	61550	429305.27	2819294.94	429314.0595	2819323.627	429288.1068	2819236.406
321	61600	429353.20	2819280.68	429361.983	2819309.367	429342.8749	2819245.15
322	61650	429401.12	2819266.42	429409.9065	2819295.107	429390.7984	2819230.89
323	61700	429448.93	2819251.78	429458.5613	2819280.197	429437.5558	2819216.575
324	61750	429495.44	2819233.52	429515.9255	2819276.928	429480.035	2819199.877
325	61800	429539.34	2819209.66	429565.0799	2819250.175	429523.5874	2819184.128
326	61850	429579.93	2819180.51	429610.5159	2819217.503	429561.112	2819157.143
327	61900	429616.56	2819146.53	429651.5239	2819179.421	429594.9803	2819125.692
328	61950	429648.68	2819108.25	429685.0488	2819134.744	429614.1962	2819082.553
329	62000	429675.77	2819066.26	429715.1575	2819088.016	429638.3508	2819045.065
330	62050	429697.41	2819021.22	429739.2053	2819037.898	429657.6431	2819004.858
331	62100	429713.27	2818973.84	429742.2785	2818981.456	429677.6164	2818963.93
332	62150	429723.10	2818924.85	429752.8376	2818928.72	429686.469	2818919.543
333	62200	429726.74	2818875.02	429748.7302	2818874.997	429689.7362	2818874.401
334	62250	429724.14	2818825.12	429745.9541	2818822.306	429697.2901	2818828.034
335	62300	429715.34	2818775.93	429736.625	2818770.372	429689.0827	2818782.23
336	62350	429700.48	2818728.22	429732.07	2818715.648	429675.2361	2818737.805
337	62400	429679.78	2818682.74	429709.7455	2818666.685	429653.1275	2818696.512
338	62450	429653.58	2818640.20	429681.2611	2818620.466	429628.8823	2818657.242
339	62500	429622.32	2818601.22	429644.4519	2818580.965	429599.8566	2818621.106
340	62550	429588.00	2818564.85	429609.4596	2818543.889	429567.6466	2818584.085
341	62600	429553.35	2818528.81	429574.8084	2818507.843	429532.9954	2818548.039
342	62650	429518.70	2818492.76	429544.4826	2818467.64	429498.3441	2818511.993

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
343	62700	429484.05	2818456.72	429509.8313	2818431.594	429459.3674	2818480.106
344	62750	429449.40	2818420.67	429469.4127	2818401.093	429424.7161	2818444.06
345	62800	429414.74	2818384.63	429434.7615	2818365.047	429392.9485	2818405.242
346	62850	429380.09	2818348.58	429400.1102	2818329.001	429358.2972	2818369.197
347	62900	429345.44	2818312.54	429365.459	2818292.956	429323.646	2818333.151
348	62950	429310.79	2818276.49	429330.8077	2818256.91	429288.9947	2818297.105
349	63000	429276.14	2818240.44	429296.1564	2818220.864	429254.3435	2818261.06
350	63050	429241.49	2818204.40	429265.8307	2818180.66	429223.2968	2818221.549
351	63100	429206.91	2818168.29	429231.5378	2818144.846	429188.5082	2818185.213
352	63150	429174.27	2818130.43	429196.3311	2818113.171	429147.9671	2818150.345
353	63200	429146.35	2818089.00	429170.4193	2818074.674	429125.5037	2818100.873
354	63250	429123.81	2818044.40	429149.502	2818033.25	429101.6223	2818053.536
355	63300	429107.01	2817997.34	429133.9018	2817989.545	429083.8344	2818003.589
356	63350	429096.20	2817948.56	429123.8105	2817943.844	429064.5802	2817953.424
357	63400	429091.57	2817898.80	429121.5478	2817897.568	429059.5857	2817899.618
358	63450	429093.17	2817848.86	429123.0667	2817851.442	429057.3594	2817845.233
359	63500	429100.98	2817799.51	429130.311	2817805.863	429065.9252	2817791.364
360	63550	429114.89	2817751.52	429137.5341	2817759.49	429081.1465	2817738.986
361	63600	429134.67	2817705.63	429156.1169	2817716.413	429102.7882	2817688.916
362	63650	429160.02	2817662.57	429180.1137	2817675.706	429136.8813	2817646.81
363	63700	429190.54	2817623.01	429211.8214	2817641.214	429169.5932	2817604.44
364	63750	429225.75	2817587.56	429244.5548	2817608.32	429200.0221	2817558.262
365	63800	429265.11	2817556.77	429281.1256	2817579.754	429243.3091	2817524.45
366	63850	429308.00	2817531.14	429320.9685	2817555.963	429290.4765	2817496.304
367	63900	429353.51	2817510.47	429362.162	2817530.701	429338.8191	2817474.344
368	63950	429399.78	2817491.52	429408.3416	2817511.786	429390.9258	2817469.211
369	64000	429446.06	2817472.58	429454.6503	2817492.839	429437.1669	2817450.291
370	64050	429491.80	2817452.41	429504.0274	2817476.481	429481.3451	2817430.803
371	64100	429535.13	2817427.54	429550.2117	2817449.925	429522.1146	2817407.365
372	64150	429575.03	2817397.46	429592.832	2817417.751	429559.5585	2817379.1
373	64200	429610.87	2817362.64	429631.1032	2817380.509	429589.4774	2817343.051
374	64250	429642.09	2817323.62	429664.43	2817338.783	429618.3845	2817306.911
375	64300	429668.20	2817281.02	429705.308	2817300.684	429632.852	2817262.289
376	64350	429688.79	2817235.49	429728.063	2817250.378	429651.386	2817221.315
377	64400	429703.55	2817187.75	429749.23	2817198.802	429664.668	2817178.35
378	64450	429712.24	2817138.55	429758.94	2817143.814	429665.533	2817133.28
379	64500	429714.72	2817088.64	429761.72	2817088.045	429667.728	2817089.239
380	64550	429711.80	2817038.74	429753.642	2817035.091	429671.952	2817042.213
381	64600	429707.35	2816988.94	429749.18	2816985.191	429667.508	2816992.506
382	64650	429702.89	2816939.14	429750.696	2816934.855	429663.047	2816942.706
383	64700	429698.43	2816889.34	429746.235	2816885.054	429649.622	2816893.708
384	64750	429693.97	2816839.54	429765.678	2816833.112	429645.161	2816843.908
385	64800	429689.50	2816789.74	429761.217	2816783.312	429615.799	2816796.337

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
386	64850	429685.04	2816739.93	429762.732	2816732.976	429611.338	2816746.537
387	64900	429680.58	2816690.13	429758.271	2816683.175	429606.878	2816696.736
388	64950	429676.12	2816640.33	429753.81	2816633.374	429602.417	2816646.936
389	65000	429671.66	2816590.53	429749.35	2816583.574	429597.956	2816597.135
390	65050	429667.20	2816540.73	429744.889	2816533.773	429593.495	2816547.334
391	65100	429662.74	2816490.93	429740.428	2816483.973	429589.034	2816497.534
392	65150	429658.34	2816441.13	429726.111	2816435.539	429596.55	2816446.219
393	65200	429654.73	2816391.26	429709.625	2816387.836	429592.852	2816395.114
394	65250	429652.09	2816341.33	429707.032	2816338.743	429595.155	2816344.005
395	65300	429649.74	2816291.38	429704.682	2816288.798	429592.806	2816294.06
396	65350	429647.39	2816241.44	429687.35	2816239.558	429593.454	2816243.975
397	65400	429645.04	2816191.49	429685.001	2816189.614	429591.105	2816194.03
398	65450	429642.70	2816141.55	429682.652	2816139.669	429588.755	2816144.085
399	65500	429640.35	2816091.60	429680.302	2816089.724	429586.406	2816094.14
400	65550	429638.00	2816041.66	429677.953	2816039.779	429584.057	2816044.196
401	65600	429635.65	2815991.71	429675.604	2815989.834	429581.708	2815994.251
402	65650	429633.30	2815941.77	429673.255	2815939.89	429579.359	2815944.306
403	65700	429630.95	2815891.82	429670.906	2815889.945	429577.01	2815894.361
404	65750	429628.60	2815841.88	429668.557	2815840	429574.661	2815844.416
405	65800	429626.25	2815791.93	429666.208	2815790.055	429572.311	2815794.472
406	65850	429623.90	2815741.99	429663.8473	2815739.872	429593.9246	2815743.161
407	65900	429621.55	2815692.05	429661.4982	2815689.927	429591.5755	2815693.216
408	65950	429619.20	2815642.10	429659.1491	2815639.983	429597.2176	2815642.896
409	66000	429616.90	2815592.15	429652.8591	2815590.486	429594.9048	2815592.788
410	66050	429616.55	2815542.17	429652.5371	2815543.14	429594.5699	2815541.188
411	66100	429620.28	2815492.32	429650.1141	2815495.515	429590.5077	2815488.653
412	66150	429626.70	2815442.73	429656.4688	2815446.452	429596.9922	2815438.544
413	66200	429633.29	2815393.17	429663.0586	2815396.888	429603.582	2815388.981
414	66250	429639.88	2815343.61	429669.6483	2815347.324	429616.1194	2815340.208
415	66300	429646.47	2815294.04	429676.2381	2815297.761	429622.7091	2815290.644
416	66350	429653.06	2815244.48	429682.8278	2815248.197	429618.3948	2815239.63
417	66400	429659.65	2815194.92	429709.2431	2815201.269	429624.9846	2815190.066
418	66450	429666.24	2815145.35	429715.8329	2815151.705	429631.5743	2815140.502
419	66500	429672.83	2815095.79	429722.4226	2815102.141	429638.1641	2815090.939
420	66550	429679.42	2815046.22	429741.899	2815054.291	429631.8672	2815039.661
421	66600	429686.01	2814996.66	429748.4887	2815004.727	429638.457	2814990.097
422	66650	429692.60	2814947.10	429755.0784	2814955.163	429663.881	2814943.038
423	66700	429698.93	2814897.50	429744.663	2814902.42	429670.136	2814894.011
424	66750	429703.51	2814847.71	429749.4081	2814850.725	429679.583	2814845.78
425	66800	429706.01	2814797.78	429729.0055	2814798.209	429682.0253	2814796.844
426	66850	429706.61	2814747.78	429729.6096	2814747.623	429682.6099	2814747.466
427	66900	429706.78	2814697.79	429729.7773	2814697.624	429676.7776	2814697.446
428	66950	429706.92	2814647.79	429729.9153	2814647.502	429676.9154	2814647.606

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
429	67000	429705.44	2814597.81	429733.3734	2814595.878	429675.4802	2814599.397
430	67050	429700.86	2814548.03	429728.6221	2814544.355	429671.0618	2814551.483
431	67100	429693.21	2814498.63	429732.508	2814491.184	429655.786	2814505.246
432	67150	429683.96	2814449.49	429723.2203	2814441.838	429646.5741	2814456.308
433	67200	429674.68	2814400.36	429706.0838	2814394.19	429631.4029	2814408.289
434	67250	429665.41	2814351.23	429696.8085	2814345.058	429635.8846	2814356.559
435	67300	429656.13	2814302.10	429687.5331	2814295.926	429626.6093	2814307.427
436	67350	429646.86	2814252.96	429683.171	2814245.866	429617.3339	2814258.295
437	67400	429638.37	2814203.70	429674.9996	2814198.451	429608.6163	2814207.52
438	67450	429634.07	2814153.90	429671.0348	2814152.34	429595.0834	2814155.059
439	67500	429634.75	2814103.93	429671.6931	2814106.064	429595.8498	2814101.186
440	67550	429640.43	2814054.27	429683.8739	2814061.229	429601.9906	2814047.66
441	67600	429651.02	2814005.43	429693.5898	2814016.577	429608.5834	2813993.819
442	67650	429665.07	2813957.44	429709.1908	2813970.459	429623.0014	2813944.548
443	67700	429679.46	2813909.56	429723.5859	2813922.576	429637.3965	2813896.665
444	67750	429693.86	2813861.68	429737.981	2813874.693	429665.1988	2813852.812
445	67800	429708.26	2813813.79	429746.5614	2813825.311	429679.594	2813804.929
446	67850	429722.65	2813765.91	429760.9566	2813777.428	429693.9891	2813757.046
447	67900	429737.05	2813718.03	429775.3517	2813729.545	429708.3842	2813709.163
448	67950	429750.94	2813670.00	429789.6558	2813680.04	429714.1526	2813660.463
449	68000	429760.63	2813620.98	429798.3272	2813625.766	429730.9234	2813616.78
450	68050	429764.15	2813571.14	429802.1552	2813571.185	429734.1572	2813570.674
451	68100	429761.44	2813521.24	429799.1487	2813516.554	429731.6174	2813524.524
452	68150	429752.52	2813472.08	429785.4714	2813463.684	429718.4899	2813480.251
453	68200	429737.55	2813424.41	429769.1923	2813411.971	429704.7989	2813436.76
454	68250	429716.74	2813378.98	429750.9987	2813360.327	429685.7925	2813395.315
455	68300	429690.45	2813336.49	429722.204	2813313.847	429661.6898	2813356.438
456	68350	429660.34	2813296.58	429691.0077	2813272.482	429632.5398	2813317.842
457	68400	429629.69	2813257.07	429650.878	2813240.332	429593.9903	2813284.466
458	68450	429599.05	2813217.56	429620.2295	2813200.827	429563.3418	2813244.961
459	68500	429568.40	2813178.06	429598.2722	2813154.579	429539.8043	2813199.939
460	68550	429537.75	2813138.55	429567.6237	2813115.074	429509.1558	2813160.433
461	68600	429507.10	2813099.04	429536.9753	2813075.568	429478.5074	2813120.928
462	68650	429476.76	2813059.30	429507.3341	2813036.75	429444.2786	2813082.663
463	68700	429449.37	2813017.50	429503.6036	2812985.469	429414.7207	2813037.516
464	68750	429426.28	2812973.18	429483.4424	2812946.719	429389.8076	2812989.632
465	68800	429407.73	2812926.77	429453.0588	2812911.006	429369.887	2812939.739
466	68850	429393.90	2812878.74	429440.5842	2812867.581	429354.9575	2812887.868
467	68900	429384.94	2812829.57	429408.7088	2812826.232	429355.1626	2812833.218
468	68950	429380.63	2812779.77	429404.5829	2812778.173	429350.6697	2812781.234
469	69000	429377.92	2812729.84	429411.8611	2812727.77	429347.9547	2812731.229
470	69050	429375.22	2812679.91	429409.1587	2812677.843	429345.2522	2812681.302
471	69100	429372.52	2812629.99	429394.973	2812628.537	429350.0388	2812630.97

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
472	69150	429369.82	2812580.06	429392.2706	2812578.61	429347.3364	2812581.043
473	69200	429367.11	2812530.13	429389.5681	2812528.684	429344.6339	2812531.116
474	69250	429364.41	2812480.21	429386.8657	2812478.757	429341.9315	2812481.189
475	69300	429361.66	2812430.28	429384.1014	2812428.647	429339.1889	2812431.45
476	69350	429356.77	2812380.54	429412.2004	2812372.532	429322.0808	2812385.16
477	69400	429347.80	2812331.36	429402.3691	2812318.773	429320.4406	2812337.313
478	69450	429334.77	2812283.11	429388.0971	2812266.019	429307.9962	2812291.314
479	69500	429317.76	2812236.10	429369.4836	2812214.635	429278.8132	2812251.822
480	69550	429297.03	2812190.61	429347.2157	2812165.76	429259.2137	2812208.884
481	69600	429274.96	2812145.75	429304.4629	2812130.967	429247.9377	2812158.786
482	69650	429252.88	2812100.89	429282.3843	2812086.106	429225.8591	2812113.925
483	69700	429230.80	2812056.03	429255.8196	2812043.452	429187.6304	2812077.012
484	69750	429208.72	2812011.17	429233.741	2811998.591	429165.5518	2812032.15
485	69800	429186.64	2811966.31	429211.6285	2811953.679	429158.7488	2811979.846
486	69850	429163.13	2811922.19	429187.043	2811907.627	429136.3997	2811937.897
487	69900	429134.89	2811880.97	429166.2524	2811856.145	429110.3257	2811899.885
488	69950	429101.73	2811843.59	429129.7532	2811815.049	429074.0781	2811871.096
489	70000	429064.17	2811810.64	429088.4151	2811778.824	429040.1621	2811841.375
490	70050	429022.92	2811782.42	429034.5917	2811763.187	429010.8474	2811801.413
491	70100	428980.16	2811756.51	428991.654	2811737.173	428968.4103	2811775.705
492	70150	428937.34	2811730.69	428957.8797	2811696.362	428914.4914	2811768.289
493	70200	428894.56	2811704.81	428915.3957	2811670.669	428871.378	2811742.212
494	70250	428853.09	2811676.92	428877.1194	2811644.945	428826.407	2811711.91
495	70300	428815.20	2811644.34	428838.1459	2811620.619	428791.3531	2811668.572
496	70350	428781.68	2811607.29	428807.398	2811586.614	428754.9919	2811628.359
497	70400	428753.03	2811566.35	428781.1297	2811549.041	428727.343	2811581.843
498	70450	428729.71	2811522.15	428759.7507	2811508.486	428702.2941	2811534.326
499	70500	428712.09	2811475.40	428745.5068	2811464.995	428683.3647	2811484.057
500	70550	428700.43	2811426.81	428734.8841	2811420.654	428673.8058	2811431.305
501	70600	428694.92	2811377.15	428729.8725	2811375.335	428667.9429	2811378.288
502	70650	428695.64	2811327.18	428730.5507	2811329.726	428668.7335	2811324.968
503	70700	428701.36	2811277.52	428732.101	2811281.51	428670.6547	2811273.242
504	70750	428708.03	2811227.97	428738.7683	2811231.956	428677.322	2811223.689
505	70800	428714.69	2811178.41	428745.4356	2811182.403	428686.9625	2811174.535
506	70850	428721.36	2811128.86	428752.1029	2811132.849	428693.6298	2811124.982
507	70900	428728.03	2811079.31	428758.7702	2811083.296	428700.2971	2811075.428
508	70950	428734.34	2811029.71	428765.1857	2811032.753	428706.499	2811026.682
509	71000	428737.42	2810979.82	428768.4129	2810980.284	428709.4244	2810979.119
510	71050	428736.33	2810929.84	428770.2554	2810927.538	428700.3968	2810931.985
511	71100	428731.09	2810880.13	428764.7072	2810875.013	428695.4612	2810885.259
512	71150	428721.81	2810831.01	428754.9662	2810823.478	428686.642	2810838.703
513	71200	428710.74	2810782.25	428739.9647	2810775.461	428681.4585	2810788.766
514	71250	428699.70	2810733.49	428728.975	2810726.923	428670.3669	2810739.772

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
515	71300	428690.93	2810684.29	428720.6898	2810680.518	428664.107	2810687.402
516	71350	428687.98	2810634.40	428717.9845	2810634.378	428660.9849	2810634.154
517	71400	428691.28	2810584.55	428718.0777	2810587.874	428664.5259	2810580.931
518	71450	428700.77	2810535.49	428726.9432	2810542.131	428674.6749	2810528.565
519	71500	428716.30	2810488.00	428741.4425	2810497.849	428696.8476	2810480.093
520	71550	428737.64	2810442.81	428761.3494	2810455.721	428719.3163	2810432.543
521	71600	428764.43	2810400.64	428787.9707	2810417.58	428747.5379	2810388.166
522	71650	428796.27	2810362.12	428817.5921	2810381.776	428780.9968	2810347.706
523	71700	428831.35	2810326.50	428851.8927	2810346.964	428811.7123	2810306.535
524	71750	428866.81	2810291.25	428887.3571	2810311.718	428847.1767	2810271.289
525	71800	428902.28	2810256.01	428922.8215	2810276.472	428882.6411	2810236.043
526	71850	428937.74	2810220.76	428958.2859	2810241.226	428918.1055	2810200.797
527	71900	428973.19	2810185.50	428990.9924	2810203.052	428953.4698	2810165.622
528	71950	429007.65	2810149.28	429026.1681	2810166.075	428987.1198	2810130.238
529	72000	429041.45	2810112.44	429063.6576	2810132.61	429020.9205	2810093.399
530	72050	429075.26	2810075.59	429097.4606	2810095.768	429054.7235	2810056.556
531	72100	429109.06	2810038.75	429131.2636	2810058.926	429085.5792	2810017.01
532	72150	429143.17	2810002.20	429159.0629	2810017.415	429120.3101	2809979.809
533	72200	429178.87	2809967.20	429193.9803	2809983.188	429161.929	2809948.812
534	72250	429216.27	2809934.02	429234.4318	2809955.337	429200.2715	2809914.814
535	72300	429255.29	2809902.76	429272.3576	2809924.954	429232.9991	2809873.225
536	72350	429295.76	2809873.41	429311.9486	2809896.261	429280.9658	2809852.034
537	72400	429336.73	2809844.74	429352.9017	2809867.594	429321.9351	2809823.355
538	72450	429377.69	2809816.07	429393.8636	2809838.921	429360.6032	2809791.405
539	72500	429418.64	2809787.38	429432.0545	2809806.057	429401.4104	2809762.815
540	72550	429458.87	2809757.69	429472.9954	2809775.845	429440.7112	2809733.813
541	72600	429497.93	2809726.49	429512.7443	2809744.081	429478.8677	2809703.321
542	72650	429535.76	2809693.80	429551.2424	2809710.812	429514.487	2809669.897
543	72700	429572.76	2809660.16	429592.3872	2809681.51	429551.3232	2809636.401
544	72750	429609.73	2809626.50	429629.3611	2809647.851	429588.2972	2809602.742
545	72800	429646.71	2809592.84	429666.3351	2809614.192	429625.2712	2809569.083
546	72850	429683.68	2809559.19	429701.2896	2809578.314	429662.2452	2809535.424
547	72900	429720.65	2809525.53	429738.2635	2809544.655	429705.2778	2809508.421
548	72950	429757.63	2809491.87	429775.2375	2809510.996	429742.2517	2809474.762
549	73000	429794.60	2809458.21	429812.2115	2809477.337	429779.2257	2809441.103
550	73050	429831.58	2809424.55	429849.1855	2809443.678	429816.1997	2809407.444
551	73100	429868.55	2809390.89	429894.9108	2809419.633	429853.1737	2809373.785
552	73150	429905.52	2809357.23	429925.8261	2809379.318	429886.7817	2809336.429
553	73200	429942.50	2809323.57	429962.8001	2809345.659	429923.7557	2809302.77
554	73250	429979.47	2809289.91	429999.7741	2809312.001	429956.0174	2809263.934
555	73300	430016.45	2809256.25	430040.1139	2809282.039	429992.9914	2809230.275
556	73350	430053.42	2809222.60	430077.0879	2809248.38	430029.9654	2809196.616
557	73400	430090.39	2809188.94	430104.6374	2809204.368	430070.3053	2809166.655

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
558	73450	430127.37	2809155.28	430141.5022	2809170.809	430107.1701	2809133.095
559	73500	430164.34	2809121.62	430178.4762	2809137.15	430144.1441	2809099.436
560	73550	430201.32	2809087.96	430215.4502	2809103.491	430181.1181	2809065.777
561	73600	430238.29	2809054.30	430252.4242	2809069.832	430218.092	2809032.118
562	73650	430275.26	2809020.64	430289.3981	2809036.173	430255.066	2808998.459
563	73700	430312.24	2808986.98	430326.3721	2809002.514	430292.04	2808964.801
564	73750	430349.21	2808953.32	430363.3461	2808968.855	430329.014	2808931.142
565	73800	430386.18	2808919.66	430400.3317	2808935.183	430367.9898	2808899.715
566	73850	430422.40	2808885.20	430437.3147	2808899.979	430403.2156	2808866.197
567	73900	430456.46	2808848.60	430472.2662	2808862.423	430436.1237	2808830.836
568	73950	430488.16	2808809.95	430511.9371	2808828.244	430466.7589	2808793.489
569	74000	430517.39	2808769.39	430542.2624	2808786.166	430495.0016	2808754.301
570	74050	430544.03	2808727.09	430578.5247	2808747.339	430520.7415	2808713.425
571	74100	430567.97	2808683.21	430603.6667	2808701.26	430534.0621	2808666.058
572	74150	430589.29	2808637.98	430625.7535	2808654.413	430554.6378	2808622.373
573	74200	430609.82	2808592.39	430646.2906	2808608.824	430575.1735	2808576.787
574	74250	430630.38	2808546.82	430666.7643	2808563.441	430604.914	2808535.182
575	74300	430652.39	2808501.93	430693.0498	2808523.45	430627.6454	2808488.834
576	74350	430677.15	2808458.50	430716.3809	2808482.515	430653.2663	2808443.881
577	74400	430704.57	2808416.70	430729.1252	2808433.927	430681.6449	2808400.617
578	74450	430734.54	2808376.69	430757.9774	2808395.42	430712.6703	2808359.209
579	74500	430766.96	2808338.63	430792.1409	2808361.478	430746.2215	2808319.82
580	74550	430801.69	2808302.67	430825.3952	2808327.048	430782.1674	2808282.603
581	74600	430838.60	2808268.95	430860.7351	2808294.762	430820.3676	2808247.704
582	74650	430877.24	2808237.22	430894.8386	2808258.996	430859.6303	2808215.448
583	74700	430916.12	2808205.78	430933.7202	2808227.56	430898.512	2808184.013
584	74750	430955.00	2808174.35	430972.6019	2808196.124	430937.3937	2808152.577
585	74800	430993.88	2808142.91	431011.4835	2808164.688	430976.2753	2808121.141
586	74850	431032.76	2808111.48	431050.3652	2808133.252	431015.157	2808089.705
587	74900	431071.64	2808080.04	431089.2469	2808101.816	431054.0386	2808058.269
588	74950	431110.53	2808048.61	431128.1285	2808070.38	431092.9203	2808026.833
589	75000	431149.41	2808017.17	431167.0102	2808038.945	431131.802	2807995.397
590	75050	431188.29	2807985.73	431213.4365	2808016.84	431170.6836	2807963.961
591	75100	431227.17	2807954.30	431252.3181	2807985.404	431205.793	2807927.859
592	75150	431266.05	2807922.86	431291.1998	2807953.968	431244.6746	2807896.424
593	75200	431304.93	2807891.43	431330.0814	2807922.532	431283.5563	2807864.988
594	75250	431343.82	2807859.99	431361.4185	2807881.765	431316.7795	2807826.553
595	75300	431382.70	2807828.55	431400.3001	2807850.329	431355.6611	2807795.117
596	75350	431421.58	2807797.12	431439.1818	2807818.893	431394.5428	2807763.681
597	75400	431460.46	2807765.68	431478.0634	2807787.457	431437.8255	2807737.689
598	75450	431499.34	2807734.25	431516.9451	2807756.021	431476.7071	2807706.253
599	75500	431538.22	2807702.81	431555.8268	2807724.585	431518.1037	2807677.927
600	75550	431577.11	2807671.37	431600.9956	2807700.926	431556.9853	2807646.492

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
601	75600	431616.29	2807640.32	431639.355	2807670.527	431596.8712	2807614.893
602	75650	431656.65	2807610.82	431678.4361	2807641.952	431638.3065	2807584.597
603	75700	431698.21	2807583.01	431714.3851	2807608.275	431680.944	2807556.067
604	75750	431740.49	2807556.32	431756.4685	2807581.712	431723.4362	2807529.244
605	75800	431782.80	2807529.68	431798.7812	2807555.073	431765.7488	2807502.605
606	75850	431825.11	2807503.05	431841.0939	2807528.434	431808.0615	2807475.966
607	75900	431867.43	2807476.41	431883.5307	2807501.717	431853.695	2807454.327
608	75950	431909.74	2807449.77	431925.8434	2807475.078	431896.0077	2807427.688
609	76000	431952.05	2807423.13	431968.1561	2807448.439	431938.3204	2807401.049
610	76050	431994.36	2807396.49	432010.4688	2807421.8	431980.6331	2807374.41
611	76100	432036.68	2807369.85	432052.7815	2807395.161	432017.0852	2807338.462
612	76150	432078.99	2807343.21	432095.0942	2807368.522	432059.3979	2807311.823
613	76200	432121.30	2807316.57	432137.4068	2807341.883	432105.9728	2807291.954
614	76250	432163.61	2807289.93	432179.7195	2807315.244	432148.2855	2807265.315
615	76300	432205.93	2807263.29	432227.36	2807297.067	432190.5982	2807238.676
616	76350	432248.24	2807236.66	432269.6727	2807270.428	432232.9109	2807212.037
617	76400	432290.55	2807210.02	432305.592	2807233.634	432277.3547	2807188.783
618	76450	432332.69	2807183.11	432348.3822	2807206.3	432318.9103	2807162.25
619	76500	432372.66	2807153.11	432390.9223	2807174.332	432356.5554	2807133.984
620	76550	432408.61	2807118.41	432429.379	2807137.188	432390.2499	2807101.441
621	76600	432439.96	2807079.50	432466.9879	2807098.427	432409.7493	2807058.131
622	76650	432466.21	2807036.98	432495.3877	2807052.392	432433.5718	2807019.547
623	76700	432486.95	2806991.52	432517.8266	2807003.176	432452.398	2806978.294
624	76750	432502.15	2806943.91	432538.8466	2806953.777	432466.4479	2806934.194
625	76800	432514.89	2806895.56	432551.6891	2806905.057	432479.1023	2806886.184
626	76850	432527.57	2806847.20	432564.3637	2806856.69	432491.7769	2806837.817
627	76900	432540.24	2806798.83	432570.2669	2806806.548	432504.4514	2806789.45
628	76950	432552.92	2806750.46	432582.9415	2806758.182	432517.126	2806741.084
629	77000	432565.59	2806702.10	432595.5795	2806709.954	432529.8006	2806692.717
630	77050	432578.27	2806653.73	432608.2541	2806661.587	432542.4751	2806644.35
631	77100	432590.94	2806605.36	432620.9287	2806613.22	432555.1497	2806595.983
632	77150	432603.62	2806557.00	432643.2766	2806567.388	432560.0856	2806545.588
633	77200	432616.29	2806508.63	432655.9512	2806519.021	432572.7601	2806497.221
634	77250	432628.96	2806460.26	432668.6257	2806470.655	432585.4347	2806448.854
635	77300	432641.64	2806411.89	432681.3003	2806422.288	432598.1093	2806400.487
636	77350	432654.31	2806363.53	432693.9749	2806373.921	432610.7838	2806352.121
637	77400	432666.99	2806315.16	432706.6494	2806325.554	432616.687	2806301.979
638	77450	432679.48	2806266.75	432730.9923	2806279.194	432628.9297	2806254.532
639	77500	432690.41	2806217.96	432742.1758	2806229.307	432622.03	2806202.964
640	77550	432701.11	2806169.12	432779.2581	2806186.251	432632.7389	2806154.124
641	77600	432711.82	2806120.28	432789.9669	2806137.411	432643.4477	2806105.284
642	77650	432722.53	2806071.44	432800.6758	2806088.571	432654.1565	2806056.445
643	77700	432733.25	2806022.60	432811.3475	2806039.946	432647.3444	2806003.518

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
644	77750	432745.56	2805974.15	432822.1491	2805997.254	432661.3073	2805948.737
645	77800	432762.22	2805927.03	432836.6306	2805956.402	432680.3674	2805894.711
646	77850	432780.86	2805880.63	432855.0679	2805910.503	432699.222	2805847.765
647	77900	432799.53	2805834.25	432873.7399	2805864.121	432717.8941	2805801.382
648	77950	432818.20	2805787.86	432883.1355	2805814.004	432747.698	2805759.481
649	78000	432836.87	2805741.48	432901.8076	2805767.621	432766.3701	2805713.098
650	78050	432855.54	2805695.10	432907.4925	2805716.01	432799.8847	2805672.691
651	78100	432874.22	2805648.71	432926.1646	2805669.627	432818.5568	2805626.308
652	78150	432892.89	2805602.33	432932.7772	2805618.39	432858.5649	2805588.515
653	78200	432911.30	2805555.85	432951.5645	2805570.933	432876.65	2805542.864
654	78250	432927.91	2805508.69	432968.5579	2805522.711	432892.9317	2805496.621
655	78300	432944.22	2805461.42	432984.8641	2805475.444	432909.238	2805449.354
656	78350	432960.52	2805414.15	432990.7718	2805424.591	432931.2162	2805404.045
657	78400	432976.83	2805366.89	433007.078	2805377.324	432947.5224	2805356.779
658	78450	432993.13	2805319.62	433023.3842	2805330.058	432963.8286	2805309.512
659	78500	433009.44	2805272.36	433039.6905	2805282.792	432980.1349	2805262.246
660	78550	433025.75	2805225.09	433048.4341	2805232.916	432996.4411	2805214.98
661	78600	433042.72	2805178.06	433065.0163	2805186.937	433013.9138	2805166.601

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

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

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

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

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

12	110	429513.98	2816571.06	429505.41	2816598.76	429522.56	2816543.35
13	120	429523.53	2816574.02	429514.93	2816601.72	429532.14	2816546.33
14	130	429533.08	2816576.99	429524.48	2816604.68	429541.69	2816549.29
15	140	429542.63	2816579.96	429534.03	2816607.65	429551.24	2816552.26
16	150	429552.18	2816582.92	429543.58	2816610.62	429560.79	2816555.23
17	160	429561.73	2816585.89	429553.13	2816613.58	429570.34	2816558.20
18	170	429571.28	2816588.86	429562.68	2816616.55	429579.89	2816561.16
19	180	429580.83	2816591.82	429572.23	2816619.52	429589.44	2816564.13
20	190	429590.38	2816594.79	429581.78	2816622.48	429598.99	2816567.10
21	200	429599.93	2816597.76	429591.33	2816625.45	429608.54	2816570.06
ROW from Chainage 200 to 360 already considered in ROW of Main carriageway above							
22	360	429752.73	2816645.23	429744.12	2816672.92	429761.33	2816617.53
23	370	429762.28	2816648.19	429753.67	2816675.89	429770.88	2816620.50
24	380	429771.83	2816651.16	429763.22	2816678.85	429780.43	2816623.47
25	390	429781.38	2816654.13	429772.77	2816681.82	429789.98	2816626.43
26	400	429790.93	2816657.09	429782.32	2816684.79	429799.53	2816629.40
27	410	429800.48	2816660.06	429791.87	2816687.75	429809.08	2816632.37
28	420	429810.03	2816663.03	429801.42	2816690.72	429818.63	2816635.33
29	430	429819.58	2816665.99	429810.97	2816693.69	429828.18	2816638.30
30	440	429829.13	2816668.96	429820.52	2816696.66	429837.73	2816641.27
31	450	429838.68	2816671.93	429830.07	2816699.62	429847.28	2816644.23
32	460	429848.23	2816674.89	429842.29	2816693.99	429854.16	2816655.79
33	470	429857.78	2816677.86	429851.84	2816696.96	429863.71	2816658.76
34	480	429867.33	2816680.83	429861.39	2816699.93	429873.26	2816661.73
35	490	429876.88	2816683.79	429870.94	2816702.89	429882.81	2816664.70
36	500	429886.43	2816686.76	429880.49	2816705.86	429892.36	2816667.66
37	510	429895.98	2816689.73	429890.04	2816708.83	429901.91	2816670.63
38	520	429905.52	2816692.70	429899.59	2816711.79	429911.46	2816673.60
39	530	429915.07	2816695.66	429909.14	2816714.76	429921.01	2816676.56
40	540	429924.62	2816698.63	429918.69	2816717.73	429930.56	2816679.53
41	550	429934.17	2816701.60	429928.24	2816720.70	429940.11	2816682.50
42	560	429943.72	2816704.56	429937.79	2816723.66	429949.66	2816685.46
43	570	429953.27	2816707.53	429947.34	2816726.63	429959.21	2816688.43

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

Coordinate System - Universal Transverse Mercator (UTM)-WGS84 (Zone 46N)							
Sr. no.	Design Chainage	CENTRELINE		LEFT SIDE		RIGHT SIDE	
		Easting	Northing	Northing	Easting	Easting	Northing
1	100	432540.17	2805926.84	432543.68	2805946.53	432536.66	2805907.15

2	110	432550.08	2805925.58	432551.61	2805945.52	432548.55	2805905.64
3	120	432560.07	2805925.32	432559.60	2805945.31	432560.55	2805905.32
4	130	432570.04	2805926.04	432567.69	2805945.90	432572.40	2805906.18
5	140	432579.92	2805927.59	432576.12	2805947.23	432583.72	2805907.96
6	150	432589.68	2805929.76	432584.89	2805949.18	432594.48	2805910.34
7	160	432599.35	2805932.31	432594.00	2805951.59	432604.70	2805913.04
8	170	432608.97	2805935.04	432601.57	2805961.00	432618.29	2805902.34
9	180	432618.59	2805937.78	432611.19	2805963.75	432627.91	2805905.08
10	190	432628.21	2805940.52	432620.80	2805966.49	432637.53	2805907.82
11	200	432637.82	2805943.26	432630.42	2805969.23	432647.14	2805910.57
12	210	432647.44	2805946.01	432640.04	2805971.97	432656.76	2805913.31
13	220	432657.06	2805948.75	432649.65	2805974.71	432666.38	2805916.05
ROW from Chainage 220 to 390 already considered in ROW of Main carriageway above							
14	390	432820.54	2805995.35	432812.87	2806022.28	432831.23	2805957.85
15	400	432830.16	2805998.10	432822.48	2806025.02	432840.85	2805960.59
16	410	432839.78	2806000.84	432832.10	2806027.76	432850.47	2805963.33
17	420	432849.39	2806003.58	432841.72	2806030.51	432860.08	2805966.07
18	430	432859.01	2806006.32	432851.33	2806033.25	432869.70	2805968.81
19	440	432868.63	2806009.05	432861.10	2806036.02	432879.12	2805971.49
20	450	432878.29	2806011.64	432871.40	2806038.78	432887.89	2805973.84
21	460	432888.03	2806013.91	432882.30	2806041.32	432896.00	2805975.73
22	470	432897.87	2806015.67	432894.99	2806035.46	432901.33	2805991.92
23	480	432907.81	2806016.78	432906.25	2806036.72	432909.68	2805992.85
24	490	432917.79	2806017.23	432917.49	2806037.23	432918.16	2805993.24
25	500	432927.79	2806017.14	432928.39	2806037.13	432927.07	2805993.15
26	510	432937.78	2806016.70	432938.90	2806036.66	432936.44	2805992.73
27	520	432947.76	2806016.08	432949.03	2806036.04	432946.24	2805992.13
28	530	432957.74	2806015.45	432959.01	2806035.41	432956.22	2805991.50
29	540	432967.72	2806014.82	432968.99	2806034.78	432966.20	2805990.87
30	550	432977.70	2806014.19	432978.97	2806034.15	432976.18	2805990.23
31	560	432987.68	2806013.55	432988.95	2806033.51	432986.16	2805989.60
32	570	432997.66	2806012.92	432998.93	2806032.88	432996.14	2805988.97
33	580	433007.64	2806012.29	433008.91	2806032.25	433006.12	2805988.34
34	585	433012.63	2806011.97	433013.90	2806031.93	433011.11	2805988.02

SCHEDULE – B

(See Clause 2.1)

DEVELOPMENT OF THE PROJECT HIGHWAY

1 Development of the Project Highway

The Project Highway shall generally follow the horizontal alignment shown in the 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:84-2019, 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 and submit the same to Authority & Authority's Engineer for its Consent/Approval and Safety Audit by Safety Auditor, before the start of the execution of project. The design so approved shall not be in contradiction with the scope of the project. For the avoidance of doubt, the provisions mentioned in Schedule B & C cannot be changed, only the design of the components is to be submitted for consent/approval.

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 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 horizontal alignment shown in the 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:84-2019, 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 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 design so approved shall not be in contradiction with the scope of the project. For the avoidance of doubt, the provisions mentioned in Schedule B & C cannot be changed, only the design of the components is to be submitted for consent/approval.

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 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 1.5 metre on valley side for main carriageway and both sides for ramps/loops in case of embankment.

1.1.2 In built-up sections/areas the width of paved carriageway shall be 18.0 metre for four laning (including paved shoulder of 1.5m and kerb shyness).

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

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

1.1.3 Except as otherwise provided in this Agreement, the width shall be adjusted to fit into appropriate plans and cross sections developed in accordance with TCS enclosed.

1.1.4 The entire cross-sectional elements shall be accommodated in the available/proposed ROW. If required, suitable retaining structures shall be provided to accommodate the highway cross-section within the available/proposed ROW. The details of such section are mentioned in Schedule-B. In case of any other section not included in Schedule-B, where retaining structures are to be provided, shall constitute a Change of Scope.

1.2 Width of Median

1.2.1 The width of median including kerb shyness shall be 5.0 metre with Flushed median (With turfing on either side) for all the sections including built up section.

1.2.2 The metal beam (Thrie-beam) crash barrier shall be provided on either side of median side.

1.2.3 Deleted

1.2.4 A suitable anti-glare measures shall be proposed. (Clause No. 2.5.6 IRC:SP:84-2019)

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 vertical curves including structures as well as highways. (Clause No. 2.9.5 IRC:SP:84-2019)

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. In case of any other section not included in Schedule-B, where retaining structures are to be provided, shall constitute a Change of Scope (the design consultant has to mention specifically such areas in Schedule-B).

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 1.5m width shall be provided with top 150 mm with well graded naturals and moorum gravel crust stones or combination thereof, confirming to Clause 401 of MoRTH specification.

2.6 Lateral and Vertical Clearance at Underpasses

2.6.1 In case of VUP/ LVUP/ SVUP, the proposed structure, the finish road level in VUP/ LVUP/ SVUP shall be kept 150 mm above the ground level/service road/ cross road (whichever is higher) to ensure that these VUP/ LVUP/ SVUP don't become water accumulation points. (Clause No. 2.10 IRC: SP:84-2019)

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

2.7 Lateral and vertical clearances at Overpasses

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

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

Sr. No.	Location Chainage(km)	No. of Spans	Span/opening (m)	Remarks
1	48+790	2	15.00	Overpass
2	49+735	1 1 1	25.0 30.0 25.0	VOP
3	50+200	2	15.00	Overpass
4	51+825	2	15.00	Overpass
5	51+890	1	30.00	VOP
6	52+600	1	30.00	VOP
7	53+020	2	15.00	Overpass
8	53+765	2	15.00	Overpass
9	54+060	2	15.00	Overpass
10	54+560	2	15.00	VOP
11	55+360	2	15.00	Overpass
12	56+160	2	15.00	Overpass
13	57+800	2	15.00	Overpass
14	59+595	1	30.00	VOP
15	59+930	2	15.00	Overpass
16	62+003	2	15.00	Overpass
17	62+890	2	15.00	Overpass
18	63+725	2	15.00	VOP
19	64+295	2	15.00	VOP

Sr. No.	Location Chainage(km)	No. of Spans	Span/opening (m)	Remarks
20	66+585	2	15.00	Overpass
21	67+460	2	15.00	Overpass
22	67+937	1 1 1	15.0 40.0 15.0	VOP
23	71+240	2	15.00	Overpass
24	72+900	2	15.00	Overpass
25	74+445	2	15.00	VOP
26	74+810	2	15.00	Overpass
27	75+835	2	15.00	Overpass
28	76+260	1	40.00	VOP
29	76+770	2	15.00	Overpass
30	76+960	1	30.00	VOP
31	77+380	2	14.00	Overpass

2.8 Service Roads/Slip Roads/Connecting Roads:

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

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

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

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

2.8.3 The Parking bays shall be provided along service road.

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

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

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

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

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

2.8.5 A Separator Between Main Carriageway and Service/Slip Road

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

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

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

Note:

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 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:84-2019). 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: 84-2019).

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 shall be provided at grade intersection below structures for each direction of pedestrian movement (refer fig 3.1 to 3.6 IRC: SP:84-2019).

The requisite particulars are given below:

2.9.1 Vehicle Overpass (VOP)

For Main Carriageway

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	48+790	As per GAD		Yes	2 x 15	5.5		
2	49+735			Yes	1 x 25+1 x 30+1 x25	5.5		
3	50+200			Yes	2 x 15	5.5		
4	51+825			Yes	2 x 15	5.5		
5	51+890			Yes	1 x 30	5.5	18	
6	52+600			Yes	1 x 30	5.5		
7	53+020			Yes	2 x 15	5.5		
8	53+765			Yes	2 x 15	5.5		
9	54+060			Yes	2 x 15	5.5		
10	54+560			Yes	2 x 15	5.5		
11	55+360			Yes	2 x 15	5.5		
12	56+160			Yes	2 x 15	5.5		
13	57+800			Yes	2 x 15	5.5		
14	59+595			Yes	1 x 30	5.5		
15	59+930			Yes	2 x 15	5.5		
16	62+003			Yes	2 x 15	5.5		
17	62+890			Yes	2 x 15	5.5		
18	63+725			Yes	2 x 15	5.5	22	
19	64+295			Yes	2 x 15	5.5		
20	66+585			Yes	2 x 15	5.5		
21	67+460			Yes	2 x 15	5.5		
22	67+937			Yes	1 x 15 + 1 x 40 + 1 x 15	5.5	36	
23	71+240			Yes	2 x 15	5.5		
24	72+900			Yes	2 x 15	5.5		
25	74+445			Yes	2 x 15	5.5	25	

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
26	74+810			Yes	2 x 15	5.5		
27	75+835			Yes	2 x 15	5.5		
28	76+260			Yes	1 X 40	5.5	32	
29	76+770			Yes	2 x 15	5.5		
30	76+960			Yes	1 x 30	5.5		
31	77+380			Yes	2 x 14	5.5		

For Interchanges

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Interchange At Ch 54+780								
1	0+335	As per GAD		-	1X15	5.5		Ramp-01
2	0+275	As per GAD		-	1X15	5.5	21	Ramp-04
Interchange At Ch 65+010								
3	0+015	As per GAD		Yes	1X30	5.5		Rotary
4	0+230	As per GAD		Yes	1X20+2X35+1X16+3X32	5.5		Rotary
Interchange At Ch 77+705								
5	0+450	As per GAD		-	1X15	5.5		Ramp-01
6	0+380	As per GAD		-	1X15	5.5		Ramp-02

2.9.2 Vehicular Underpasses (VUP)

For Main Carriageway

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
1	70+670	15.10	15.10	No	1X33.40	5.5	-	

For Interchanges

Sr. No.	Design Chainage (km)	LHS Roadway Width (m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle (°)	Remarks
Interchange At Ch 54+780								
1	0+015 (Rotary)	15.10	15.10	No	1X20.00	5.5	-	Rotary
2	0+280 (Rotary)	15.10	15.10	No	1X20.00	5.5	-	Rotary
Interchange At Ch 77+705								
3	0+285 (Rotary)	15.10	15.10	No	1X20.00	5.5	-	Rotary

2.9.3 Light Vehicular Underpasses (LVUP)

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

2.9.4 Small Vehicular Underpasses (SVUP)

Sr. No.	Design Chainage (km)	LHS Roadway Width(m)	RHS Roadway Width(m)	Super Structure Provision in Median	Span Arrangement (m)	Minimum Vertical Clearance (m)	Skew Angle(°)	Remarks
1	46+965	15.10	15.10	-	1X7	4	-	SVUP
2	50+560	13.50	13.50	-	1X30	4	-	Utility Underpass
3	51+100	15.10	15.10	-	1X7	4	-	Underpass
4	56+620	15.10	15.10	-	1X7	4	-	Underpass
5	57+260	15.10	15.10	-	1X7	4	-	Underpass
6	72+315	15.10	15.10	-	1X7	4	-	SVUP
7	73+785	15.10	15.10	-	1X7	4	-	Underpass
8	76+680	15.10	15.10	-	1X7	4	-	SVUP
9	78+240	15.10	15.10	-	1X7	4	-	Underpass

2.9.5 Cattle and Pedestrian underpasses

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

2.9.6 Interchanges (IC)

Sr. No.	Design Chainage (km)	Name of Structure	Span Arrangement (m)	Total Width (m)	Typical Cross Section	Remarks
1	54+780	Elongated Elevated Rotary	As Per GAD			Interchange-01
2	65+010	Elongated Elevated Rotary	As Per GAD			Interchange-02
3	77+705	Elongated Elevated Rotary	As Per GAD			Interchange-03

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

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

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

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

2.10 Typical Cross Section (TCS) of the Project Highway

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

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
1	45645	45960	315	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
2	45960	45980	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
3	45980	46400	420	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
4	46400	46420	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
5	46420	46440	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
6	46440	46560	120	Viaduct	Viaduct
7	46560	46580	20	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
8	46580	46600	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
9	46600	46640	40	TCS-15A	6 - Lane Divided Highway (One side Filling <3m & other side Retaining Wall) New Construction
10	46640	46840	200	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
11	46840	46955	115	TCS-15A	6 - Lane Divided Highway (One side Filling <3m & other side Retaining Wall) New Construction
12	46955	46961	6	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
13	46961	46969	8	SVUP	SVUP
14	46969	47040	71	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
15	47040	47080	40	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
16	47080	47100	20	TCS-15A	6 - Lane Divided Highway (One side Filling <3m & other side Retaining Wall) New Construction
17	47100	47120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
18	47120	47240	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
19	47240	47260	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
20	47260	47280	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
21	47280	47320	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
22	47320	47340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
23	47340	47360	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
24	47360	47400	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
25	47400	47500	100	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
26	47500	47660	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
27	47660	47680	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
28	47680	47700	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
29	47700	47740	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
30	47740	47900	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
31	47900	47920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
32	47920	47940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
33	47940	47980	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
34	47980	48000	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
35	48000	48020	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
36	48020	48060	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
37	48060	48080	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
38	48080	48100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
39	48100	48120	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
40	48120	48140	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
41	48140	48160	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
42	48160	48180	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
43	48180	48220	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
44	48220	48240	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
45	48240	48260	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
46	48260	48274	14	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
47	48274	48386	112	MJB	Major Bridge
48	48386	48570	184	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
49	48570	48590	20	MNB	Minor Bridge
50	48590	48640	50	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
51	48640	48700	60	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
52	48700	48720	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
53	48720	48740	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
54	48740	48780	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
55	48780	48800	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
56	48800	48820	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
57	48820	48880	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
58	48880	49020	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
59	49020	49040	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
60	49040	49060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
61	49060	49100	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
62	49100	49140	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
63	49140	49160	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
64	49160	49214	54	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
65	49214	49226	12	Viaduct	Viaduct
66	49226	49340	114	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
67	49340	49360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
68	49360	49380	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
69	49380	50000	620	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
70	50000	50040	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
71	50040	50060	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
72	50060	50080	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
73	50080	50100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
74	50100	50120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
75	50120	50140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
76	50140	50160	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
77	50160	50180	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
78	50180	50200	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
79	50200	50440	240	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
80	50440	50520	80	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
81	50520	50540	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
82	50540	50547	7	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
83	50547	50572	25	Utility Underpass	Utility Underpass
84	50572	50600	28	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
85	50600	50620	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
86	50620	50640	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
87	50640	50860	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
88	50860	50880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
89	50880	50900	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
90	50900	50920	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
91	50920	50980	60	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
92	50980	51060	80	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
93	51060	51080	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
94	51080	51096	16	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
95	51096	51104	8	Underpass	Underpass
96	51104	51140	36	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
97	51140	51160	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
98	51160	51180	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
99	51180	51220	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
100	51220	51240	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
101	51240	51360	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
102	51360	51380	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
103	51380	51400	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
104	51400	51450	50	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
105	51450	51490	40	MNB	Minor Bridge
106	51490	51520	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
107	51520	51620	100	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
108	51620	51640	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
109	51640	51660	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
110	51660	51680	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
111	51680	51720	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
112	51720	51740	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
113	51740	51780	40	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
114	51780	51800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
115	51800	51820	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
116	51820	51860	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
117	51860	52220	360	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
118	52220	52240	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
119	52240	52280	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
120	52280	52300	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
121	52300	52320	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
122	52320	52340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
123	52340	52360	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
124	52360	52380	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
125	52380	52420	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
126	52420	52440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
127	52440	52460	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
128	52460	52480	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
129	52480	52500	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
130	52500	52520	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
131	52520	52680	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
132	52680	52740	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
133	52740	52760	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
134	52760	52780	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
135	52780	52800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
136	52800	52840	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
137	52840	52860	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
138	52860	52880	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
139	52880	52900	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
140	52900	52960	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
141	52960	52980	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
142	52980	53000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
143	53000	53220	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
144	53220	53260	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
145	53260	53280	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
146	53280	53340	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
147	53340	53400	60	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
148	53400	53450	50	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
149	53450	53475	25	MNB	Minor Bridge
150	53475	53520	45	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
151	53520	53540	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
152	53540	53560	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
153	53560	53600	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
154	53600	53640	40	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
155	53640	53700	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
156	53700	53720	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
157	53720	53740	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
158	53740	53780	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
159	53780	53800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
160	53800	53820	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
161	53820	53840	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
162	53840	53860	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
163	53860	53880	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
164	53880	53900	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
165	53900	53920	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
166	53920	53980	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
167	53980	54000	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
168	54000	54040	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
169	54040	54100	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
170	54100	54120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
171	54120	54140	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
172	54140	54160	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
173	54160	54200	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
174	54200	54220	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
175	54220	54240	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
176	54240	54260	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
177	54260	54280	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
178	54280	54320	40	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
179	54320	54340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
180	54340	54360	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
181	54360	54380	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
182	54380	54420	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
183	54420	54460	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
184	54460	54480	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
185	54480	54500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
186	54500	54540	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
187	54540	54560	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
188	54560	54625	65	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
189	54625	54800	175	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
190	54800	54810	10	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
191	54810	54840	30	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
192	54840	54900	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
193	54900	54920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
194	54920	54940	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
195	54940	54960	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
196	54960	55000	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
197	55000	55024	24	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
198	55024	55036	12	Viaduct	Viaduct
199	55036	55160	124	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
200	55160	55180	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
201	55180	55280	100	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
202	55280	55300	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
203	55300	55340	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
204	55340	55360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
205	55360	55420	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
206	55420	55440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
207	55440	55460	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
208	55460	55480	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
209	55480	55500	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
210	55500	55540	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
211	55540	55560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
212	55560	55580	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
213	55580	55620	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
214	55620	55640	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
215	55640	55660	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
216	55660	55720	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
217	55720	55760	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
218	55760	55780	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
219	55780	55800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
220	55800	55820	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
221	55820	55840	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
222	55840	55860	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
223	55860	55880	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
224	55880	55920	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
225	55920	55980	60	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
226	55980	56000	20	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
227	56000	56010	10	MNB	Minor Bridge
228	56010	56080	70	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
229	56080	56100	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
230	56100	56120	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
231	56120	56260	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
232	56260	56300	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
233	56300	56320	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
234	56320	56500	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
235	56500	56520	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
236	56520	56540	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
237	56540	56616	76	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
238	56616	56624	8	Underpass	Underpass
239	56624	56680	56	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
240	56680	56700	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
241	56700	56720	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
242	56720	56740	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
243	56740	56780	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
244	56780	56820	40	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
245	56820	56840	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
246	56840	56900	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
247	56900	56940	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
248	56940	56975	35	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
249	56975	57000	25	MNB	Minor Bridge
250	57000	57040	40	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
251	57040	57100	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
252	57100	57120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
253	57120	57160	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
254	57160	57180	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
255	57180	57256	76	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
256	57256	57264	8	Underpass	Underpass
257	57264	57320	56	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
258	57320	57340	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
259	57340	57380	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
260	57380	57400	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
261	57400	57420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
262	57420	57440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
263	57440	57480	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
264	57480	57520	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
265	57520	57540	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
266	57540	57580	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
267	57580	57600	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
268	57600	57640	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
269	57640	57660	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
270	57660	57700	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
271	57700	57720	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
272	57720	57740	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
273	57740	57860	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
274	57860	57880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
275	57880	57940	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
276	57940	58000	60	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
277	58000	58020	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
278	58020	58140	120	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
279	58140	58200	60	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
280	58200	58260	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
281	58260	58280	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
282	58280	58300	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
283	58300	58400	100	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
284	58400	58420	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
285	58420	58520	100	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
286	58520	58640	120	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
287	58640	58680	40	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
288	58680	58700	20	MNB	Minor Bridge
289	58700	58860	160	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
290	58860	58880	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
291	58880	58900	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
292	58900	58920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
293	58920	58940	20	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
294	58940	58960	20	MNB	Minor Bridge
295	58960	59020	60	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
296	59020	59040	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
297	59040	59220	180	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
298	59220	59260	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
299	59260	59320	60	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
300	59320	59340	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
301	59340	59360	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
302	59360	59420	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
303	59420	59480	60	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
304	59480	59500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
305	59500	59620	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
306	59620	59640	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
307	59640	59660	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
308	59660	59680	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
309	59680	59700	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
310	59700	59720	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
311	59720	59740	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
312	59740	59760	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
313	59760	59780	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
314	59780	59800	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
315	59800	59940	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
316	59940	60000	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
317	60000	60020	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
318	60020	60040	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
319	60040	60060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
320	60060	60080	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
321	60080	60100	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
322	60100	60120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
323	60120	60140	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
324	60140	60160	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
325	60160	60180	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
326	60180	60200	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
327	60200	60240	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
328	60240	60280	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
329	60280	60300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
330	60300	60320	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
331	60320	60340	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
332	60340	60400	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
333	60400	60435	35	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
334	60435	60445	10	MNB	Minor Bridge
335	60445	60500	55	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
336	60500	60520	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
337	60520	60540	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
338	60540	60580	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
339	60580	60620	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
340	60620	60660	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
341	60660	60680	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
342	60680	60700	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
343	60700	60760	60	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
344	60760	60780	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
345	60780	60820	40	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
346	60820	60840	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
347	60840	60880	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
348	60880	60920	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
349	60920	60940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
350	60940	60960	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
351	60960	61000	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
352	61000	61020	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
353	61020	61040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
354	61040	61060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
355	61060	61080	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
356	61080	61140	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
357	61140	61200	60	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
358	61200	61215	15	MNB	Minor Bridge
359	61215	61300	85	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
360	61300	61310	10	MNB	Minor Bridge

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
361	61310	61340	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
362	61340	61360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
363	61360	61380	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
364	61380	61400	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
365	61400	61420	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
366	61420	61620	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
367	61620	61640	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
368	61640	61660	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
369	61660	61680	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
370	61680	62180	500	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
371	62180	62240	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
372	62240	62260	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
373	62260	62280	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
374	62280	62320	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
375	62320	62360	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
376	62360	62400	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
377	62400	62420	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
378	62420	62460	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
379	62460	62480	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
380	62480	62540	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
381	62540	62560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
382	62560	62580	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
383	62580	62640	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
384	62640	62660	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
385	62660	62680	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
386	62680	62700	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
387	62700	62720	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
388	62720	62740	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
389	62740	62800	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
390	62800	62820	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
391	62820	62840	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
392	62840	62860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
393	62860	62880	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
394	62880	62900	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
395	62900	62920	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
396	62920	62940	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
397	62940	62960	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
398	62960	63020	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
399	63020	63040	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
400	63040	63060	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
401	63060	63080	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
402	63080	63100	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
403	63100	63120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
404	63120	63140	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
405	63140	63180	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
406	63180	63200	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
407	63200	63220	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
408	63220	63240	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
409	63240	63260	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
410	63260	63280	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
411	63280	63300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
412	63300	63320	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
413	63320	63340	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
414	63340	63360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
415	63360	63380	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
416	63380	63400	20	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
417	63400	63420	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
418	63420	63440	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
419	63440	63460	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
420	63460	63560	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
421	63560	63580	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
422	63580	63600	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
423	63600	63620	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
424	63620	63680	60	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
425	63680	63700	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
426	63700	63900	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
427	63900	63920	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
428	63920	63940	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
429	63940	64020	80	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
430	64020	64060	40	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
431	64060	64080	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
432	64080	64100	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
433	64100	64140	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
434	64140	64180	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
435	64180	64200	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
436	64200	64220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
437	64220	64240	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
438	64240	64320	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
439	64320	64340	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
440	64340	64500	160	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
441	64500	64520	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
442	64520	64540	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
443	64540	64560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
444	64560	64580	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
445	64580	64594	14	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
446	64594	64606	12	MNB	Minor Bridge
447	64606	64640	34	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
448	64640	64680	40	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
449	64680	64700	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
450	64700	64740	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
451	64740	64780	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
452	64780	65060	280	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
453	65060	65100	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
454	65100	65120	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
455	65120	65160	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
456	65160	65180	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
457	65180	65200	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
458	65200	65220	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
459	65220	65240	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
460	65240	65260	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
461	65260	65280	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
462	65280	65300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
463	65300	65320	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
464	65320	65340	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
465	65340	65360	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
466	65360	65380	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
467	65380	65400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
468	65400	65420	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
469	65420	65440	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
470	65440	65460	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
471	65460	65480	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
472	65480	65500	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
473	65500	65520	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
474	65520	65620	100	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
475	65620	65680	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
476	65680	65700	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
477	65700	65840	140	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
478	65840	65860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
479	65860	65900	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
480	65900	65960	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
481	65960	65980	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
482	65980	66020	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
483	66020	66040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
484	66040	66100	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
485	66100	66120	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
486	66120	66180	60	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
487	66180	66200	20	MNB	Minor Bridge
488	66200	66260	60	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
489	66260	66280	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
490	66280	66300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
491	66300	66360	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
492	66360	66380	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
493	66380	66760	380	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
494	66760	66780	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
495	66780	66800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
496	66800	66820	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
497	66820	66840	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
498	66840	66860	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
499	66860	66900	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
500	66900	66960	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
501	66960	67000	40	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
502	67000	67010	10	Viaduct	Viaduct
503	67010	67040	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
504	67040	67060	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
505	67060	67280	220	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
506	67280	67300	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
507	67300	67379	79	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
508	67379	67391	12	MNB	Minor Bridge
509	67391	67420	29	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
510	67420	67500	80	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
511	67500	67520	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
512	67520	67550	30	Viaduct	Viaduct
513	67550	67560	10	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall) New Construction
514	67560	67580	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
515	67580	67680	100	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
516	67680	67700	20	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
517	67700	67740	40	Viaduct	Viaduct
518	67740	67760	20	TCS-5A	6 - Lane Divided Highway (Filling Height > 3m) New Construction
519	67760	67780	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
520	67780	68020	240	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
521	68020	68040	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
522	68040	68060	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
523	68060	68080	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
524	68080	68140	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
525	68140	68160	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
526	68160	68180	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
527	68180	68220	40	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
528	68220	68260	40	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
529	68260	68300	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
530	68300	68440	140	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
531	68440	68460	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
532	68460	68480	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
533	68480	68500	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
534	68500	68520	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
535	68520	68540	20	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
536	68540	68560	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
537	68560	68580	20	TCS-9A	6 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
538	68580	68610	30	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
539	68610	68620	10	Viaduct	Viaduct
540	68620	68640	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
541	68640	68680	40	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
542	68680	68700	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
543	68700	68900	200	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
544	68900	68920	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
545	68920	68940	20	TCS-3A	6 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
546	68940	68980	40	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall) New Construction
547	68980	69020	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
548	69020	69310	290	Viaduct	Viaduct
549	69310	69340	30	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
550	69340	69360	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
551	69360	69400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
552	69400	69460	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
553	69460	69480	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
554	69480	69580	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
555	69580	69600	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
556	69600	69620	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
557	69620	69640	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
558	69640	69700	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
559	69700	69740	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
560	69740	69780	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
561	69780	69800	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
562	69800	69820	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
563	69820	69860	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
564	69860	69880	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
565	69880	69900	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
566	69900	69920	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
567	69920	69980	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
568	69980	70000	20	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
569	70000	70025	25	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
570	70025	70145	120	Viaduct	Viaduct
571	70145	70180	35	TCS-13A	6 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
572	70180	70200	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
573	70200	70220	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
574	70220	70280	60	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
575	70280	70300	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
576	70300	70320	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
577	70320	70340	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
578	70340	70380	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
579	70380	70400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
580	70400	70420	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
581	70420	70440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
582	70440	70460	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
583	70460	70480	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
584	70480	70540	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
585	70540	70560	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
586	70560	70650	90	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
587	70650	70687	37	VUP	VUP
588	70687	70860	173	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
589	70860	70880	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
590	70880	70900	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
591	70900	70920	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
592	70920	70940	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
593	70940	70980	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
594	70980	71000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
595	71000	71180	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
596	71180	71220	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
597	71220	71300	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
598	71300	71380	80	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
599	71380	71400	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
600	71400	71420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
601	71420	71440	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
602	71440	71500	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
603	71500	71520	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
604	71520	71540	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
605	71540	71580	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
606	71580	71640	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
607	71640	71660	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
608	71660	71680	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
609	71680	71700	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
610	71700	71740	40	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
611	71740	71780	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
612	71780	71820	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
613	71820	71840	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
614	71840	71860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
615	71860	71880	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
616	71880	71900	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
617	71900	71920	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
618	71920	71935	15	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
619	71935	71975	40	MNB	Minor Bridge
620	71975	72080	105	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
621	72080	72094	14	TCS-14A	6 - Lane Divided Highway (Both side Retaining wall) New Construction
622	72094	72106	12	MNB	Minor Bridge
623	72106	72140	34	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
624	72140	72160	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
625	72160	72180	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
626	72180	72220	40	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
627	72220	72240	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
628	72240	72280	40	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
629	72280	72312	32	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
630	72312	72320	8	SVUP	SVUP
631	72320	72340	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
632	72340	72360	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
633	72360	72420	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
634	72420	72440	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
635	72440	72460	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
636	72460	72500	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
637	72500	72540	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
638	72540	72580	40	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
639	72580	72600	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
640	72600	72620	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
641	72620	72640	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
642	72640	72660	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
643	72660	72680	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
644	72680	72700	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
645	72700	72760	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
646	72760	72780	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
647	72780	72800	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
648	72800	72840	40	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
649	72840	72860	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
650	72860	72880	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
651	72880	72900	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
652	72900	72940	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
653	72940	73020	80	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
654	73020	73100	80	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
655	73100	73120	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
656	73120	73140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
657	73140	73180	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
658	73180	73200	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
659	73200	73234	34	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
660	73234	73246	12	MNB	Minor Bridge
661	73246	73540	294	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
662	73540	73580	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
663	73580	73620	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
664	73620	73640	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
665	73640	73660	20	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
666	73660	73670	10	MNB	Minor Bridge
667	73670	73700	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
668	73700	73740	40	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
669	73740	73780	40	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
670	73780	73790	10	Underpass	Underpass
671	73790	73820	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
672	73820	73900	80	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
673	73900	73920	20	TCS-2A	6 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
674	73920	73994	74	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
675	73994	74006	12	MNB	Minor Bridge
676	74006	74040	34	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
677	74040	74060	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
678	74060	74080	20	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
679	74080	74280	200	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
680	74280	74300	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
681	74300	74340	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
682	74340	74360	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
683	74360	74400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
684	74400	74420	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
685	74420	74440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
686	74440	74460	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
687	74460	74640	180	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
688	74640	74660	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
689	74660	74740	80	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
690	74740	74820	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
691	74820	74880	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
692	74880	74980	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
693	74980	75000	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
694	75000	75020	20	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
695	75020	75040	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
696	75040	75060	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
697	75060	75180	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
698	75180	75240	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
699	75240	75300	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
700	75300	75360	60	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
701	75360	75400	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
702	75400	75440	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
703	75440	75460	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
704	75460	75480	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
705	75480	75500	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
706	75500	75520	20	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
707	75520	75540	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
708	75540	75560	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
709	75560	75580	20	TCS-5	4 - Lane Divided Highway (Filling Height > 3m) New Construction
710	75580	75700	120	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
711	75700	75720	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
712	75720	75760	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
713	75760	75780	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
714	75780	75860	80	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
715	75860	75880	20	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
716	75880	75905	25	TCS-7A	6 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
717	75905	75915	10	MNB	Minor Bridge
718	75915	75960	45	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
719	75960	75980	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
720	75980	76040	60	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
721	76040	76060	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
722	76060	76080	20	TCS-6	4 - Lane Divided Highway (One side Filling <3m, Other side Filling >3 m) New Construction
723	76080	76100	20	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
724	76100	76120	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
725	76120	76140	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
726	76140	76180	40	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
727	76180	76200	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
728	76200	76220	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
729	76220	76320	100	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
730	76320	76340	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
731	76340	76360	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
732	76360	76380	20	TCS-13	4 - Lane Divided Highway (One side Breast wall & Other side Retaining wall) New Construction
733	76380	76400	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
734	76400	76420	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
735	76420	76440	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
736	76440	76480	40	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
737	76480	76500	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
738	76500	76540	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
739	76540	76580	40	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
740	76580	76600	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
741	76600	76654	54	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
742	76654	76666	12	Viaduct	Viaduct

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
743	76666	76676	10	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
744	76676	76684	8	SVUP	SVUP
745	76684	76700	16	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
746	76700	76740	40	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
747	76740	77060	320	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
748	77060	77080	20	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
749	77080	77100	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
750	77100	77120	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
751	77120	77180	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
752	77180	77280	100	TCS-14	4 - Lane Divided Highway (Both side Retaining wall) New Construction
753	77280	77300	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
754	77300	77340	40	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
755	77340	77360	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
756	77360	77400	40	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
757	77400	77420	20	TCS-1	4 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
758	77420	77560	140	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
759	77560	77700	140	Viaduct	Viaduct
760	77700	77730	30	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
761	77730	77760	30	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
762	77760	77820	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
763	77820	77860	40	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction

Sr. No.	Design Chainage From	Design Chainage To	Length (m)	TCS Type	TCS Description
764	77860	77920	60	TCS-10A	6 - Lane Divided Highway (Both sides Breast wall) New Construction
765	77920	78140	220	TCS-10	4 - Lane Divided Highway (Both sides Breast wall) New Construction
766	78140	78166	26	TCS-8	4 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
767	78166	78174	8	Underpass	Underpass
768	78174	78200	26	TCS-9	4 - Lane Divided Highway with Breast wall on one side (Other side Filling > 3m) New Construction
769	78200	78220	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
770	78220	78280	60	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
771	78280	78300	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
772	78300	78320	20	TCS-11	4 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
773	78320	78340	20	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
774	78340	78360	20	TCS-7	4 - Lane Divided Highway with Breast wall on one side (Other side Filling <3m) New Construction
775	78360	78400	40	TCS-3	4 - Lane Divided Highway (Filling>3m, Cutting<3m) New Construction
776	78400	78420	20	TCS-8A	6 - Lane Divided Highway with Breast wall on one side (Other side Cutting <3m) New Construction
777	78420	78440	20	TCS-1A	6 - Lane Divided Highway Cutting Section (Cutting Height < 3m) New Construction
778	78440	78474	34	TCS-17	6- Lane Divided Highway for VUP/LVUP Approach Road
779	78474	78486	12	MNB	Minor Bridge
780	78486	78520	34	TCS-11A	6 - Lane Divided Highway (One side Retaining Wall, Other side Filling > 3m) New Construction
781	78520	78540	20	TCS-4	4 - Lane Divided Highway (Filling Height <3m) New Construction
782	78540	78600	60	TCS-2	4 - Lane Divided Highway (Partial Cut/Fill <3m) New Construction
			32955	**m**	

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 Clause 2.5.4*
7. *Intermediate Sight Distance (Desirable Minimum Sight Distance) shall be followed for design of all vertical curves (Summit and Valley Curves) including structures as well as highways.*
8. *A 2m wide utility corridor, along with earthen Drain/ Lined drain/Covered Drain as per TCS shall be accommodated in the ROW.*

3 Intersections and Grade Separated Intersections

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

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

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

(a) At-grade intersections Major Junctions:

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

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

(b) Minor Intersections:

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

Note:

1. *"Typical Layout as per type Designs for Intersections on National Highways, 1992, Geometric Design and Typical Cross Sections of Major Junction is included in Annexure – IV to schedule-B."*
2. *Type of Junction to be improved as per Manual. (clause No. 3.2.5 IRC: SP:84-2019)*
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:84-2019)

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
1	46+965	+	To Village	To Village	No	VR	3.75	50	50
2	48+790	+	To Village	To Paddy Field	No	VR	3.75	50	50
3	49+735	+	To Village	To Paddy Field	No	VR	3.75	50	50
4	50+200	+	To Village	To Village	No	VR	3.75	50	50
5	51+100	+	To Village	To Village	No	VR	3.75	50	50
6	51+825	+	To Village	To Village	No	VR	3.50	50	50
7	51+890	+	To Village	To Village	No	VR	3.75	50	50
8	52+600	+	To Nongbah	To Mukhla	No	MDR	5.50	50	50
9	53+020	+	To Village	To Village	No	VR	3.50	50	50
10	53+765	+	To Village	To Village	No	VR	3.75	50	50
11	54+060	+	To Village	To Village	No	VR	3.75	50	50
12	54+560	+	To Village	To Village	No	VR	3.75	50	50

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
13	55+360	+	To Village	To Village	No	VR	3.75	50	50
14	56+160	+	To Village	To Village	No	VR	3.75	50	50
15	56+620	+	To Village	To Village	No	VR	3.75	50	50
16	57+260	+	To Village	To Village	No	VR	3.75	50	50
17	57+800	+	To Village	To Village	No	VR	3.75	50	50
18	59+595	+	To Mynso	To Pasyih	No	MDR	7.0	50	50
19	59+930	+	To Village	To Village	No	VR	3.75	50	50
20	62+003	+	To Village	To Village	No	VR	3.75	50	50
21	62+890	+	To Village	To Village	No	VR	3.75	50	50
22	63+725	+	To Village	To Village	No	VR	3.75	50	50
23	64+295	+	To Village	To Village	No	VR	3.75	50	50
24	66+585	+	To Village	To Village	No	VR	3.75	50	50
25	67+460	+	To Village	To Village	No	VR	3.75	50	50
26	67+937	+	To Village	To Village	No	VR	3.75	50	50

Sr. No.	Design Chainage (Km)	Junction Type (T,Y,+)	Leads to		U-Turn provision in Viaduct Spans	Category of Cross Road	Carriageway Width of Cross Road (m)	Length of Cross Road to be Developed (m)	
			Left	Right				LHS	RHS
27	70+670	+	To Silchar	To Shillong	No	NH-06	10.0	50	50
28	71+240	+	To Village	To Village	No	VR	3.75	50	50
29	72+315	+	To Village	To Village	No	VR	3.75	50	50
30	72+900	+	To Village	To Village	No	VR	3.75	50	50
31	73+785	+	To Village	To Village	No	VR	3.75	50	50
32	74+445	+	To Village	To Village	No	VR	3.75	50	50
33	74+810	+	To Village	To Village	No	VR	3.75	50	50
34	75+835	+	To Village	To Village	No	VR	3.75	50	50
35	76+260	+	To Shillong	To Silchar	No	NH-06	10.0	50	50
36	76+680	+	To Village	To Village	No	VR	3.75	50	50
37	76+770	+	To Village	To Village	No	VR	3.75	50	50
38	76+960	+	To Village	To Village	No	VR	3.75	50	50
39	77+380	+	To Village	To Village	No	VR	3.75	50	50
40	78+240	+	To Village	To Village	No	VR	3.75	50	50

Note:

1. *The Concessionaire shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in Section 3 of manual*
2. *Junction improvement under grade separators shall be carried out as per manual with proper entry/exit to crossroads and slip/service road, etc. Auxiliary lanes including storage, acceleration and deceleration lane along with physical islands to be provided*
3. *Location of grade-separated structures are indicative. Exact location should be decided in consultation with Independent Engineer*
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 shall be included by DPR consultant in Annexure to schedule-B."*

4 Road Embankment and Cut Section

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

Based on site/design requirement, the Concessionaire shall design the alignment plans and profiles of the project highway based on site/design requirement mentioned in Schedule B with approval from the Independent Engineer/Authority Engineer within the available Right of Way. However, it is clarified that bottom of subgrade level shall be at-least 1500 mm above HFL/Existing ground level for a greenfield/ bypass stretch. In case of green field stretches / realignments stretches / bypasses/ full reconstruction of existing stretches (if the existing stretches have been overtopped in past during rains /floods), the bottom of subgrade shall be 1000 mm above highest flood level (HFL)/ ground water table/ Natural ground level /pond level, whichever is higher.

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

For stability of slope upto 3 metre height, turfing can be adapted. For the slope from 3-6 metre, suitable geocell, geo-grid, geo-green etc. can be provided with suitable drainage chutes and suitable energy dissipaters as per IRC 56. For the slope more than 6 metre height, a complete slope stability analysis as per IRC:75 shall be done, and the slopes shall be compulsorily protected with stone pitching within stone masonry grid structure of 4x4 metre and suitable drains/chutes and energy dissipaters etc. shall be provided for effective drainage of the water.

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: 84-2019)

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

5 Pavement Design

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

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

5.2 Type of Pavement and Design requirement

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

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

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

5.2.3 The pavement for service road/slip roads shall be designed for projected traffic of 30 MSA subject to minimum as follows:

i. Service Roads in Built-up areas for minimum 30 MSA

ii. Slip Roads for minimum 30 MSA

iii. Service Roads in Rural Area for minimum 30 MSA

5.2.4 In case the concessionaire uses the service road as diversion road, then the pavement for service road shall be designed for a traffic minimum of 10 MSA

5.3 In order to meet the intended functional requirement of respective pavement layers on main carriageway, the minimum thickness of respective pavement layers for main carriageway and connecting cross roads/service roads/ slip roads/entry/exit locations, acceleration/ deceleration lane, right turning lanes shall be for a design life of 20 years for flexible pavement & 30 years for rigid pavement and minimum design traffic of 110MSA.

5.3.1 Deleted

5.3.2 Deleted

5.3.3 Deleted

5.3.4 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			

Note:

1. *The Pavement crust composition shall be designed in accordance with latest guidelines of IRC 58-2015.*

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 Engineer. RCC Drain shall conform to the cross- sectional features and other details as given in Annexure II to Schedule-B and shall be provided as under:

Details of RCC Drain for Main Carriageway

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	
45+645	46+440	795	45+645	46+440	795	1.2X1.2
47+100	47+240	140	46+560	46+600	40	1.2X1.2
47+280	47+320	40	46+640	46+840	200	1.2X1.2
47+500	47+660	160	47+040	47+080	40	1.2X1.2
47+740	47+940	200	47+100	47+320	220	1.2X1.2
48+160	48+180	20	47+400	47+660	260	1.2X1.2
48+220	48+274	54	47+700	47+920	220	1.2X1.2
48+780	49+020	240	48+060	48+100	40	1.2X1.2
49+360	50+040	680	48+120	48+274	154	1.2X1.2
50+080	50+100	20	48+800	49+040	240	1.2X1.2
50+140	50+540	400	49+380	50+060	680	1.2X1.2
50+620	50+880	260	50+180	50+520	340	1.2X1.2
51+180	51+220	40	50+620	50+880	260	1.2X1.2
51+240	51+380	140	51+140	51+400	260	1.2X1.2
51+740	51+820	80	51+860	52+280	420	1.2X1.2
51+860	52+240	380	52+360	52+420	60	1.2X1.2
52+360	52+460	100	52+500	52+780	280	1.2X1.2
52+500	52+740	240	52+860	52+900	40	1.2X1.2
52+840	52+880	40	52+980	53+280	300	1.2X1.2
52+960	53+260	300	53+560	53+800	240	1.2X1.2
53+600	53+640	40	53+880	53+920	40	1.2X1.2
53+720	53+800	80	53+980	54+280	300	1.2X1.2
53+880	53+920	40	54+340	54+360	20	1.2X1.2
54+000	54+120	120	54+460	54+625	165	1.2X1.2
54+140	54+220	80	54+800	54+920	120	1.2X1.2
54+460	54+625	165	54+940	54+960	20	1.2X1.2
54+810	54+920	110	55+360	55+420	60	1.2X1.2
55+340	55+420	80	55+480	55+500	20	1.2X1.2
55+560	55+580	20	55+540	55+580	40	1.2X1.2
55+660	55+760	100	55+620	55+840	220	1.2X1.2
55+780	55+800	20	55+920	55+980	60	1.2X1.2
56+080	56+260	180	56+100	56+500	400	1.2X1.2
56+300	56+520	220	56+680	56+700	20	1.2X1.2
57+160	57+256	96	56+720	56+840	120	1.2X1.2
57+320	57+340	20	57+160	57+256	96	1.2X1.2
57+420	57+540	120	57+440	57+540	100	1.2X1.2
57+580	57+660	80	57+580	57+660	80	1.2X1.2
57+700	57+880	180	57+700	57+880	180	1.2X1.2
57+940	58+020	80	58+860	58+920	60	1.2X1.2
58+300	58+420	120	59+040	59+220	180	1.2X1.2
58+900	58+920	20	59+360	59+420	60	1.2X1.2
59+340	59+720	380	59+480	59+620	140	1.2X1.2

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	
59+760	60+020	260	59+680	59+740	60	1.2X1.2
60+240	60+280	40	59+800	60+000	200	1.2X1.2
60+620	60+680	60	60+180	60+300	120	1.2X1.2
60+760	60+820	60	60+780	60+820	40	1.2X1.2
60+880	61+040	160	60+940	61+020	80	1.2X1.2
61+400	61+640	240	61+380	62+240	860	1.2X1.2
61+660	62+260	600	62+420	62+460	40	1.2X1.2
62+280	62+320	40	62+540	62+580	40	1.2X1.2
62+360	62+480	120	62+660	62+680	20	1.2X1.2
62+560	62+700	140	62+840	62+920	80	1.2X1.2
62+880	63+080	200	63+040	63+080	40	1.2X1.2
63+180	63+240	60	63+340	63+400	60	1.2X1.2
63+280	63+300	20	63+440	63+620	180	1.2X1.2
63+360	63+420	60	63+680	64+020	340	1.2X1.2
63+440	63+580	140	64+080	64+140	60	1.2X1.2
63+680	63+940	260	64+180	64+540	360	1.2X1.2
64+180	64+200	20	64+640	65+060	420	1.2X1.2
64+220	64+560	340	65+220	65+260	40	1.2X1.2
64+700	65+100	400	65+300	65+340	40	1.2X1.2
65+220	65+240	20	65+360	65+420	60	1.2X1.2
65+280	65+320	40	65+460	65+500	40	1.2X1.2
65+360	65+380	20	65+620	65+680	60	1.2X1.2
65+460	65+480	20	65+700	65+860	160	1.2X1.2
66+380	66+780	400	65+960	65+980	20	1.2X1.2
66+800	66+820	20	66+020	66+040	20	1.2X1.2
67+040	67+280	240	66+280	66+300	20	1.2X1.2
67+420	67+520	100	66+380	66+760	380	1.2X1.2
67+560	67+680	120	66+840	66+960	120	1.2X1.2
67+760	68+020	260	67+040	67+300	260	1.2X1.2
68+060	68+160	100	67+420	67+520	100	1.2X1.2
68+220	68+460	240	67+560	67+700	140	1.2X1.2
68+480	68+540	60	67+760	68+040	280	1.2X1.2
68+560	68+610	50	68+080	68+160	80	1.2X1.2
68+640	68+920	280	68+260	68+560	300	1.2X1.2
68+980	69+020	40	68+680	68+940	260	1.2X1.2
69+340	69+600	260	69+310	69+460	150	1.2X1.2
69+620	69+800	180	69+480	69+600	120	1.2X1.2
69+820	69+880	60	69+640	69+900	260	1.2X1.2
70+145	70+200	55	69+920	70+000	80	1.2X1.2
70+300	70+380	80	70+180	70+280	100	1.2X1.2
70+440	70+560	120	70+320	70+420	100	1.2X1.2
70+980	71+180	200	70+460	70+540	80	1.2X1.2

LEFT			RIGHT			Min bottom Width x Min Depth of Drain (m)
FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	FROM CHAINAGE (KM)	TO CHAINAGE (KM)	LENGTH (M)	
71+220	71+400	180	70+860	70+880	20	1.2X1.2
71+420	71+660	240	70+980	71+400	420	1.2X1.2
71+680	71+740	60	71+420	71+520	100	1.2X1.2
71+880	71+920	40	71+580	71+640	60	1.2X1.2
72+160	72+220	60	71+840	71+860	20	1.2X1.2
72+360	72+420	60	71+880	71+935	55	1.2X1.2
72+500	72+600	100	72+180	72+220	40	1.2X1.2
72+640	72+660	20	72+880	73+100	220	1.2X1.2
72+760	72+780	20	73+580	73+620	40	1.2X1.2
72+840	72+860	20	73+820	73+900	80	1.2X1.2
72+880	73+020	140	74+040	74+060	20	1.2X1.2
73+140	73+180	40	74+080	74+400	320	1.2X1.2
73+540	73+640	100	74+460	75+000	540	1.2X1.2
73+700	73+740	40	75+060	75+460	400	1.2X1.2
73+820	73+920	100	75+580	75+905	325	1.2X1.2
74+040	74+400	360	75+960	76+060	100	1.2X1.2
74+420	75+020	600	76+080	76+120	40	1.2X1.2
75+060	75+460	400	76+200	76+340	140	1.2X1.2
75+580	75+880	300	76+480	76+580	100	1.2X1.2
75+960	76+060	100	76+700	77+120	420	1.2X1.2
76+080	76+120	40	77+300	77+420	120	1.2X1.2
76+180	76+400	220	77+730	78+166	436	1.2X1.2
76+420	76+540	120	78+174	78+220	46	1.2X1.2
76+700	77+080	380	78+280	78+300	20	1.2X1.2
77+300	77+340	40	78+320	78+440	120	1.2X1.2
77+360	77+420	60				1.2X1.2
77+730	78+166	436				1.2X1.2
78+400	78+440	40				1.2X1.2
78+540	78+600	60				1.2X1.2
Total (m)		**17241**	**Total (m)**		**18062**	

Details of RCC Drain for Interchanges

Left Side			Right Side		
Ch. From	Ch. To	Length (m)	Ch. From	Ch. To	Length (m)
Interchange at km 54+760		1877	Interchange at km 54+760		1877
Interchange at km 65+010		1501	Interchange at km 65+010		1501
Interchange at km 77+705		2300	Interchange at km 77+705		2300
		5678			**5678**

Note:

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

- *Unlined drain and lined covered drain/RCC drain/Footpath cum drain shall conform to the cross- sectional features and other details specified as per section 2.10 of Annex-I of Schedule-B.*
- *The water from main carriageway to be drained to the nearest RCC drain through piping network which will be laid below slip/service. 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 slide 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 at super elevation locations and depressed/Flushed median with turfing on both side of the Drain as per IRC SP 42-2014. 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 on embankment slopes. The drainage arrangement shall include kerb, cement concrete drainage channel at the edge roadway, Cement Concrete Chutes, CC bedding, energy dissipation basin, etc. Mountable Kerb shall be provided beyond the post of MBCB to channelize storm water into chute (Clause No. 6.8.2.4 of IRC: SP:84-2019)

6.6 Drainage for Structures (Clause No. 6.8 IRC: SP: 84-2019)

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: 84-2019)

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. 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.

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:84-2019)

Details of Structures with footpaths

Sr. No.	Location at km	Skew Angle	Footpath Width(m)	Remarks
1	48+790	-	0.5	Footpath on Bridges
2	49+735	-	0.5	Footpath on Bridges
3	50+200	-	0.5	Footpath on Bridges
4	51+825	-	0.5	Footpath on Bridges
5	51+890	18	0.5	Footpath on Bridges
6	52+600	-	1.0	Footpath on Bridges
7	53+020	-	0.5	Footpath on Bridges
8	53+765	-	0.5	Footpath on Bridges
9	54+060	-	0.5	Footpath on Bridges
10	54+560	-	0.5	Footpath on Bridges
11	55+360	-	0.5	Footpath on Bridges
12	56+160	-	0.5	Footpath on Bridges
13	57+800	-	0.5	Footpath on Bridges
14	59+595	-	1.0	Footpath on Bridges
15	59+930	-	0.5	Footpath on Bridges
16	62+003	-	0.5	Footpath on Bridges
17	62+890	-	0.5	Footpath on Bridges
18	63+725	22	0.5	Footpath on Bridges
19	64+295	-	0.5	Footpath on Bridges

Sr. No.	Location at km	Skew Angle	Footpath Width(m)	Remarks
20	66+585	-	0.5	Footpath on Bridges
21	67+460	-	0.5	Footpath on Bridges
22	67+937	36	0.5	Footpath on Bridges
23	71+240	-	0.5	Footpath on Bridges
24	72+900	-	0.5	Footpath on Bridges
25	74+445	25	0.5	Footpath on Bridges
26	74+810	-	0.5	Footpath on Bridges
27	75+835	-	0.5	Footpath on Bridges
28	76+260	32	1.0	Footpath on Bridges
29	76+770	-	0.5	Footpath on Bridges
30	76+960	-	0.5	Footpath on Bridges
31	77+380	-	0.5	Footpath on Bridges

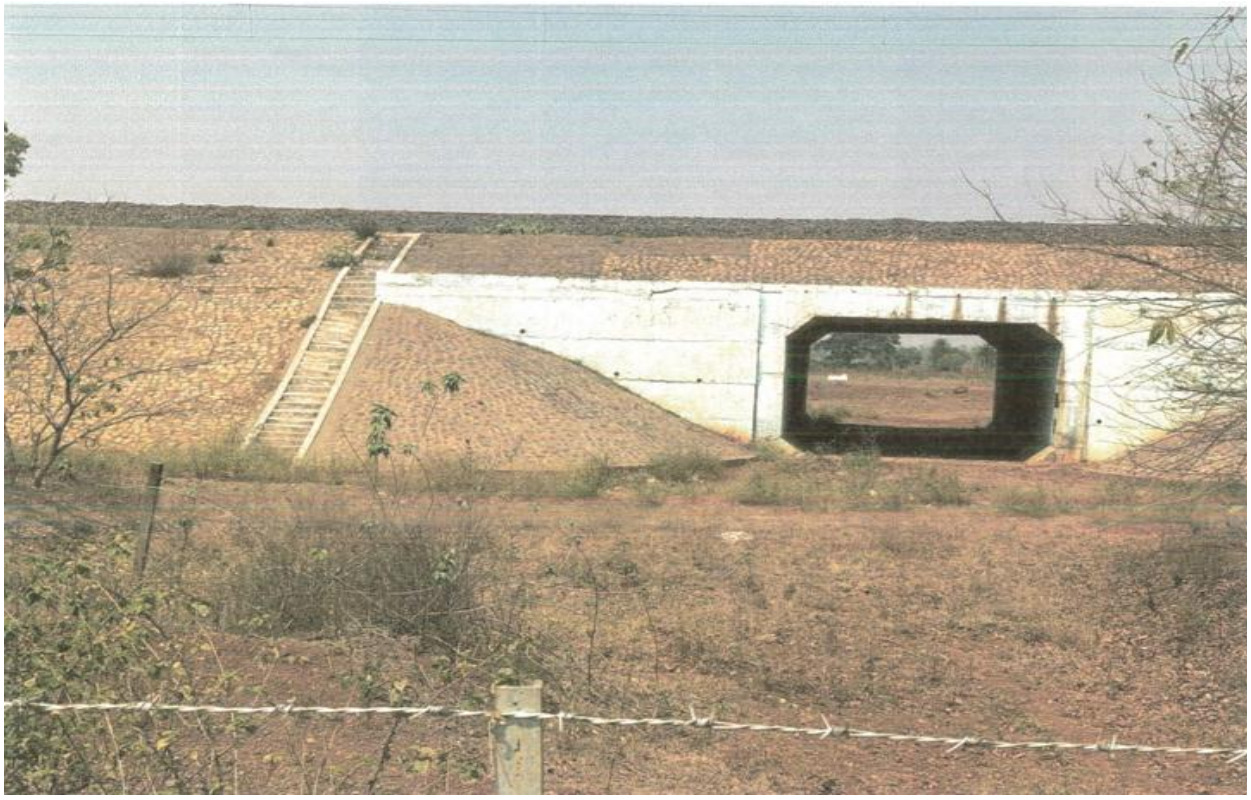
7.1.4 All bridges shall be high-level bridges.

7.1.5 All structures shall be designed to carry utility services on outer side of RCC barrier/Railing as per site requirement.

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

7.1.7 An inspection gallery along with a caged ladder (access from the deck slab) to be provided at each pier location for facilitating regular inspection of structures. An indicative General Arrangement Drawing (GAD) has been prepared and is attached at Appendix-A which may be made a part of Concession/Contract Agreement. For location where access for the deck slab is not possible from the top, the same may be provided from the bottom i.e. by providing staircase along the pier up to the top of pier cap along with an inspection platform all around the pier cap as shown in the indicative GAD. If this is not feasible, then some other kind of arrangement has to be made to provide access to the top of pier cap for inspecting bearings, underneath the box/slab structures etc.

7.1.8 Staircase (with stone masonry/concrete) in the approaches to box/slab culverts (near the end of return wall)/minor and major bridge by the side of abutments on either side of the carriageway to access the underneath box/slab culverts/bridges. An indicative picture is shown below (for understanding purpose only)



7.2 Culverts

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

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

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

7.2.3 Widening of existing RCC Pipe culverts

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

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

7.2.4 Construction of Box Culverts:

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

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

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

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

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

Culverts at Interchange Km 54+780

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+120 (Rotary)	1	5.00		Drain	New Proposed
2	0+145 (Rotary)	1	5.00	17	Drain	New Proposed

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

Culverts at Interchange Km 65+010

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

Culverts at Interchange Km 77+705

Sl. No.	Design chainage (Km)	Number of Spans	Span Arrangement (m)	Skew Angle	Culvert Crossing Type	Remarks
1	0+470 (Rotary)	1	5.00		Drain	New Proposed
2	0+345 (Ramp-1)	1	2.00		Drain	New Proposed
3	0+480 (Ramp-2)	1	2.00		Drain	New Proposed

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:84-2019)

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

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

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

Note: The locations of the utility ducts shall be finalized in consultation with Engineer/NHIDCL.

7.3 Bridges

7.3.1 Existing Bridges to be reconstructed/widened:

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

Interchange At Ch 54.780Km

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+470 (Existing SH 09 at 1st Interchange)	8	1X8	Stream	12.50	-	As per GAD	50	Re-construction
2	0+229 (Existing NH-06 at 3rd Interchange)	25.00	1X25	Stream	11.00	-	As per GAD	-	New construction

Existing narrow bridges proposed to be retained and widened:

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

Note:

1 All Major and Minor Bridges to be designed for approach protection with concrete Toe wall with filter media and stone/ block pitching up to HFL of bridge +0.6 m with full height stone/ block pitching in cone filling portion of all four sides of abutments.

2 All river bridges & underpasses without slip roads shall be provided with steps for accessing the bottom in all two-cone filling portion for easy assessable bridges and approaches.

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

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Number of Spans	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
						MCW	SR			
1	46+500	120	1	120.00	Stream	2X13.50	-	As per GAD		New construction
2	48+330	112	1	112.00	Stream	2X13.50	-	As per GAD		New construction
3	48+580	16.00	1	16.00 (Skew length- 25.988m)	Stream	2 x 13.50 (Skew width- 2X21.928 m)	-	As per GAD	**52**	New construction
4	49+220	11.40	1	10.00	Stream	2 X 15.10	-	As per GAD		New construction
5	51+470	40	1	40.00	Stream	2 x 13.50	-	As per GAD		New construction
6	53+460	18.00	1	18.00 (RHS)	Stream	1 X 13.50	-	As per GAD		New construction
	53+460	25.00	1	25.00 (LHS)	Stream	1 X 13.50	-	As per GAD		New construction
7	55+030	11.70	1	10.00	Stream	35.00	-	As per GAD		New construction

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Number of Spans	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
						MCW	SR			
8	56+005	10.00	1	10.00 (Skew length- 14.142m)	Stream	2 X 13.50 (Skew width- 2X19.092 m)	-	As per GAD	**45**	New construction
9	56+985	25.00	1	25.00	Stream	2 x 13.50	-	As per GAD		New construction
10	58+690	15.00	1	15.00 (Skew length- 16.295m)	Stream	2 x 13.50 (Skew width- 2X14.666 m)	-	As per GAD	**23**	New construction
11	58+955	15.00	1	15.00 (Skew length- 15.529m)	Stream	2 x 13.50 (Skew width- 2X13.976 m)	-	As per GAD	**15**	New construction
12	60+440	9.200	1	8.00 (Skew length- 8.569m)	Stream	2 X 13.50 (Skew width- 2X14.460 m)	-	As per GAD	**21**	New construction
13	61+205	15.00	1	15.00 (Skew length- 18.312m)	Stream	2 x 13.50 (Skew width- 2X16.480 m)	-	As per GAD	**35**	New construction
14	61+305	11.800	1	10.00 (Skew length- 10.403m)	Stream	34.00 (Skew width- 35.37m)	-	As per GAD	**16**	New construction
15	64+600	11.400	1	10.00 (Skew length- 13.250m)	Stream	2 X 13.50 (Skew width- 2X17.888 m)	-	As per GAD	**41**	New construction
16	66+185	20	1	20.00	Stream	2 x 13.50	-	As per GAD		New construction
17	67+005	11.400	1	10.00	Stream	2 X 15.10	-	As per GAD		New construction
18	67+385	11.400	1	10.00(Skew length- 10.785m)	Stream	2 X 13.50 (Skew width- 2X12.295 m)	-	As per GAD	**22**	New construction

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Number of Spans	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
						MCW	SR			
19	67+530	30.00	1	30.00	Stream	2 x 15.10	-	As per GAD		New construction
20	67+715	40.00	1	40.00	Stream	2 x 15.10	-	As per GAD		New construction
21	68+615	11.70	1	10.00 (Skew length- 13.250m)	Stream	36.00 (Skew width- 47.70m)	-	As per GAD	**41**	New construction
22	69+165	290	1 1 1	70.00 150.00 70.00	Stream	2 x 15.10	-	As per GAD		New construction
23	70+085	120	3	40.00	Stream	2 x 15.10	-	As per GAD		New construction
24	71+955	40	1	40.00	Stream	2 x 13.50	-	As per GAD		New construction
25	72+100	11.800	1	10.00 (Skew length- 12.361m)	Stream	2 X 13.50 (Skew width- 2X16.687 m)	-	As per GAD	**36**	New construction
26	73+240	11.800	1	10.00 (Skew length- 10.263m)	Stream	2 X 13.50 (Skew width- 2X13.855 m)	-	As per GAD	**13**	New construction
27	73+665	9.200	1	8.00 (Skew length- 10.017m)	Stream	2 X 13.50 (Skew width- 2X16.904 m)	-	As per GAD	**37**	New construction
28	74+000	11.400	1	10.00 (Skew length- 10.864m)	Stream	2 X 13.50 (Skew width- 2X14.666 m)	-	As per GAD	**23**	New construction
29	75+910	9.200	1	8.00 (Skew length- 15.097m)	Stream	2 X 13.50 (Skew width- 2X25.476 m)	-	As per GAD	**58**	New construction
30	76+670	11.40	1	10.00	Stream	2 X 15.10	-	As per GAD		New construction

Sr. No	Design Chainage (Km)	Total Proposed length (m)	Number of Spans	Span arrangement	Type of Crossing	Total Proposed width (m)		Typical Cross Section of Manual	Skew Angle	Remarks
						MCW	SR			
31	77+630	140.00	4	35.00	Stream	2 x 15.10	-	As per GAD		New construction
32	78+480	11.40	1	10.00 (Skew length- 17.013m)	Stream	2 X 13.50 (Skew width- 2X17.013 m)		As per GAD	**54**	

Interchange At Ch 54.780Km

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			
NIL									

Interchange At Ch 65.010Km

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+380 (Ramp-1)	160.00	4X40	Stream	12.50	-	As per GAD	-	New construction
2	0+730 (Ramp-1)	80.00	2X40	Stream	12.50	-	As per GAD	-	New construction
3	0+063 (Ramp-2)	105	3X35	Stream	12.50	-	As per GAD	-	New construction
4	0+500 (Ramp-2)	560	14X40	Stream	12.50	-	As per GAD	-	New construction
5	0+638 (Ramp-3)	105	3X35	Stream	12.50	-	As per GAD	-	New construction

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			
6	0+748 (Ramp-3)	45	1X20+1X25	Stream	12.50	-	As per GAD	-	New construction
7	0+505 (Ramp-4)	110	3X30+1X18	Stream	12.50	-	As per GAD	-	New construction

Interchange At Ch 77.705Km

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+065 (Ramp-1)	20.00	1X20	Stream	12.50	-	As per GAD	-	New construction
2	0+230 (Ramp-1)	40.00	1X40	Stream	12.50	-	As per GAD	-	New construction
3	0+570 (Ramp-2)	40.00	1X40	Stream	12.50	-	As per GAD	-	New construction
4	0+578 (Ramp-4)	30.00	1X30	Stream	12.50	-	As per GAD	-	New construction

Note:

1. *The span lengths mentioned are bare minimum and should not be reduced. Any increase in length upto 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. *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.*
3. *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.*
4. *Requisite Stream/River Training work wherever required for the structures are to be considered within the scope of the work*

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

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

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

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

7.3.5 Structures in marine environment: Nil.

7.4 Railroad Bridges (ROB/RUB)

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

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

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

Note:

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

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

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

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

7.5 Grade Separated Structures

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

7.6 FoB/Skywalks

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

Sr. No.	Location at km	FoB Type	Remarks
Nil			

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

For Main Carriageway

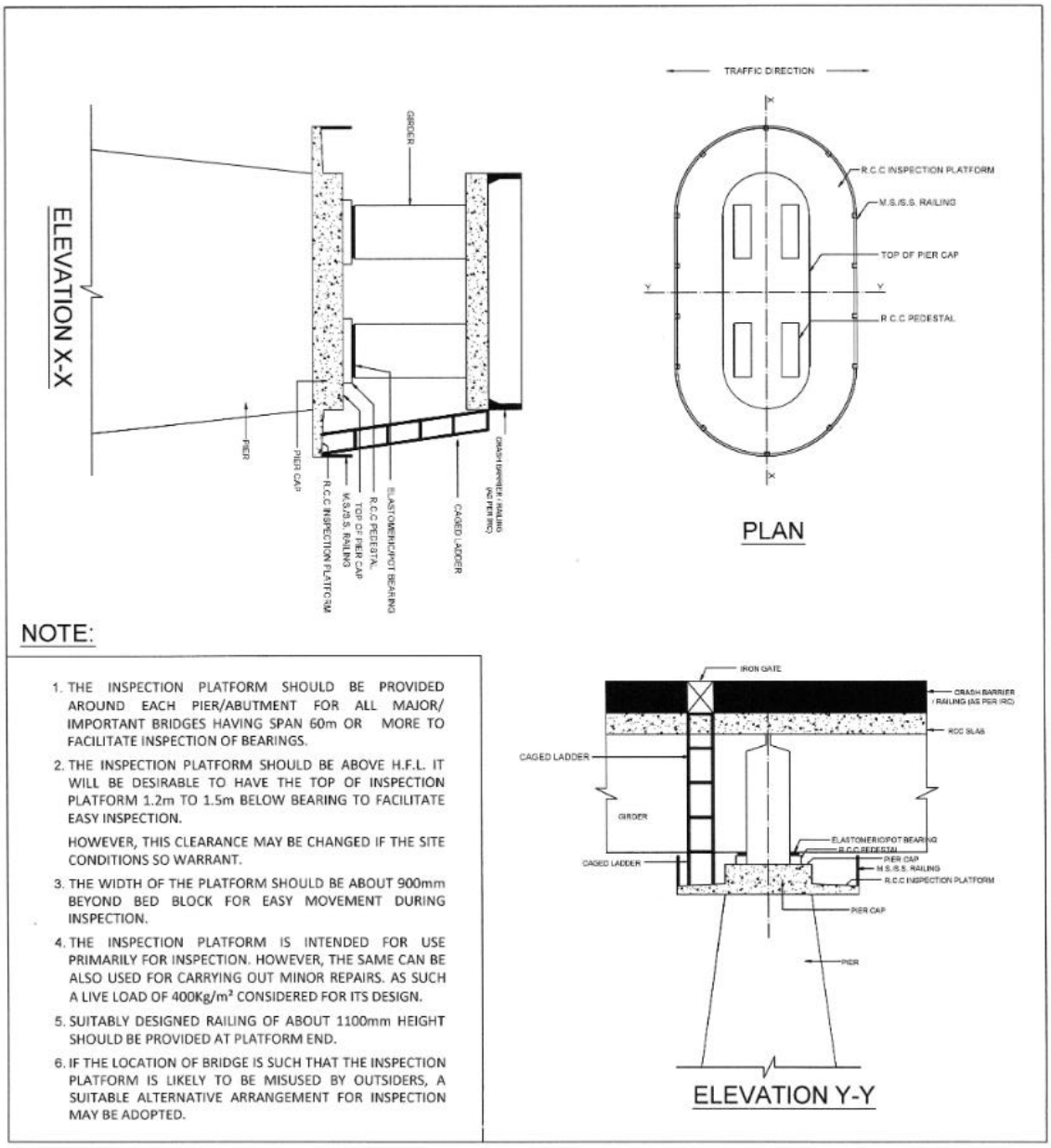
S. No.	Type of Structure	New Proposed
1	Major Bridge	1
2	Minor Bridge	20
3	Viaduct	11
4	Box Culvert	123
5	VOP	11
6	VUP	1
7	LVUP	0
8	SVUP	3
9	Utility underpass	1
10	Overpass	20
11	Underpass	5
Total		**196**

For Interchanges

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

Note:

a. Founding level of foundation cannot be raised above the founding level shown in GAD. If the founding level of foundation required is deeper than the founding level shown in GAD due to reasons well established and approved by the Authority, the extra depth of foundation shall not be treated as come under the clause of Change of Scope.
b. Pile cap top level cannot be lowered below the level shown in the GAD
c. Span arrangement - to be decided as per IWAI/Irrigation Authority/Other concerned Authority guidelines considering navigational requirement.
d. 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
e. Individual length of spans proposed in GAD are not to be reduced
f. Project highway is proposed to be constructed to four lane configurations with provision for widening in future. As such, superstructure of all bridges, culverts and structures is to be designed for edge movement of the vehicle considering stitching of new superstructure in future due to widening for additional lane.



8 Traffic Control Devices and Road Safety Works

8.1 Traffic control devices and road safety works shall provide in accordance with Section 9 of the IRC: SP: 84-2019.

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 shall be provided in accordance with Section-9 of the manual.

The Safety Barrier length proposed are excluding the safety barrier already proposed on Culverts, Grade Separated Structures, Interchange, Bridges, RoB and RUB as applicable cross sections respectively.

End Treatment of Steel barriers/Rope Barrier shall be specified i.e**., MELT or P-4 confirming to EN 1317-4,** TT, MBCB barrier to Concrete Barrier End Treatment to Concrete barrier shall be done.

The details of the Thrie-beam Crash barrier locations are as below:

For Main Carriageway

LEFT SIDE				RIGHT SIDE			
From (m.)	**To (m.)**	**Length (m)**	**Remark**	**From (m.)**	**To (m.)**	**Length (m)**	**Remark**
46+560	46+955	395	High Emb.	46+860	46+880	20	High Emb.
47+040	47+100	60	High Emb.	46+920	46+955	35	High Emb.
47+340	47+500	160	High Emb.	47+320	47+360	40	High Emb.
47+660	47+740	80	High Emb.	48+000	48+020	20	High Emb.
47+980	48+060	80	High Emb.	48+640	48+720	80	High Emb.
48+100	48+140	40	High Emb.	49+040	49+160	120	High Emb.
48+640	48+740	100	High Emb.	49+340	49+380	40	High Emb.
49+080	49+160	80	High Emb.	50+100	50+120	20	High Emb.
50+572	50+620	48	High Emb.	50+140	50+160	20	High Emb.
50+900	51+096	196	High Emb.	50+572	50+620	48	High Emb.
51+104	51+180	76	High Emb.	50+920	51+096	176	High Emb.
51+540	51+640	100	High Emb.	51+520	51+600	80	High Emb.
51+660	51+740	80	High Emb.	51+620	51+720	100	High Emb.
52+280	52+320	40	High Emb.	51+740	51+780	40	High Emb.
52+340	52+360	20	High Emb.	52+300	52+360	60	High Emb.
52+880	52+920	40	High Emb.	52+440	52+480	40	High Emb.
53+320	53+400	80	High Emb.	52+800	52+860	60	High Emb.
53+520	53+560	40	High Emb.	52+920	52+980	60	High Emb.
53+800	53+860	60	High Emb.	53+300	53+400	100	High Emb.
54+120	54+140	20	High Emb.	53+520	53+540	20	High Emb.
54+240	54+420	180	High Emb.	53+820	53+860	40	High Emb.
54+940	55+024	84	High Emb.	54+280	54+340	60	High Emb.
55+036	55+300	264	High Emb.	54+380	54+420	40	High Emb.
55+440	55+480	40	High Emb.	54+980	55+024	44	High Emb.
55+500	55+540	40	High Emb.	55+036	55+300	264	High Emb.
55+580	55+640	60	High Emb.	55+440	55+480	40	High Emb.
55+860	55+920	60	High Emb.	55+860	55+900	40	High Emb.

LEFT SIDE				RIGHT SIDE			
From (m.)	To (m.)	Length (m)	Remark	From (m.)	To (m.)	Length (m)	Remark
56+540	56+616	76	High Emb.	56+520	56+560	40	High Emb.
56+624	56+940	316	High Emb.	56+624	56+660	36	High Emb.
57+040	57+120	80	High Emb.	56+880	56+940	60	High Emb.
57+360	57+400	40	High Emb.	57+040	57+060	20	High Emb.
58+080	58+300	220	High Emb.	57+264	57+400	136	High Emb.
58+520	58+640	120	High Emb.	57+920	57+940	20	High Emb.
58+860	58+900	40	High Emb.	58+020	58+640	620	High Emb.
59+020	59+320	300	High Emb.	59+260	59+340	80	High Emb.
59+720	59+740	20	High Emb.	59+640	59+660	20	High Emb.
60+060	60+200	140	High Emb.	59+740	59+780	40	High Emb.
60+320	60+400	80	High Emb.	60+040	60+160	120	High Emb.
60+680	60+700	20	High Emb.	60+320	60+400	80	High Emb.
60+720	60+740	20	High Emb.	60+500	60+600	100	High Emb.
60+840	60+860	20	High Emb.	60+660	60+700	40	High Emb.
61+040	61+140	100	High Emb.	60+840	60+920	80	High Emb.
61+340	61+400	60	High Emb.	61+060	61+140	80	High Emb.
62+480	62+560	80	High Emb.	61+340	61+380	40	High Emb.
62+700	62+760	60	High Emb.	62+340	62+400	60	High Emb.
62+800	62+840	40	High Emb.	62+460	62+540	80	High Emb.
63+100	63+160	60	High Emb.	62+600	62+660	60	High Emb.
63+240	63+280	40	High Emb.	62+700	62+820	120	High Emb.
63+300	63+360	60	High Emb.	62+940	63+020	80	High Emb.
64+060	64+100	40	High Emb.	63+120	63+200	80	High Emb.
64+140	64+180	40	High Emb.	63+260	63+340	80	High Emb.
64+580	64+594	14	High Emb.	63+420	63+440	20	High Emb.
64+606	64+700	94	High Emb.	63+620	63+680	60	High Emb.
65+120	65+220	100	High Emb.	64+580	64+594	14	High Emb.
65+260	65+280	20	High Emb.	64+606	64+640	34	High Emb.
65+340	65+360	20	High Emb.	65+120	65+140	20	High Emb.
65+400	65+460	60	High Emb.	65+160	65+200	40	High Emb.
65+480	65+780	300	High Emb.	65+440	65+460	20	High Emb.
65+820	66+120	300	High Emb.	65+560	65+620	60	High Emb.
66+260	66+380	120	High Emb.	65+860	65+920	60	High Emb.
66+880	66+920	40	High Emb.	66+060	66+120	60	High Emb.
67+280	67+379	99	High Emb.	66+340	66+380	40	High Emb.
67+391	67+420	29	High Emb.	66+760	66+820	60	High Emb.

LEFT SIDE				RIGHT SIDE			
From (m.)	To (m.)	Length (m)	Remark	From (m.)	To (m.)	Length (m)	Remark
67+550	67+560	10	High Emb.	67+300	67+340	40	High Emb.
67+740	67+760	20	High Emb.	67+360	67+379	19	High Emb.
68+160	68+220	60	High Emb.	67+391	67+420	29	High Emb.
68+620	68+640	20	High Emb.	67+550	67+560	10	High Emb.
68+920	68+980	60	High Emb.	67+740	67+760	20	High Emb.
69+310	69+340	30	High Emb.	68+040	68+080	40	High Emb.
69+600	69+620	20	High Emb.	68+180	68+260	80	High Emb.
69+800	69+820	20	High Emb.	68+560	68+610	50	High Emb.
69+880	69+980	100	High Emb.	68+620	68+680	60	High Emb.
70+000	70+025	25	High Emb.	68+940	69+000	60	High Emb.
70+220	70+240	20	High Emb.	69+620	69+640	20	High Emb.
70+260	70+300	40	High Emb.	70+145	70+180	35	High Emb.
70+400	70+440	40	High Emb.	70+300	70+320	20	High Emb.
70+860	70+980	120	High Emb.	70+440	70+460	20	High Emb.
71+760	71+860	100	High Emb.	70+880	70+940	60	High Emb.
72+000	72+020	20	High Emb.	71+660	71+680	20	High Emb.
72+060	72+094	34	High Emb.	71+720	71+820	100	High Emb.
72+240	72+280	40	High Emb.	71+860	71+880	20	High Emb.
72+440	72+480	40	High Emb.	71+975	72+094	119	High Emb.
72+700	72+720	20	High Emb.	72+106	72+160	54	High Emb.
73+100	73+120	20	High Emb.	72+240	72+312	72	High Emb.
73+180	73+200	20	High Emb.	72+320	72+360	40	High Emb.
75+020	75+040	20	High Emb.	72+380	72+420	40	High Emb.
75+480	75+520	40	High Emb.	72+440	72+500	60	High Emb.
75+540	75+580	40	High Emb.	72+540	72+780	240	High Emb.
76+140	76+160	20	High Emb.	72+800	72+840	40	High Emb.
76+560	76+600	40	High Emb.	73+160	73+180	20	High Emb.
77+100	77+280	180	High Emb.	73+640	73+660	20	High Emb.
78+174	78+340	166	High Emb.	73+720	73+740	20	High Emb.
78+360	78+400	40	High Emb.	74+060	74+080	20	High Emb.
78+486	78+520	34	High Emb.	75+000	75+060	60	High Emb.
				75+460	75+580	120	High Emb.
				76+060	76+080	20	High Emb.
				76+140	76+200	60	High Emb.
				76+400	76+440	40	High Emb.
				77+120	77+300	180	High Emb.

LEFT SIDE				RIGHT SIDE			
From (m.)	**To (m.)**	**Length (m)**	**Remark**	**From (m.)**	**To (m.)**	**Length (m)**	**Remark**
				78+240	78+280	40	High Emb.
				78+486	78+520	34	High Emb.
For Median		31572		For Median		31572	
TOTAL(m)		**38822**		**TOTAL(m)**		**37941**	

For Interchanges

LEFT SIDE				RIGHT SIDE			
From (m.)	**To (m.)**	**Length (m)**	**Remark**	**From (m.)**	**To (m.)**	**Length (m)**	**Remark**
Interchange at km 54+760		1707	High Emb.	Interchange at km 54+760		1707	High Emb.
Interchange at km 65+010		1016	High Emb.	Interchange at km 65+010		1016	High Emb.
Interchange at km 77+705		280	High Emb.	Interchange at km 77+705		280	High Emb.
TOTAL(m)		**3003**		**TOTAL(m)**		**3003**	

a. Thrie-Beam metal crash barriers shall be provided in entire length at both edge of median as per TCS referred in schedule-B but excluding stretches covered by bridges/structures and stretches covered by median where concrete barriers to be provided.
b. Thrie-Beam metal crash barriers shall be provided in entire length on outer side earthen shoulder of each main carriageway and Loops/ Ramps of interchanges as per TCS referred in schedule-B but excluding stretches covered by bridges/structures, and RE wall structures, where concrete barriers to be provided.
c. Concrete barriers shall be provided on bridges/structures, by RE Walls/ retaining walls as specified in Schedule B and Schedule D.
d. The above mentioned locations of Thrie Beam are indicative and minimum. The Concessionaire has to install the Thrie Beam as per site requirements and relevant IRC and any increase upto 10% of the scope provided above 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%.

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 along side the road is the essence of the contract for environment preservation, sustainability, and safety of all stake holders. Hence, the Concessionaire shall undertake detailed investigations and design of all cut/ fill slopes beyond 3m depth / height for safety & stability. Investigations shall inter-alia include fill soil, sub-soil/ rock strata for engineering properties, faults & fractures, geological studies. The stability of hills & the cut slopes are to be ensured with appropriate slope stabilization, erosion control and landslide correction measures in accordance with IRC: SP 48:1998, IRC: 56-2011 and manual for insuring safety & longevity of the slopes and the roads. The Concessionaire shall be responsible for precise assessment of the actual requirement & prepare design for slope protection & stabilization as per manual. Top down excavation, stable slopes with proper benches, and properly planned surface and sub-surface drainage arrangements shall be key part of the concessionaire's responsibility. The hill cutting should invariably be done in 1H:1V slope with a bench of 2m width with Catch Water Drain at a height of every of 6-7m. If the Concessionaire adopts a steeper cut slope, the same is to be substantiated with requisite soil investigations, design and the Slope Stabilisation Measures and will have to be done at the cost of the Concessionaire. Also, the Cut slopes should be designed in such a manner as to keep the toe line of cutting within available RoW and protection measures like rock bolting/ soil nailing/ reinforcing, as appropriate, shall be applied to ensure both stability and protection from erosion/ withering as per Engineering Guidelines on Landslide Mitigation Measures for Indian Roads IRC: SP-106-2015. Concessionaire shall obtain approval/ no objection from the Independent Engineer and Authority before undertaking construction. 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 becomes part of the overall scope of slope protection/stabilization. Provision for Coir blanket as part of the slope protection/erosion

control measures has been made for a minimum length of 6,835 m. The coir matting shall be installed in accordance with the approved drawings, manufacturer's recommendations, and relevant specifications to ensure effective erosion control and stabilization of the slope surface. The Concessionaire shall ensure that the coir mats are properly anchored, overlapped, and tensioned to prevent displacement during rainfall or runoff. Necessary turfing, seeding, or plantation works, wherever required, shall be carried out immediately after laying the coir matting to achieve vegetation growth and long-term stability. Moreover, slope management with drainage maintenance would be essential part of the maintenance period of concessionaire. The Concessionaire shall obtain approval / No Objection Certificate from the Independent Engineer and the Authority prior to undertaking the construction and shall maintain records of source, quality, and installation of coir blankets for verification.

Any increase in length will not be considered as a change of scope. 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 Manual under clause "13.13" of section 13 (Special Requirement for Hill Road)

No Muck dumping sites will be proposed within Reserved Forest area. The muck dumping sites shall be identified by the concessionaire in consultation with the Local village head, District Administration & Forest department for dumping of muck, and necessary clearances/NOCs/permission shall be obtained by the Concessionaire in addition to the applicable permissions and clearances as stated in Schedule E.

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.

RCC Crash Barrier with Friction Slab

S. No.	Item	LHS		RHS		Total Length (m)	Location	Remarks
		(From)	(To)	(From)	(To)			
1	RCC Crash Barrier with Friction Slab for Main Carriageway	46+955	46+961	46+955	46+961	12	At the top of RE wall	At the top of RE wall (Structure length shall be deducted)
		46+969	47+040	46+969	47+040	142		
		48+386	48+570	48+386	48+570	368		
		48+590	48+640	48+590	48+640	100		
		49+160	49+214	49+160	49+214	108		
		49+226	49+340	49+226	49+340	228		
		51+400	51+450	51+400	51+450	100		
		51+490	51+520	51+490	51+520	60		
		53+400	53+450	53+400	53+450	100		
		53+475	53+520	53+475	53+520	90		
		54+625	54+800	54+625	54+800	350		
		55+980	56+000	55+980	56+000	40		
		56+010	56+080	56+010	56+080	140		
		56+940	56+975	56+940	56+975	70		
		57+000	57+040	57+000	57+040	80		
		58+640	58+680	58+640	58+680	80		
		58+700	58+860	58+700	58+860	320		
		58+920	58+940	58+920	58+940	40		
		58+960	59+020	58+960	59+020	120		
		60+400	60+435	60+400	60+435	70		
		60+445	60+500	60+445	60+500	110		
		61+140	61+200	61+140	61+200	120		
		61+215	61+300	61+215	61+300	170		
		61+310	61+340	61+310	61+340	60		
		66+120	66+180	66+120	66+180	120		
		66+200	66+260	66+200	66+260	120		
		66+960	67+000	66+960	67+000	80		
		67+010	67+040	67+010	67+040	60		
		70+560	70+650	70+560	70+650	180		
		70+687	70+860	70+687	70+860	346		
		73+200	73+234	73+200	73+234	68		
		73+246	73+540	73+246	73+540	588		
		73+670	73+700	73+670	73+700	60		
		73+740	73+780	73+740	73+780	80		
		73+790	73+820	73+790	73+820	60		
		73+920	73+994	73+920	73+994	148		
		74+006	74+040	74+006	74+040	68		
		75+915	75+960	75+915	75+960	90		
		76+600	76+654	76+600	76+654	108		
		76+666	76+676	76+666	76+676	20		

S. No.	Item	LHS		RHS		Total Length (m)	Location	Remarks
		(From)	(To)	(From)	(To)			
		76+684	76+700	76+684	76+700	32		
		77+420	77+560	77+420	77+560	280		
		77+700	77+730	77+700	77+730	60		
		78+440	78+474	78+440	78+474	68		
		Total Length (m)				**5714**		
2	RCC Crash Barrier with Friction Slab for Ramps and Loops	Interchange at Km 54+766				Nil	At the top of RE wall	At the top of RE wall (Structure length shall be deducted)
		Interchange at Km 65+010				1144		
		Interchange at Km 77+705				720		
		Total Length (m)				**1864**		

Retaining Wall/ Stone Pitching/Toe Wall/Breast Wall

RCC Retaining Wall- (For Main Carriageway)

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
46+560	46+955	395	47+340	47+360	20
47+040	47+100	60	48+640	48+700	60
47+240	47+260	20	49+060	49+160	100
47+340	47+360	20	49+340	49+380	40
47+400	47+500	100	50+600	50+620	20
47+680	47+700	20	50+920	51+060	140
48+020	48+060	40	51+680	51+720	40
48+100	48+120	20	54+380	54+420	40
48+640	48+720	80	54+980	55+024	44
49+100	49+140	40	55+036	55+180	144
50+600	50+620	20	55+440	55+460	20
50+920	50+980	60	56+900	56+940	40
51+160	51+180	20	57+320	57+380	60
51+220	51+240	20	58+200	58+400	200
51+680	51+720	40	59+340	59+360	20
53+820	53+840	20	60+060	60+100	40
54+380	54+420	40	60+120	60+140	20
54+960	54+980	20	61+080	61+140	60
55+000	55+024	24	62+480	62+540	60
55+036	55+160	124	62+580	62+640	60
55+440	55+480	40	62+700	62+720	20
55+880	55+920	40	62+960	63+020	60
56+540	56+616	76	63+140	63+180	40
56+624	56+700	76	63+200	63+220	20
56+780	56+940	160	63+260	63+320	60
57+040	57+100	60	63+420	63+440	20

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
58+260	58+280	20	64+580	64+594	14
60+080	60+100	20	65+860	65+900	40
60+120	60+140	20	66+100	66+120	20
61+340	61+360	20	67+391	67+420	29
62+540	62+560	20	67+550	67+560	10
64+606	64+680	74	68+580	68+610	30
65+160	65+180	20	68+620	68+680	60
65+340	65+360	20	68+940	69+000	60
65+440	65+460	20	69+620	69+640	20
65+520	66+120	600	70+145	70+180	35
66+260	66+360	100	70+300	70+320	20
66+880	66+960	80	70+440	70+460	20
67+300	67+379	79	70+900	70+940	40
67+550	67+560	10	71+700	71+820	120
68+940	68+980	40	71+975	72+094	119
69+310	69+340	30	72+106	72+140	34
69+800	69+820	20	72+240	72+312	72
69+880	70+025	145	72+320	72+340	20
70+220	70+280	60	72+380	72+420	40
70+400	70+420	20	72+460	72+500	40
70+860	70+920	60	72+660	72+680	20
71+780	71+860	80	72+700	72+760	60
72+080	72+094	14	73+640	73+660	20
72+240	72+280	40	75+480	75+520	40
75+500	75+520	20	76+140	76+200	60
75+540	75+560	20	76+360	76+380	20
76+560	76+600	40	76+400	76+440	40
77+100	77+280	180	77+180	77+300	120
78+200	78+340	140	78+486	78+520	34
		3647.000			**2705.000**

RCC Retaining Wall- (For Interchanges)

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
Interchange at km 54+760		1397	Interchange at km 54+760		1397
Interchange at km 65+010		260	Interchange at km 65+010		260
Interchange at km 77+705		476	Interchange at km 77+705		476
		2133			**2133**

Note:

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

a. 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.

b. In addition to above retaining wall mentioned above, cross wall shall be provided behind each abutment.

c. 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.

d. 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 upto 10% of shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16. It is to clarify that for increase in length beyond 10%, the Change of scope shall be applicable only for quantity beyond additional 10%.

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

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
45+645	45+960	315	45+645	46+440	795
45+980	46+420	440	46+560	46+580	20
47+120	47+240	120	46+640	46+840	200
47+280	47+320	40	47+040	47+080	40
47+500	47+660	160	47+100	47+320	220
47+740	47+940	200	47+400	47+660	260
48+240	48+260	20	47+700	47+900	200
48+820	49+020	200	48+060	48+080	20
49+380	50+000	620	48+120	48+274	154
50+200	50+520	320	48+880	49+040	160
50+620	50+860	240	49+380	50+040	660
51+240	51+360	120	50+200	50+440	240
51+780	51+800	20	50+640	50+880	240
51+860	52+220	360	51+140	51+380	240
52+380	52+420	40	51+860	52+280	420
52+520	52+680	160	52+520	52+760	240
52+960	53+220	260	53+000	53+280	280
53+740	53+780	40	53+700	53+800	100

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
53+880	53+900	20	54+000	54+260	260
54+040	54+100	60	54+500	54+625	125
54+160	54+200	40	54+810	54+900	90
54+480	54+540	60	55+640	55+820	180
54+560	54+625	65	56+120	56+260	140
54+840	54+920	80	56+300	56+500	200
55+360	55+420	60	56+740	56+820	80
55+660	55+720	60	57+480	57+520	40
56+100	56+260	160	57+600	57+640	40
56+320	56+520	200	57+740	57+880	140
57+180	57+256	76	58+860	58+920	60
57+440	57+540	100	59+040	59+220	180
57+600	57+660	60	59+500	59+620	120
57+720	57+860	140	59+680	59+740	60
57+940	58+000	60	59+800	59+940	140
58+300	58+400	100	60+180	60+280	100
59+340	59+700	360	60+960	61+000	40
59+780	60+000	220	61+400	61+660	260
60+880	61+020	140	61+680	62+240	560
61+420	61+620	200	62+860	62+920	60
61+680	62+180	500	63+040	63+060	20
62+360	62+460	100	63+360	63+400	40
62+580	62+680	100	63+460	63+600	140
62+900	63+060	160	63+700	63+920	220
63+200	63+220	20	64+180	64+220	40
63+380	63+420	40	64+240	64+320	80
63+460	63+560	100	64+340	64+500	160
63+680	63+900	220	64+640	65+060	420
64+240	64+320	80	65+220	65+260	40
64+340	64+520	180	65+300	65+340	40
64+700	64+740	40	65+360	65+420	60
64+780	65+100	320	65+480	65+500	20
66+380	66+760	380	65+620	65+680	60
67+040	67+280	240	65+700	65+840	140
67+420	67+500	80	65+960	65+980	20
67+560	67+680	120	66+380	66+760	380
67+760	68+020	260	66+840	66+860	20
68+060	68+140	80	66+900	66+960	60
68+220	68+440	220	67+060	67+280	220
68+480	68+540	60	67+420	67+520	100
68+560	68+580	20	67+580	67+700	120
68+640	68+900	260	67+760	68+020	260
69+340	69+580	240	68+080	68+160	80

Left Side			Right Side		
Ch. From	Ch. To	Length (m)	Ch. From	Ch. To	Length (m)
69+620	69+700	80	68+300	68+500	200
69+740	69+780	40	68+520	68+540	20
69+820	69+860	40	68+700	68+920	220
70+145	70+200	55	69+340	69+400	60
70+300	70+380	80	69+480	69+600	120
70+440	70+560	120	69+640	69+880	240
71+000	71+180	180	69+920	70+000	80
71+220	71+380	160	70+180	70+280	100
71+420	71+520	100	70+340	70+420	80
71+540	71+640	100	70+480	70+540	60
71+700	71+740	40	70+980	71+300	320
71+880	71+920	40	71+440	71+500	60
72+900	72+940	40	71+900	71+920	20
73+580	73+620	40	74+080	74+280	200
74+040	74+400	360	74+300	74+340	40
74+440	74+640	200	74+360	74+400	40
74+660	74+820	160	74+460	74+640	180
74+880	75+000	120	74+740	74+980	240
75+060	75+300	240	75+060	75+180	120
75+360	75+440	80	75+240	75+400	160
75+580	75+700	120	75+580	75+700	120
75+720	75+760	40	75+720	75+760	40
75+780	75+880	100	75+780	75+905	125
75+980	76+040	60	75+960	76+040	80
76+080	76+100	20	76+080	76+100	20
76+200	76+400	200	76+220	76+320	100
76+440	76+540	100	76+500	76+540	40
76+700	77+060	360	76+700	77+100	400
77+300	77+340	40	77+300	77+340	40
77+760	77+820	60	77+360	77+400	40
77860	78166	306	77+760	78+140	380
			78+174	78+200	26
			78+340	78+360	20
			78400	78420	20
		13437			**14115**

Breast wall (For Interchanges)

Left Side			Right Side		
Ch. From	Ch. To	Length (m)	Ch. From	Ch. To	Length (m)
Interchange at km 54+760		1877	Interchange at km 54+760		1877
Interchange at km 65+010		1501	Interchange at km 65+010		1501
Interchange at km 77+705		2300	Interchange at km 77+705		2300

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
		5678			**5678**

Note: 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 Authority 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%.
Breast wall of suitable height (as per site requirement) shall be provided to accommodate the highway cross section within the available/proposed ROW and the same upto an increase of 10% of the proposed scope 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%.

Stone Pitching for Main Carriageway

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
46560	46955	395	47320	47360	40
47040	47100	60	47680	47700	20
47240	47260	20	48000	48060	60
47340	47500	160	48100	48120	20
47660	47680	20	48640	48720	80
47700	47740	40	49040	49060	20
47980	48020	40	49100	49140	40
48120	48140	20	49360	49380	20
48640	48700	60	50100	50120	20
48720	48740	20	50140	50160	20
49060	49160	100	50572	50620	48
49340	49360	20	50920	50980	60
50572	50620	48	51060	51096	36
50900	51060	160	51520	51580	60
51080	51096	16	51620	51720	100
51104	51180	76	51740	51780	40
51220	51240	20	52300	52360	60
51580	51640	60	52440	52480	40
51660	51720	60	52800	52860	60
52300	52320	20	52920	52980	60
52340	52360	20	53340	53400	60
52880	52920	40	53520	53540	20
53340	53400	60	53820	53840	20
53520	53560	40	54280	54320	40
53800	53820	20	54380	54420	40
53840	53860	20	54960	54980	20
54240	54420	180	55000	55024	24
54940	54960	20	55036	55160	124

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
54980	55024	44	55180	55300	120
55036	55280	244	55440	55480	40
55440	55460	20	55860	55920	60
55500	55540	40	56520	56616	96
55580	55640	60	56624	56680	56
55860	55880	20	56840	56940	100
56700	56820	120	57040	57100	60
56900	56940	40	57264	57340	76
57100	57120	20	57380	57400	20
57340	57400	60	58020	58200	180
58140	58300	160	58260	58280	20
58520	58640	120	58300	58640	340
58860	58880	20	59260	59360	100
59020	59320	300	59640	59660	20
59720	59740	20	59740	59780	40
60060	60200	140	60040	60060	20
60320	60400	80	60080	60100	20
60840	60860	20	60120	60160	40
61040	61140	100	60320	60340	20
61360	61400	40	60500	60520	20
62480	62560	80	60540	60580	40
62700	62760	60	60660	60700	40
62820	62840	20	60860	60920	60
63100	63180	80	61060	61080	20
63260	63280	20	61340	61380	40
63300	63340	40	62360	62400	40
63420	63440	20	62580	62660	80
64060	64100	40	62720	62740	20
64140	64180	40	62760	62800	40
64580	64594	14	62940	63020	80
64640	64700	60	63120	63140	20
65120	65160	40	63180	63220	40
65180	65220	40	63280	63300	20
65260	65280	20	63320	63340	20
65400	65440	40	63620	63680	60
65480	65520	40	64606	64640	34
65620	65680	60	65160	65200	40
65700	65900	200	65340	65360	20
65960	65980	20	65440	65460	20
66020	66040	20	65520	65620	100
66100	66120	20	65680	65700	20
66280	66300	20	65860	65960	100
66360	66380	20	65980	66020	40
66880	66960	80	66040	66120	80
67391	67420	29	66260	66280	20
67740	67760	20	66300	66380	80

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
68160	68220	60	66760	66780	20
68620	68640	20	67300	67379	79
68920	68940	20	67740	67760	20
69310	69340	30	68060	68080	20
69600	69620	20	68180	68260	80
69800	69820	20	68560	68610	50
69880	69900	20	68640	68680	40
69920	70000	80	68980	69000	20
70220	70300	80	69620	69640	20
70400	70420	20	69900	69920	20
70860	70880	20	70000	70025	25
70900	70980	80	70145	70180	35
71740	71820	80	70300	70320	20
71840	71860	20	70440	70460	20
71975	72080	105	70880	70920	40
72106	72140	34	71660	71680	20
72240	72312	72	71700	71740	40
72320	72340	20	71780	71840	60
72440	72500	60	71860	71880	20
72660	72680	20	72140	72160	20
72700	72760	60	72240	72280	40
73100	73120	20	72380	72420	40
73640	73660	20	72440	72460	20
75020	75040	20	72540	72580	40
75480	75520	40	72620	72660	40
75560	75580	20	72680	72700	20
76140	76180	40	72760	72780	20
76400	76420	20	72800	72840	40
76560	76580	20	74060	74080	20
77100	77120	20	75000	75060	60
77180	77300	120	75460	75480	20
78174	78220	46	75500	75580	80
78280	78300	20	76060	76080	20
78320	78340	20	76180	76200	20
78360	78400	40	76360	76380	20
78486	78520	34	76420	76440	20
			76580	76600	20
			77120	77280	160
			78220	78280	60
			78300	78320	20
		6067			**5323**

Stone Pitching for Interchanges

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
Interchange at km 54+760		1397	Interchange at km 54+760		1397
Interchange at km 65+010		260	Interchange at km 65+010		260
Interchange at km 77+705		476	Interchange at km 77+705		476
		2133			**2133**

RCC Toe Wall

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
47+360	47+400	40	47+320	47+340	20
47+660	47+680	20	47+680	47+700	20
47+700	47+740	40	48+000	48+060	60
47+980	48+020	40	48+100	48+120	20
48+120	48+140	20	48+700	48+720	20
48+720	48+740	20	49+040	49+060	20
49+060	49+100	40	50+100	50+120	20
49+140	49+160	20	50+140	50+160	20
49+340	49+360	20	50+572	50+600	28
50+572	50+600	28	51+060	51+096	36
50+900	50+920	20	51+520	51+580	60
50+980	51+060	80	51+620	51+680	60
51+080	51+096	16	51+740	51+780	40
51+104	51+160	56	52+300	52+360	60
51+580	51+640	60	52+440	52+480	40
51+660	51+680	20	52+800	52+860	60
52+300	52+320	20	52+920	52+980	60
52+340	52+360	20	53+340	53+400	60
52+880	52+920	40	53+520	53+540	20
53+340	53+400	60	53+820	53+840	20
53+520	53+560	40	54+280	54+320	40
53+800	53+820	20	54+960	54+980	20
53+840	53+860	20	55+180	55+300	120
54+240	54+380	140	55+460	55+480	20
54+940	54+960	20	55+860	55+920	60
54+980	55+000	20	56+520	56+616	96
55+160	55+280	120	56+624	56+680	56
55+500	55+540	40	56+840	56+900	60
55+580	55+640	60	57+040	57+100	60
55+860	55+880	20	57+264	57+320	56
56+700	56+780	80	57+380	57+400	20
57+100	57+120	20	58+020	58+200	180
57+340	57+400	60	58+400	58+640	240
58+140	58+260	120	59+260	59+340	80
58+280	58+300	20	59+640	59+660	20

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
58+520	58+640	120	59+740	59+780	40
58+860	58+880	20	60+040	60+060	20
59+020	59+320	300	60+140	60+160	20
59+720	59+740	20	60+320	60+340	20
60+060	60+080	20	60+500	60+520	20
60+100	60+120	20	60+540	60+580	40
60+140	60+200	60	60+660	60+700	40
60+320	60+400	80	60+860	60+920	60
60+840	60+860	20	61+060	61+080	20
61+040	61+140	100	61+340	61+380	40
61+360	61+400	40	62+360	62+400	40
62+480	62+540	60	62+640	62+660	20
62+700	62+760	60	62+720	62+740	20
62+820	62+840	20	62+760	62+800	40
63+100	63+180	80	62+940	62+960	20
63+260	63+280	20	63+120	63+140	20
63+300	63+340	40	63+180	63+200	20
63+420	63+440	20	63+320	63+340	20
64+060	64+100	40	63+620	63+680	60
64+140	64+180	40	64+606	64+640	34
64+580	64+594	14	65+160	65+200	40
64+680	64+700	20	65+340	65+360	20
65+120	65+160	40	65+440	65+460	20
65+180	65+220	40	65+520	65+620	100
65+260	65+280	20	65+680	65+700	20
65+400	65+440	40	65+900	65+960	60
65+480	65+520	40	65+980	66+020	40
65+960	65+980	20	66+040	66+100	60
66+360	66+380	20	66+260	66+280	20
67+391	67+420	29	66+300	66+380	80
67+740	67+760	20	66+760	66+780	20
68+160	68+220	60	67+300	67+379	79
68+620	68+640	20	67+740	67+760	20
68+920	68+940	20	68+060	68+080	20
69+600	69+620	20	68+180	68+260	80
70+260	70+300	40	68+560	68+580	20
70+920	70+980	60	69+900	69+920	20
71+740	71+780	40	70+000	70+025	25
71+975	72+080	105	70+880	70+900	20
72+106	72+140	34	71+660	71+680	20
72+280	72+312	32	71+820	71+840	20
72+320	72+340	20	71+860	71+880	20
72+440	72+500	60	72+140	72+160	20

Left Side			Right Side		
Ch. From	**Ch. To**	**Length (m)**	**Ch. From**	**Ch. To**	**Length (m)**
72+660	72+680	20	72+440	72+460	20
72+700	72+760	60	72+540	72+580	40
73+100	73+120	20	72+620	72+660	40
73+640	73+660	20	72+680	72+700	20
75+020	75+040	20	72+760	72+780	20
75+480	75+500	20	72+800	72+840	40
75+560	75+580	20	74+060	74+080	20
76+140	76+180	40	75+000	75+060	60
76+400	76+420	20	75+460	75+480	20
77+280	77+300	20	75+520	75+580	60
78+174	78+200	26	76+060	76+080	20
78+360	78+400	40	76+580	76+600	20
78+486	78+520	34	77+120	77+180	60
			78+220	78+280	60
			78+300	78+320	20
		3834.000			**3850.000**

Note:

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

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. The design and construction of partial RE wall/ retaining wall shall be done for full height considering future widening.

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 and Stone Pitching specified hereinabove shall be treated as an approximate assessment and minimum. The actual lengths as required on the basis of detailed investigations shall be determined by the Concessionaire in accordance with the Specifications and Standards. Any increase in the lengths upto 10% specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.

Rat Hole Mining Areas

Rat-hole mining activities have been observed within and in proximity to the Right of Way (ROW) from Km 74+300 to Km 78+600 (End of Package-2). The Concessionaire shall carry out detailed Geotechnical and Geophysical investigations at all such identified

locations to assess the extent, depth, stability, and potential impact of these mining voids on the proposed highway works.

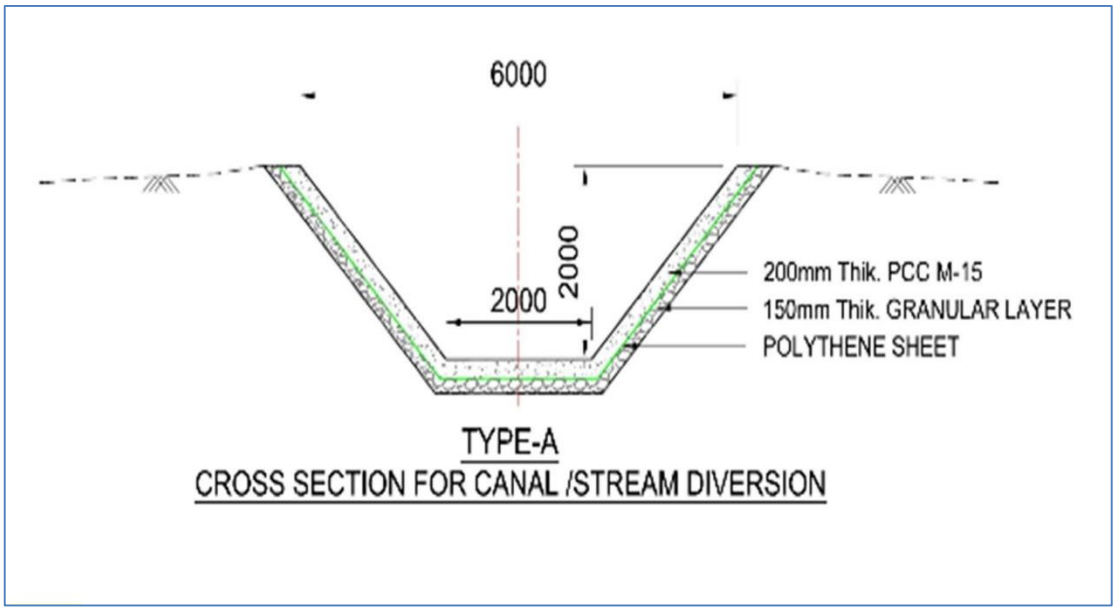
Based on the outcomes of the investigations, the Concessionaire shall:

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

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

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 irrigation authority / Independent Engineer. Any variation in the cross-section and length specified in this Clause of Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 16.

12 Open Well within RoW

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

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

13 Shifting of Utilities

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

Note:

1. *The type/ spacing/ size/ specifications of poles/ towers/ lines/ cables to be used in shifting work shall be as per the guidelines of Utility Owning Department and it is to be agreed solely between the Concessionaire and the Utility Owning Department. No change of scope shall be admissible and no cost shall be paid for using different type/ spacing/ size/ specifications in shifted work in comparison to those in the existing work or for making any overhead crossings to underground as per requirement of Utility Owning Department and/or construction of project highway. The Concessionaire shall carry out joint inspection with Utility Owning Department and get the estimates from the Utility Owning Department. The assistance of the Authority is limited to giving forwarding letter on the proposal of Concessionaire to Utility Owning Department whenever asked by the Concessionaire. The decision/ approval of Utility Owning Department shall be binding on the Concessionaire.*
2. *The supervision charges at the rates/ charges applicable of the Utility Owning Department shall be paid directly by the Authority to the Utility Owning department as and when Concessionaire furnishes demand of Utility Owning Department along with a copy of estimated cost given by the later.*
3. *The dismantled material/scrap of existing Utility to be shifted/ dismantled shall belong to the Concessionaire who would be free to dispose-off the dismantled material as deemed fit by them, unless the Concessionaire is required to deposit the dismantled material to Utility Owning Department as per the norm and practice. In that case, the amount of credit for dismantled material may be availed by the Concessionaire as per estimate agreed between them.*
4. *The utilities shall be handed over after shifting work is complete to Utility Owning Department to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after handing over process is complete as far as utility shifting works are concerned.*
5. *Existing lights, junction boxes, connection to individual properties along the affected section shall be disconnected and reconnected as part of utility relocation and the same shall be in the scope of the Concessionaire.*

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

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

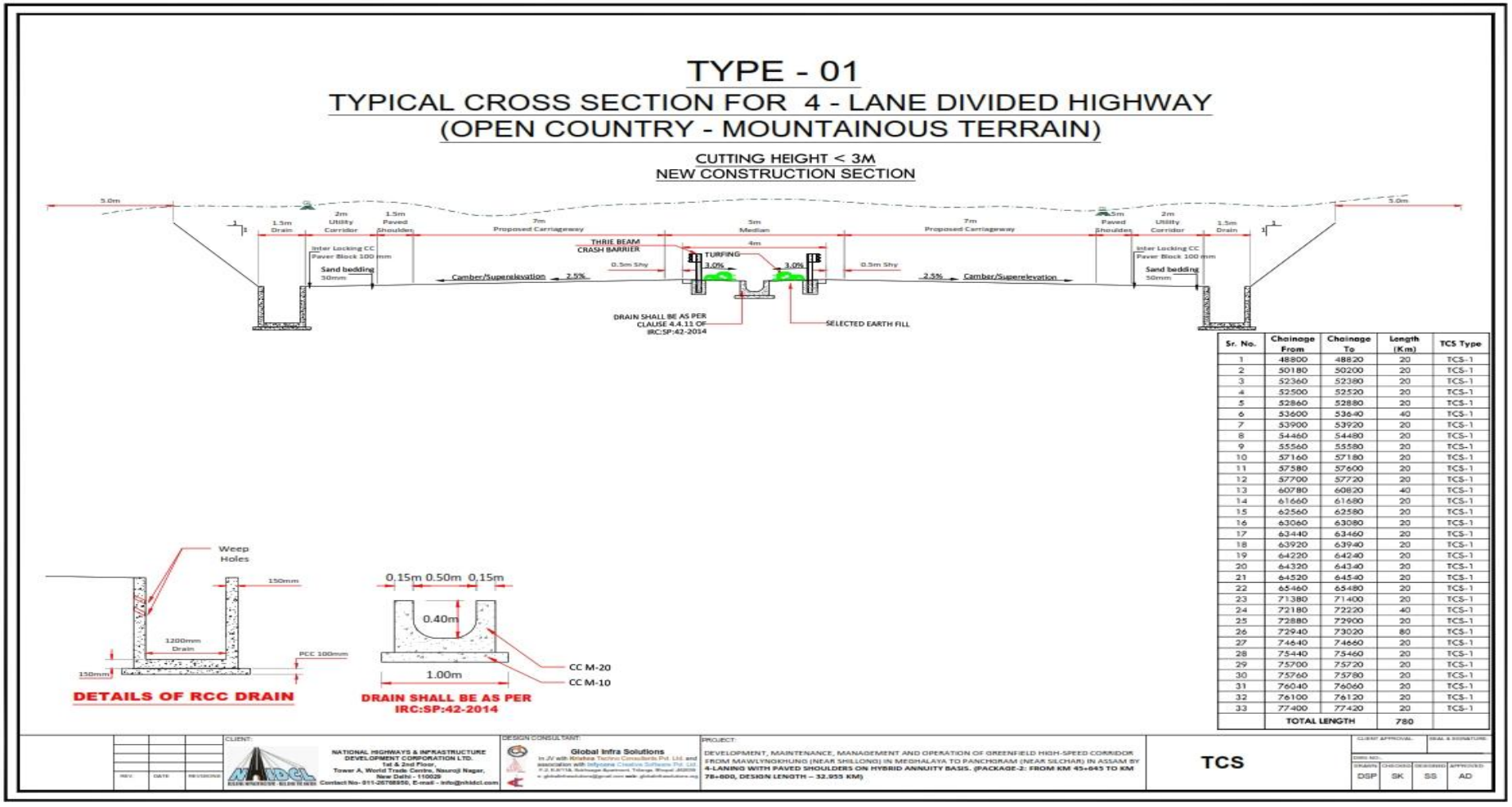
14 Work Zone Traffic Management Plans: Annexure-II schedule B-type cross sections

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

Sr. No.	Design Chainage (Km)	Construction Activity	Diversion	Traffic Management Plan	Barricading Type III/IV/CC Barrier with Lighting along barrier	Deployment of Flagman in Habitation/Schools/ Hospital, etc.	Remarks
1	46+965	SVUP	Yes	As per IRC SP 55	Type-IV	Flagman	
2	48+790	Overpass	Yes	As per IRC SP 55	Type -IV	Flagman	
3	49+735	VOP	Yes	As per IRC SP 55	Type-IV	Flagman	
4	50+200	Overpass	Yes	As per IRC SP 56	Type-IV	Flagman	
5	51+100	Underpass	Yes	As per IRC SP 57	Type-IV	Flagman	
6	51+825	Overpass	Yes	As per IRC SP 58	Type-IV	Flagman	
7	51+890	VOP	Yes	As per IRC SP 59	Type-IV	Flagman	
8	52+600	VOP	Yes	As per IRC SP 60	Type-IV	Flagman	
9	53+020	Overpass	Yes	As per IRC SP 61	Type-IV	Flagman	
10	53+765	Overpass	Yes	As per IRC SP 62	Type-IV	Flagman	
11	54+060	Overpass	Yes	As per IRC SP 63	Type-IV	Flagman	
12	54+560	VOP	Yes	As per IRC SP 64	Type-IV	Flagman	
13	55+360	Overpass	Yes	As per IRC SP 65	Type-IV	Flagman	
14	56+160	Overpass	Yes	As per IRC SP 66	Type-IV	Flagman	
15	56+620	Underpass	Yes	As per IRC SP 67	Type-IV	Flagman	
16	57+260	Underpass	Yes	As per IRC SP 68	Type-IV	Flagman	
17	57+800	Overpass	Yes	As per IRC SP 69	Type-IV	Flagman	
18	59+595	VOP	Yes	As per IRC SP 70	Type-IV	Flagman	
19	59+930	Overpass	Yes	As per IRC SP 71	Type-IV	Flagman	
20	62+003	Overpass	Yes	As per IRC SP 72	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
21	62+890	Overpass	Yes	As per IRC SP 73	Type-IV	Flagman	
22	63+725	VOP	Yes	As per IRC SP 74	Type-IV	Flagman	
23	64+295	VOP	Yes	As per IRC SP 75	Type-IV	Flagman	
24	66+585	Overpass	Yes	As per IRC SP 76	Type-IV	Flagman	
25	67+460	Overpass	Yes	As per IRC SP 77	Type-IV	Flagman	
26	67+937	VOP	Yes	As per IRC SP 78	Type-IV	Flagman	
27	70+670	VUP	Yes	As per IRC SP 79	Type-IV	Flagman	
28	71+240	Overpass	Yes	As per IRC SP 80	Type-IV	Flagman	
29	72+315	SVUP	Yes	As per IRC SP 81	Type-IV	Flagman	
30	72+900	Overpass	Yes	As per IRC SP 82	Type-IV	Flagman	
31	73+785	Underpass	Yes	As per IRC SP 83	Type-IV	Flagman	
32	74+445	VOP	Yes	As per IRC SP 84	Type-IV	Flagman	
33	74+810	Overpass	Yes	As per IRC SP 85	Type-IV	Flagman	
34	75+835	Overpass	Yes	As per IRC SP 86	Type-IV	Flagman	
35	76+260	VOP	Yes	As per IRC SP 87	Type-IV	Flagman	
36	76+680	SVUP	Yes	As per IRC SP 88	Type-IV	Flagman	
37	76+770	Overpass	Yes	As per IRC SP 89	Type-IV	Flagman	
38	76+960	VOP	Yes	As per IRC SP 90	Type-IV	Flagman	
39	77+380	Overpass	Yes	As per IRC SP 91	Type-IV	Flagman	
40	78+240	Underpass	Yes	As per IRC SP 92	Type-IV	Flagman	

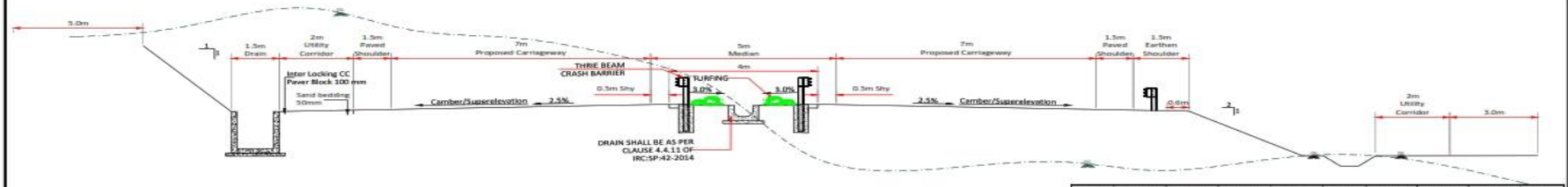
ANNEX – II (SCHEDULE – B) - TYPICAL CROSS SECTION

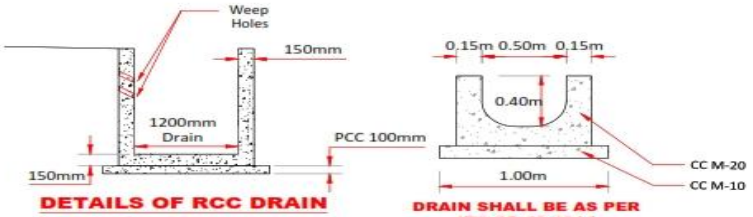


Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	48800	48820	20	TCS-1
2	50180	50200	20	TCS-1
3	52360	52380	20	TCS-1
4	52500	52520	20	TCS-1
5	52860	52880	20	TCS-1
6	53600	53640	40	TCS-1
7	53900	53920	20	TCS-1
8	54460	54480	20	TCS-1
9	55560	55580	20	TCS-1
10	57160	57180	20	TCS-1
11	57580	57600	20	TCS-1
12	57700	57720	20	TCS-1
13	60780	60820	40	TCS-1
14	61660	61680	20	TCS-1
15	62560	62580	20	TCS-1
16	63060	63080	20	TCS-1
17	63440	63460	20	TCS-1
18	63920	63940	20	TCS-1
19	64220	64240	20	TCS-1
20	64320	64340	20	TCS-1
21	64520	64540	20	TCS-1
22	65460	65480	20	TCS-1
23	71380	71400	20	TCS-1
24	72180	72220	40	TCS-1
25	72880	72900	20	TCS-1
26	72940	73020	80	TCS-1
27	74640	74660	20	TCS-1
28	75440	75460	20	TCS-1
29	75700	75720	20	TCS-1
30	75760	75780	20	TCS-1
31	76040	76060	20	TCS-1
32	76100	76120	20	TCS-1
33	77400	77420	20	TCS-1
	TOTAL LENGTH		780	

TYPE - 02
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

PARTIAL CUT/FILL HEIGHT < 3M
NEW CONSTRUCTION SECTION





DETAILS OF RCC DRAIN

DRAIN SHALL BE AS PER IRC:SP:42-2014

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type	Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	48080	48100	20	TCS-2	41	63600	63620	20	TCS-2
2	48780	48800	20	TCS-2	42	63940	64020	80	TCS-2
3	49360	49380	20	TCS-2	43	64100	64140	40	TCS-2
4	50040	50060	20	TCS-2	44	64540	64560	20	TCS-2
5	50080	50100	20	TCS-2	45	65280	65300	20	TCS-2
6	50160	50180	20	TCS-2	46	65840	65860	20	TCS-2
7	50520	50540	20	TCS-2	47	66020	66040	20	TCS-2
8	51380	51400	20	TCS-2	48	66280	66300	20	TCS-2
9	51800	51820	20	TCS-2	49	66800	66820	20	TCS-2
10	52420	52440	20	TCS-2	50	66860	66900	40	TCS-2
11	52760	52780	20	TCS-2	51	68020	68040	20	TCS-2
12	53360	53400	40	TCS-2	52	68540	68560	20	TCS-2
13	53640	53700	60	TCS-2	53	69880	69900	20	TCS-2
14	53980	54000	20	TCS-2	54	70860	70880	20	TCS-2
15	54800	54810	10	TCS-2	55	71520	71540	20	TCS-2
16	55340	55360	20	TCS-2	56	71640	71660	20	TCS-2
17	55480	55500	20	TCS-2	57	71680	71700	20	TCS-2
18	55540	55560	20	TCS-2	58	71840	71860	20	TCS-2
19	55820	55840	20	TCS-2	59	72160	72180	20	TCS-2
20	56080	56100	20	TCS-2	60	72360	72420	60	TCS-2
21	56260	56300	40	TCS-2	61	72500	72540	40	TCS-2
22	56680	56700	20	TCS-2	62	72580	72600	20	TCS-2
23	56820	56840	20	TCS-2	63	72840	72860	20	TCS-2
24	57320	57340	20	TCS-2	64	73020	73100	80	TCS-2
25	57420	57440	20	TCS-2	65	73140	73180	40	TCS-2
26	58000	58020	20	TCS-2	66	74420	74440	20	TCS-2
27	60000	60020	20	TCS-2	67	76180	76200	20	TCS-2
28	60280	60300	20	TCS-2	68	76420	76440	20	TCS-2
29	60620	60660	40	TCS-2	69	76540	76580	40	TCS-2
30	60760	60780	20	TCS-2	70	77100	77120	20	TCS-2
31	61020	61040	20	TCS-2	71	77340	77360	20	TCS-2
32	62240	62260	20	TCS-2	72	78200	78220	20	TCS-2
33	62280	62320	40	TCS-2	73	78280	78300	20	TCS-2
34	62460	62480	20	TCS-2	74	78320	78340	20	TCS-2
35	62540	62560	20	TCS-2	75	78540	78600	60	TCS-2
36	62680	62700	20	TCS-2		TOTAL LENGTH		1910	
37	62840	62860	20	TCS-2					
38	63220	63240	20	TCS-2					
39	63280	63300	20	TCS-2					
40	63340	63360	20	TCS-2					

CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029 Contact No- 011-26708050, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd.

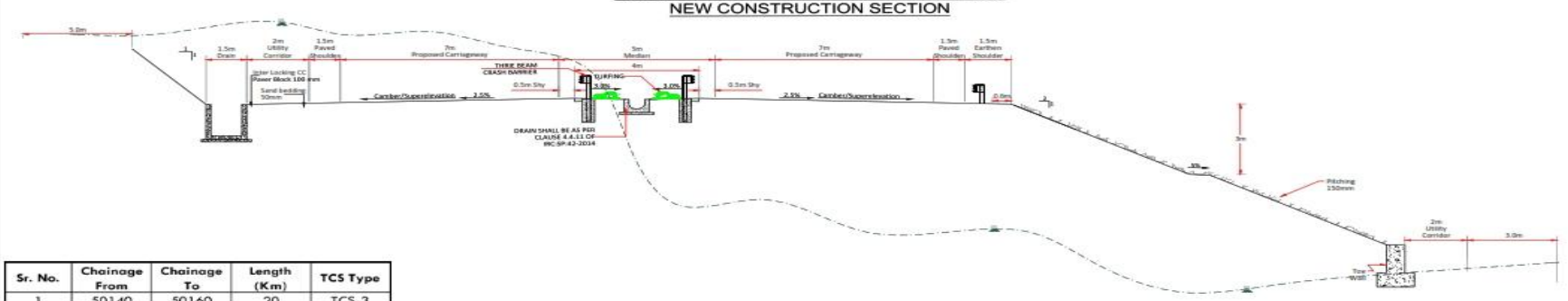
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD

TYPE - 03
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

CUTTING HEIGHT <3M, FILLING HEIGHT >3M
NEW CONSTRUCTION SECTION



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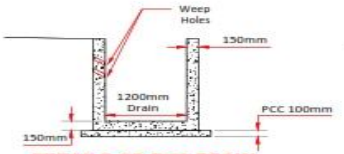
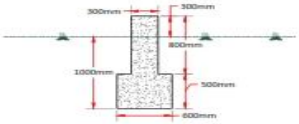
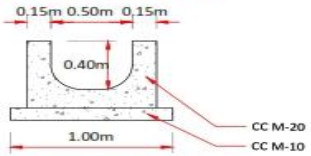
1	50140	50160	20	TCS-3
2	51740	51780	40	TCS-3
3	52440	52460	20	TCS-3
4	52840	52860	20	TCS-3
5	52880	52900	20	TCS-3
6	54260	54280	20	TCS-3
7	54340	54360	20	TCS-3
8	54940	54960	20	TCS-3
9	55620	55640	20	TCS-3
10	56720	56740	20	TCS-3
11	58400	58420	20	TCS-3
12	59760	59780	20	TCS-3
13	60660	60680	20	TCS-3
14	61380	61400	20	TCS-3
15	63180	63200	20	TCS-3
16	64080	64100	20	TCS-3
17	66760	66780	20	TCS-3
18	72540	72580	40	TCS-3
19	72640	72660	20	TCS-3
20	72760	72780	20	TCS-3
21	75000	75020	20	TCS-3
22	78360	78400	40	TCS-3
	TOTAL LENGTH		500	



DETAILS OF RCC DRAIN



DETAILS OF TOE WALL FOR PITCHING



DRAIN SHALL BE AS PER IRC:SP:42-2014

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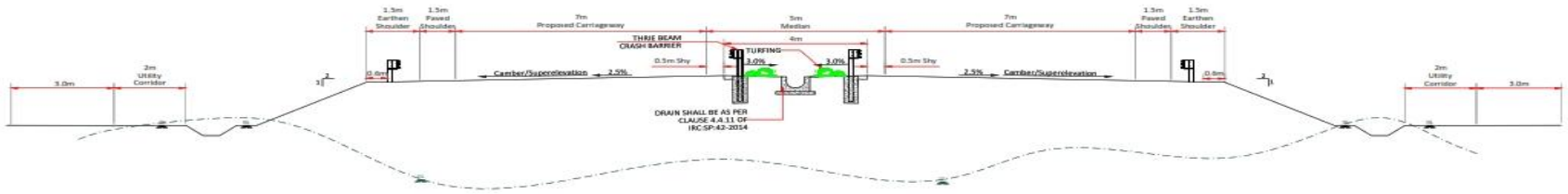
DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infocons Creative Software Pvt. Ltd.

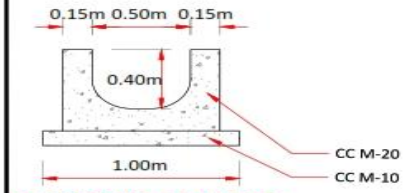
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

CLIENT APPROVAL	SIGN. & SIGNATURE
DRAWN: DSP	CHECKED: SK
DESIGNED: SS	APPROVED: AD

TYPE - 04
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
FILLING SECTION <3M
NEW CONSTRUCTION SECTION





DRAIN SHALL BE AS PER IRC:SP:42-2014

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type	Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47940	47980	40	TCS-4	28	60580	60620	40	TCS-4
2	48740	48780	40	TCS-4	29	60700	60760	60	TCS-4
3	50060	50080	20	TCS-4	30	60820	60840	20	TCS-4
4	50120	50140	20	TCS-4	31	62260	62280	20	TCS-4
5	50540	50547	7	TCS-4	32	62320	62360	40	TCS-4
6	50880	50900	20	TCS-4	33	62800	62820	20	TCS-4
7	51720	51740	20	TCS-4	34	63080	63100	20	TCS-4
8	51820	51860	40	TCS-4	35	63240	63260	20	TCS-4
9	52280	52300	20	TCS-4	36	64020	64060	40	TCS-4
10	52480	52500	20	TCS-4	37	64560	64580	20	TCS-4
11	52780	52800	20	TCS-4	38	65100	65120	20	TCS-4
12	53280	53340	60	TCS-4	39	66780	66800	20	TCS-4
13	53860	53880	20	TCS-4	40	66820	66840	20	TCS-4
14	53920	53980	60	TCS-4	41	68040	68060	20	TCS-4
15	54420	54460	40	TCS-4	42	70420	70440	20	TCS-4
16	54920	54940	20	TCS-4	43	71400	71420	20	TCS-4
17	55300	55340	40	TCS-4	44	72220	72240	20	TCS-4
18	55420	55440	20	TCS-4	45	72340	72360	20	TCS-4
19	55840	55860	20	TCS-4	46	72420	72440	20	TCS-4
20	57120	57160	40	TCS-4	47	72600	72620	20	TCS-4
21	57400	57420	20	TCS-4	48	72780	72800	20	TCS-4
22	57540	57580	40	TCS-4	49	72860	72880	20	TCS-4
23	57660	57700	40	TCS-4	50	73120	73140	20	TCS-4
24	57880	57940	60	TCS-4	51	73180	73200	20	TCS-4
25	60020	60040	20	TCS-4	52	74400	74420	20	TCS-4
26	60300	60320	20	TCS-4	53	76120	76140	20	TCS-4
27	60520	60540	20	TCS-4	54	78520	78540	20	TCS-4
						TOTAL LENGTH		1447	

CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029 Contact No- 011-26765858, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd.

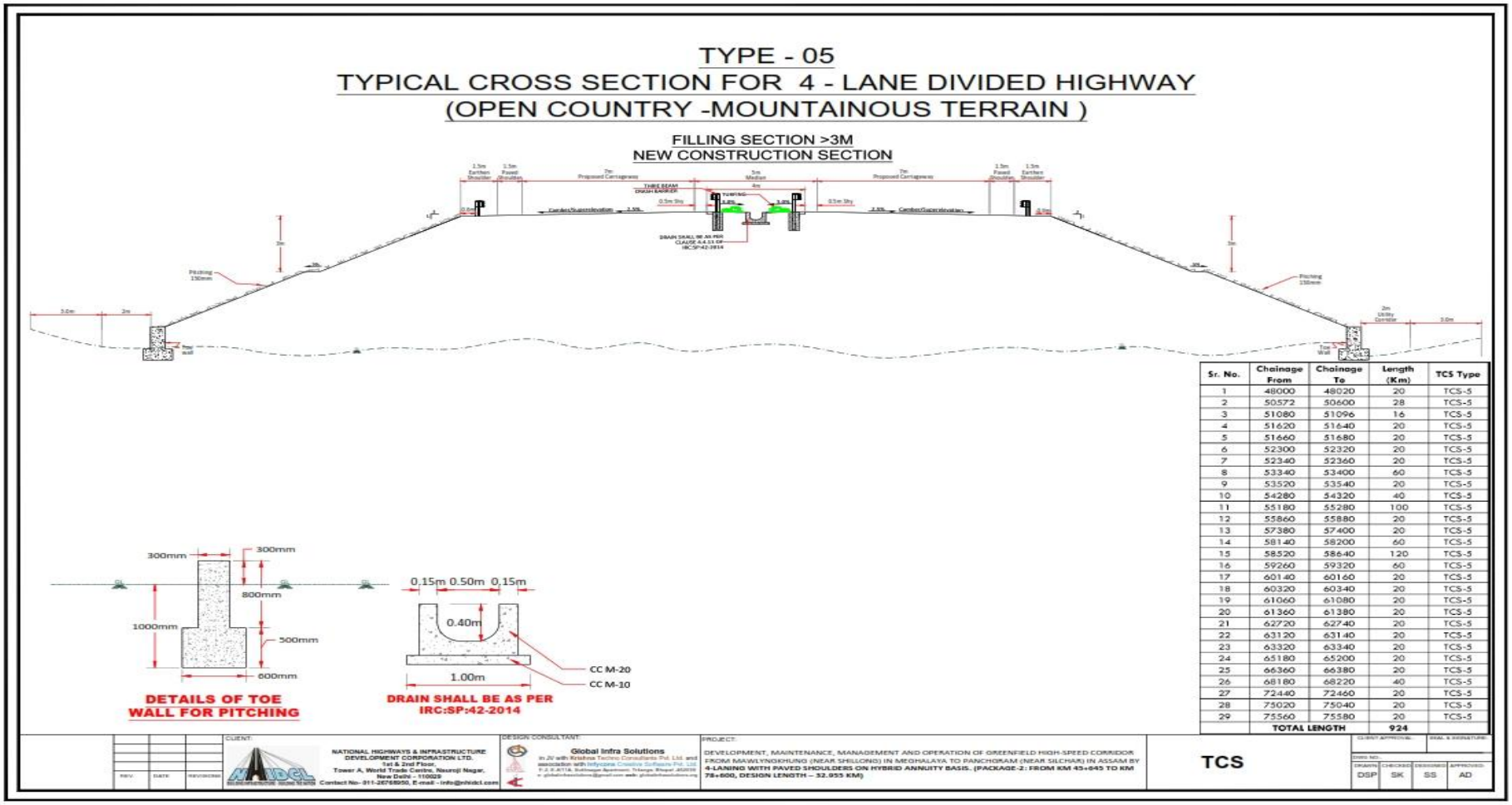
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

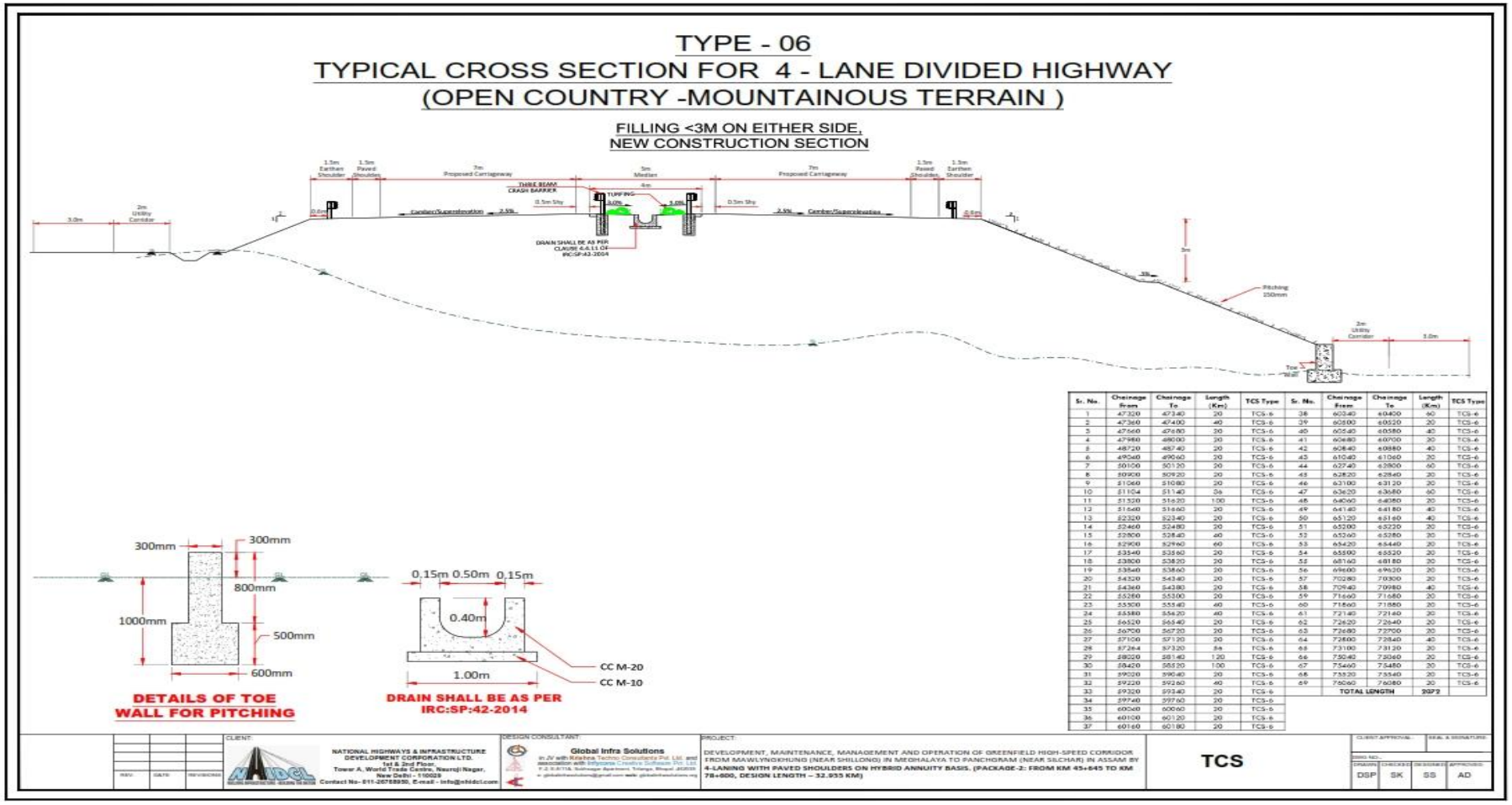
REV.	DATE	REMARKS

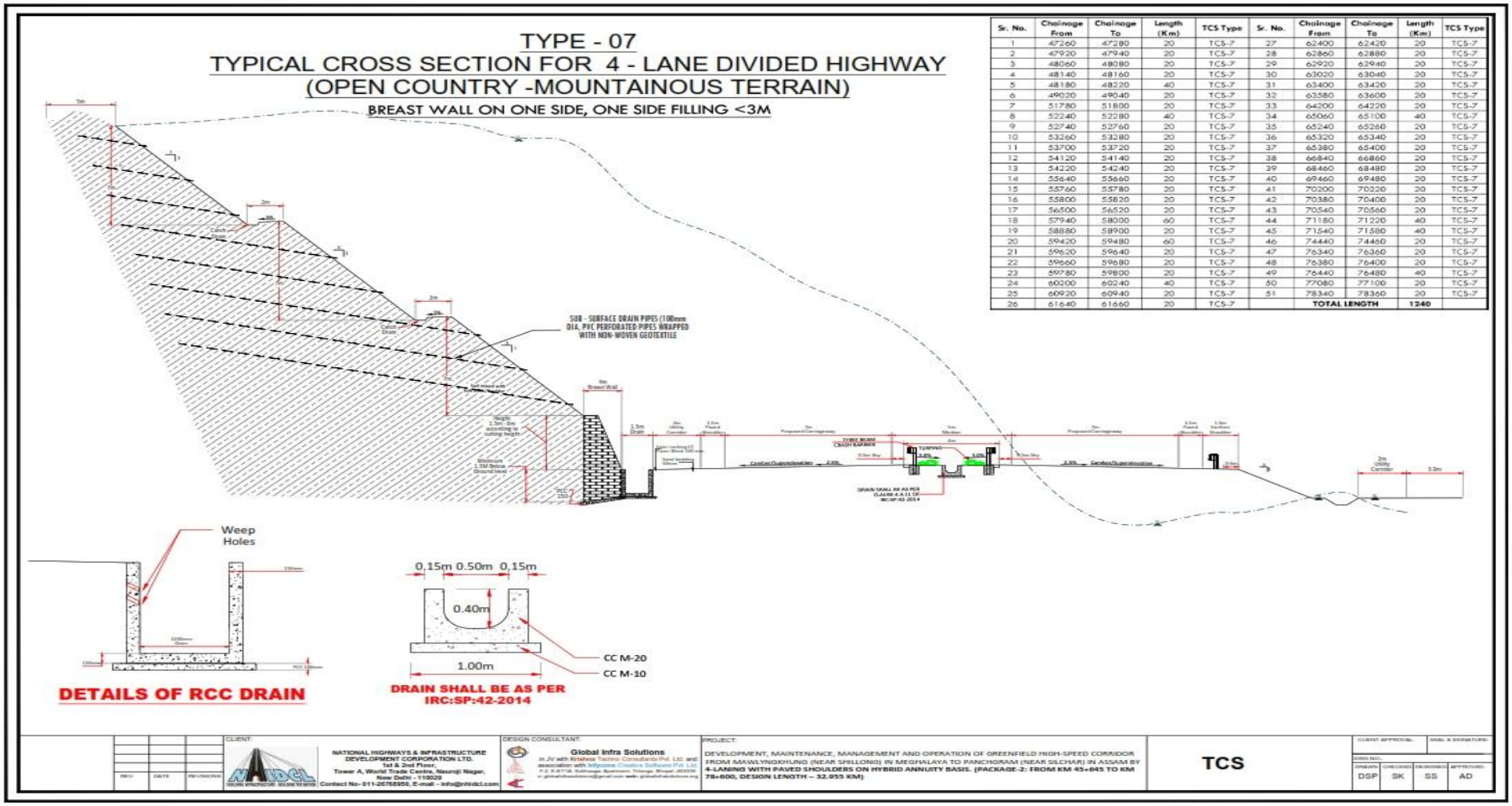
CLIENT APPROVAL | SEAL & SIGNATURE

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD

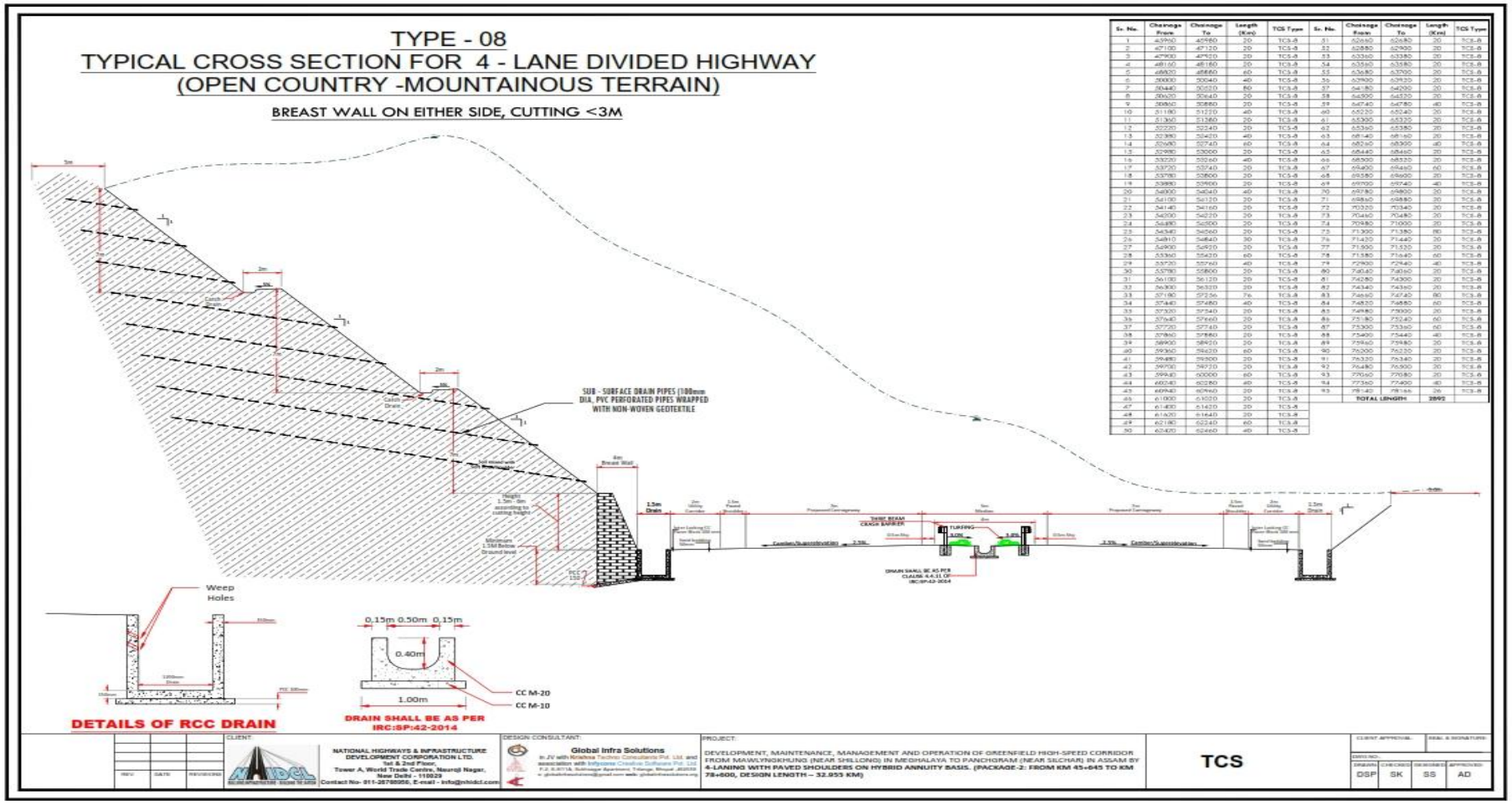


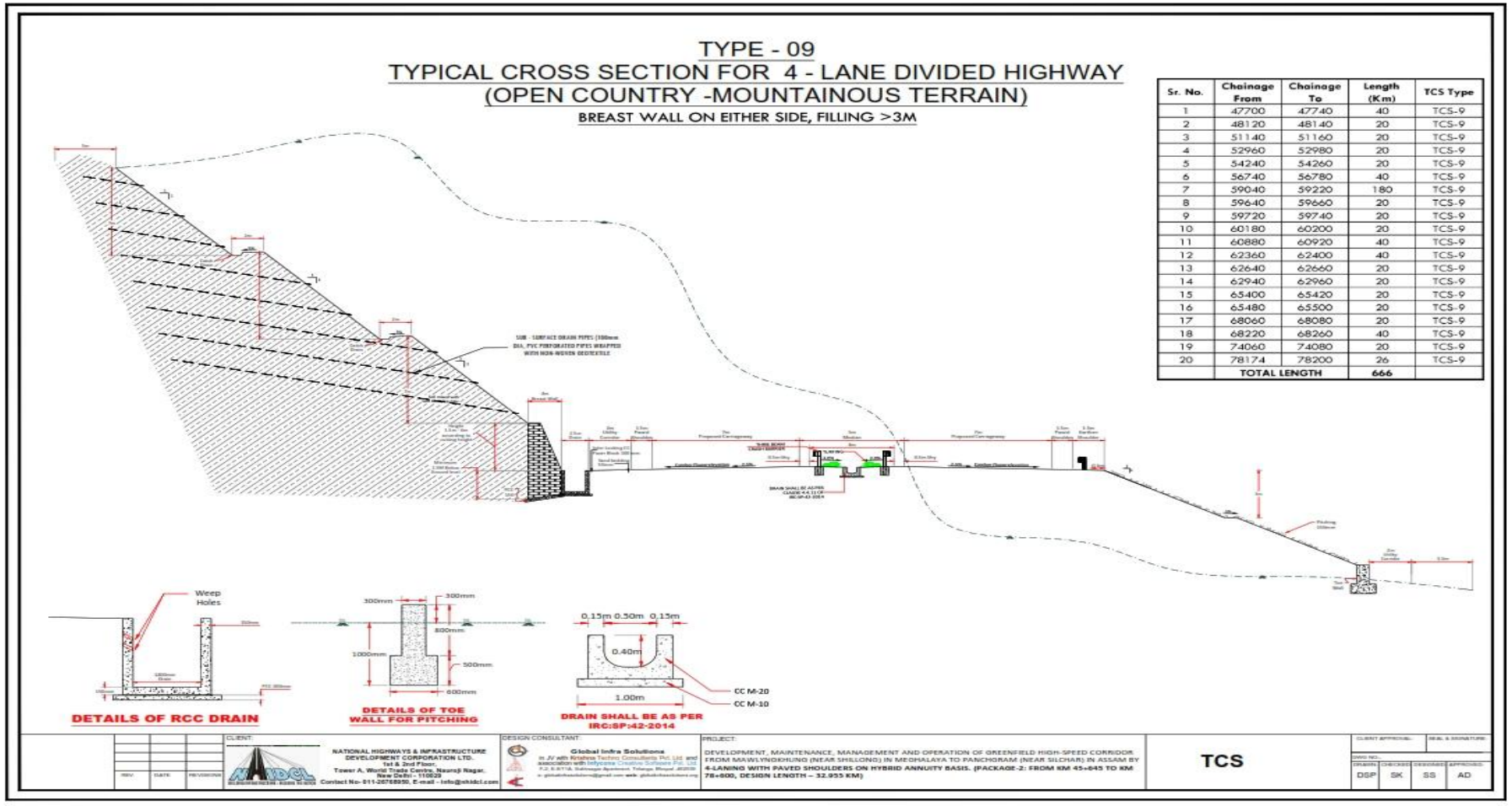
Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	48000	48020	20	TCS-5
2	50572	50600	28	TCS-5
3	51080	51096	16	TCS-5
4	51620	51640	20	TCS-5
5	51660	51680	20	TCS-5
6	52300	52320	20	TCS-5
7	52340	52360	20	TCS-5
8	53340	53400	60	TCS-5
9	53520	53540	20	TCS-5
10	54280	54320	40	TCS-5
11	55180	55280	100	TCS-5
12	55860	55880	20	TCS-5
13	57380	57400	20	TCS-5
14	58140	58200	60	TCS-5
15	58520	58640	120	TCS-5
16	59260	59320	60	TCS-5
17	60140	60160	20	TCS-5
18	60320	60340	20	TCS-5
19	61060	61080	20	TCS-5
20	61360	61380	20	TCS-5
21	62720	62740	20	TCS-5
22	63120	63140	20	TCS-5
23	63320	63340	20	TCS-5
24	65180	65200	20	TCS-5
25	66360	66380	20	TCS-5
26	68180	68220	40	TCS-5
27	72440	72460	20	TCS-5
28	75020	75040	20	TCS-5
29	75560	75580	20	TCS-5
	TOTAL LENGTH		924	


TYPE - 06
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
FILLING <3M ON EITHER SIDE,
NEW CONSTRUCTION SECTION
300mm
300mm
800mm
1000mm
500mm
600mm
DETAILS OF TOE
WALL FOR PITCHING
0.15m 0.50m 0.15m
0.40m
1.00m
CC M-20
CC M-10
DRAIN SHALL BE AS PER
IRC:SP:42-2014
TCS
DSP
SK
SS
AD

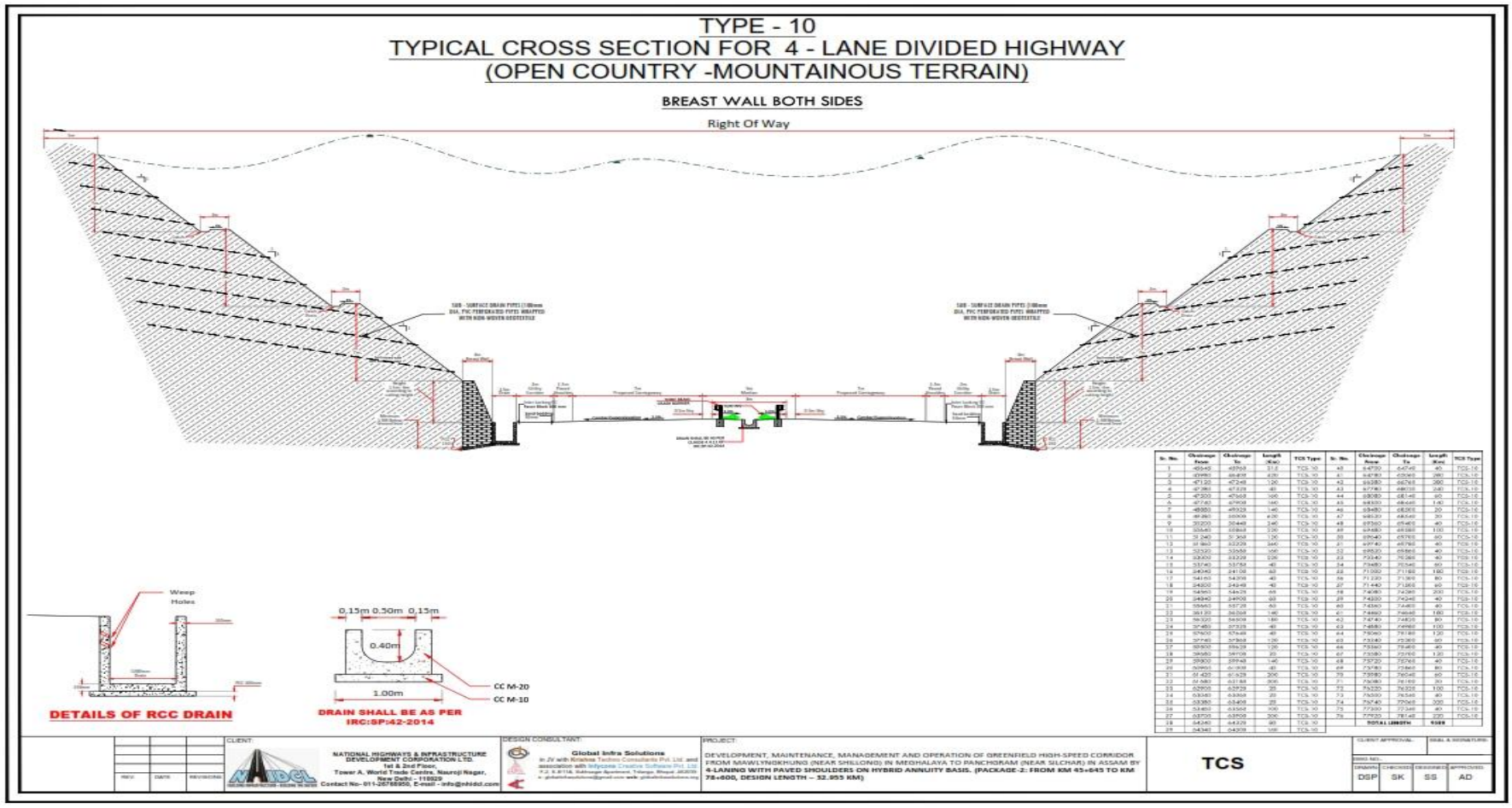


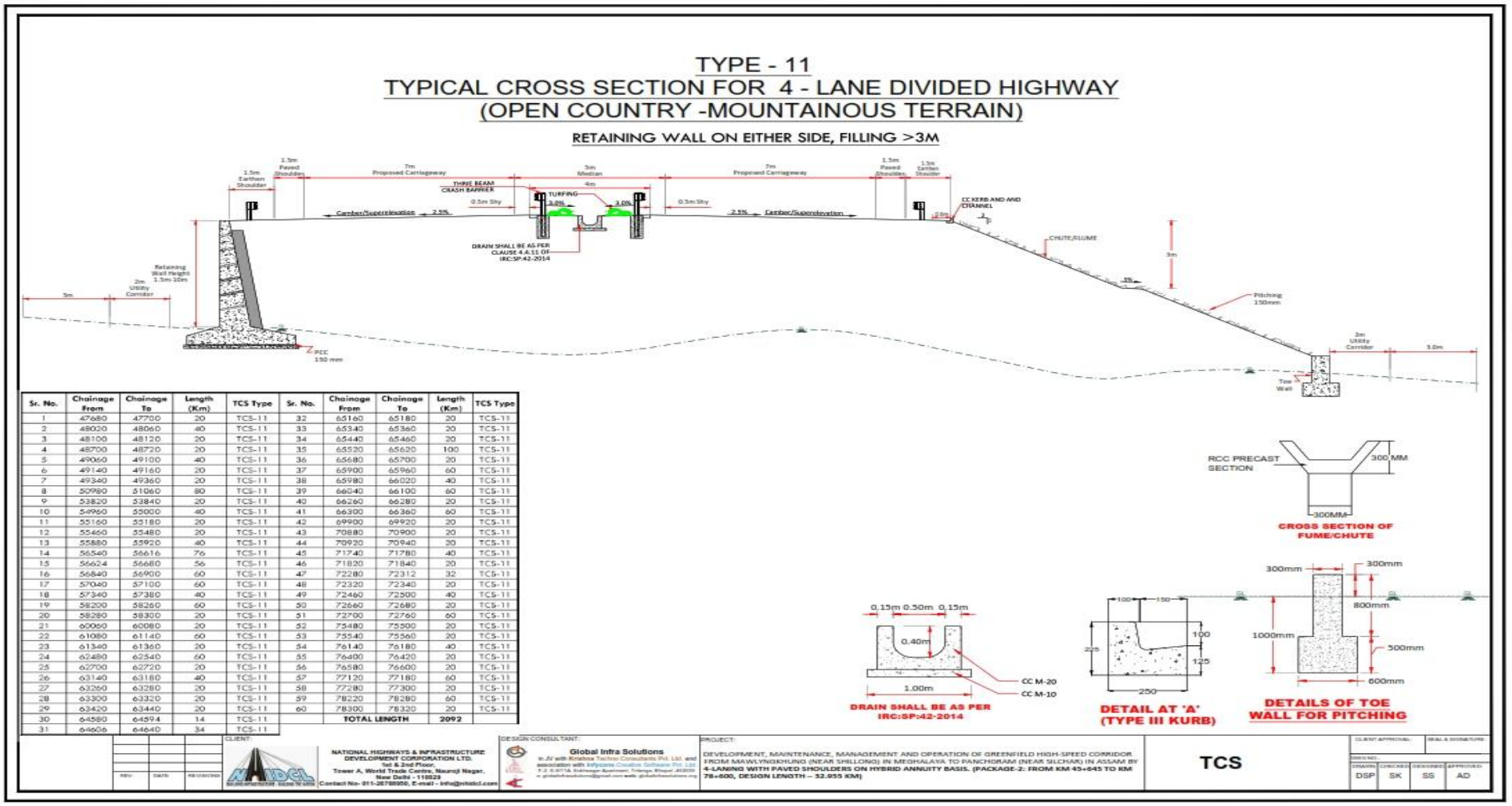
Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type	Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47260	47280	20	TCS-7	27	62400	62420	20	TCS-7
2	47920	47940	20	TCS-7	28	62860	62880	20	TCS-7
3	48060	48080	20	TCS-7	29	62920	62940	20	TCS-7
4	48140	48160	20	TCS-7	30	63020	63040	20	TCS-7
5	48180	48220	40	TCS-7	31	63400	63420	20	TCS-7
6	49020	49040	20	TCS-7	32	63580	63600	20	TCS-7
7	51780	51800	20	TCS-7	33	64200	64220	20	TCS-7
8	52240	52280	40	TCS-7	34	65060	65100	40	TCS-7
9	52740	52760	20	TCS-7	35	65240	65260	20	TCS-7
10	53260	53280	20	TCS-7	36	65320	65340	20	TCS-7
11	53700	53720	20	TCS-7	37	65380	65400	20	TCS-7
12	54120	54140	20	TCS-7	38	66840	66860	20	TCS-7
13	54220	54240	20	TCS-7	39	68460	68480	20	TCS-7
14	55640	55660	20	TCS-7	40	69460	69480	20	TCS-7
15	55760	55780	20	TCS-7	41	70200	70220	20	TCS-7
16	55800	55820	20	TCS-7	42	70380	70400	20	TCS-7
17	56500	56520	20	TCS-7	43	70540	70560	20	TCS-7
18	57940	58000	60	TCS-7	44	71180	71220	40	TCS-7
19	58880	58900	20	TCS-7	45	71540	71580	40	TCS-7
20	59420	59480	60	TCS-7	46	74440	74460	20	TCS-7
21	59620	59640	20	TCS-7	47	76340	76360	20	TCS-7
22	59660	59680	20	TCS-7	48	76380	76400	20	TCS-7
23	59780	59800	20	TCS-7	49	76440	76480	40	TCS-7
24	60200	60240	40	TCS-7	50	77080	77100	20	TCS-7
25	60920	60940	20	TCS-7	51	78340	78360	20	TCS-7
26	61640	61660	20	TCS-7		TOTAL LENGTH		1240	


TYPE - 08
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
BREAST WALL ON EITHER SIDE, CUTTING <3M
SUB - SURFACE DRAIN PIPES (100mm DIA, PVC PERFORATED PIPES WRAPPED WITH NON-WOVEN GEOTEXTILE
Weep Holes
0.15m 0.50m 0.15m
0.40m
1.00m
CC M-20
CC M-10
DETAILS OF RCC DRAIN
DRAIN SHALL BE AS PER IRC:SP:42-2014
TCS
DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)



Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47700	47740	40	TCS-9
2	48120	48140	20	TCS-9
3	51140	51160	20	TCS-9
4	52960	52980	20	TCS-9
5	54240	54260	20	TCS-9
6	56740	56780	40	TCS-9
7	59040	59220	180	TCS-9
8	59640	59660	20	TCS-9
9	59720	59740	20	TCS-9
10	60180	60200	20	TCS-9
11	60880	60920	40	TCS-9
12	62360	62400	40	TCS-9
13	62640	62660	20	TCS-9
14	62940	62960	20	TCS-9
15	65400	65420	20	TCS-9
16	65480	65500	20	TCS-9
17	68060	68080	20	TCS-9
18	68220	68260	40	TCS-9
19	74060	74080	20	TCS-9
20	78174	78200	26	TCS-9
	TOTAL LENGTH		666	

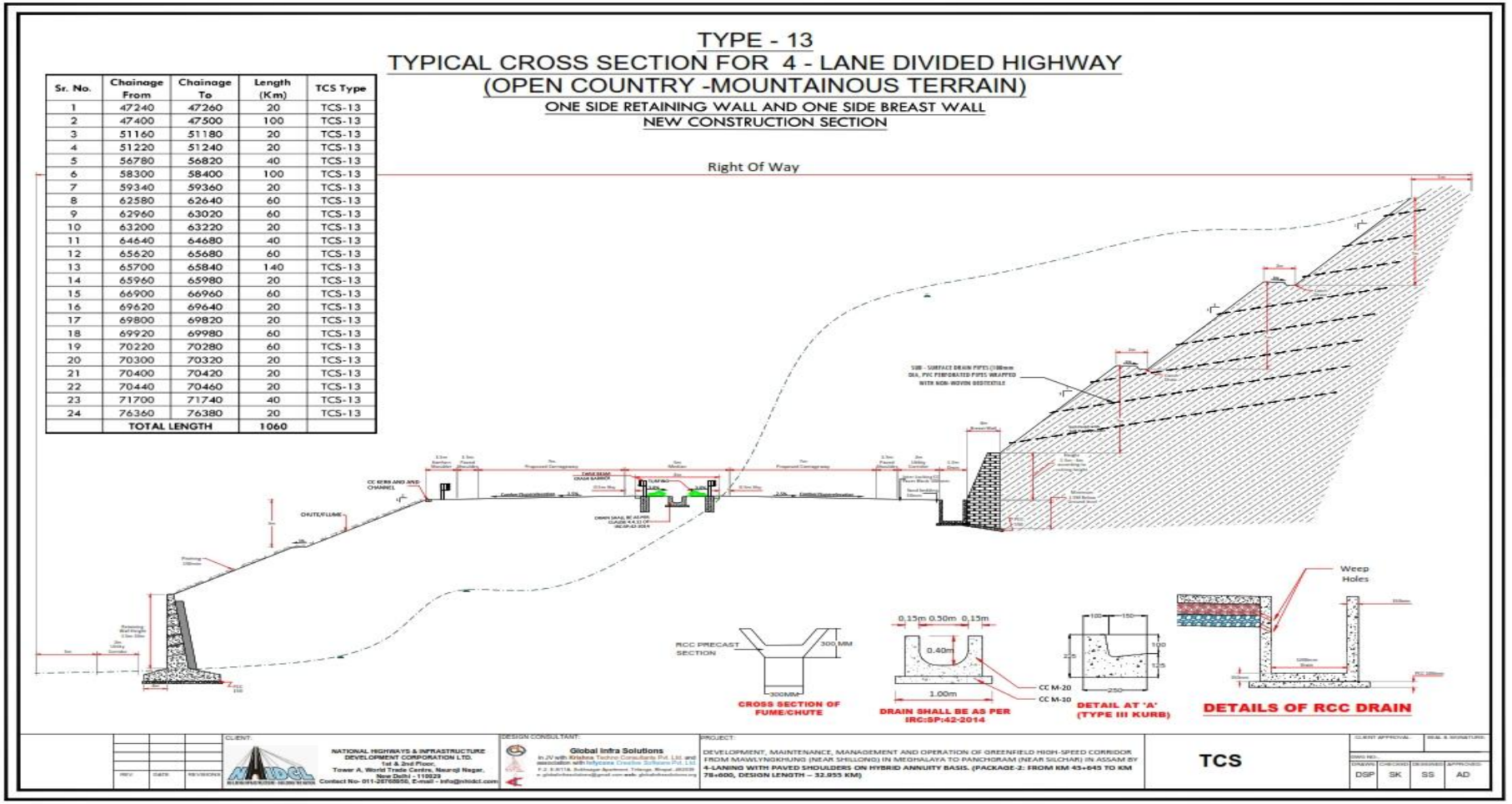

TYPE - 10
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
BREAST WALL BOTH SIDES
Right Of Way
Weep Holes
DETAILS OF RCC DRAIN
0.15m 0.50m 0.15m
0.40m
1.00m
CC M-20
CC M-10
DRAIN SHALL BE AS PER IRC:SP:42-2014
TCS
DSP
SK
SS
AD



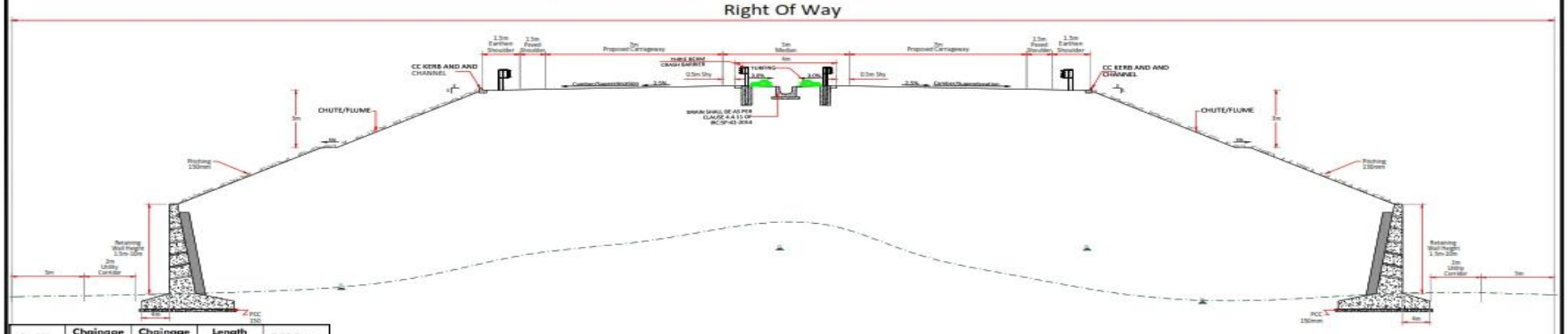
Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type	Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47680	47700	20	TCS-11	32	65160	65180	20	TCS-11
2	48020	48060	40	TCS-11	33	65340	65360	20	TCS-11
3	48100	48120	20	TCS-11	34	65440	65460	20	TCS-11
4	48700	48720	20	TCS-11	35	65520	65620	100	TCS-11
5	49060	49100	40	TCS-11	36	65680	65700	20	TCS-11
6	49140	49160	20	TCS-11	37	65900	65960	60	TCS-11
7	49340	49360	20	TCS-11	38	65980	66020	40	TCS-11
8	50980	51060	80	TCS-11	39	66040	66100	60	TCS-11
9	53820	53840	20	TCS-11	40	66260	66280	20	TCS-11
10	54960	55000	40	TCS-11	41	66300	66360	60	TCS-11
11	55160	55180	20	TCS-11	42	69900	69920	20	TCS-11
12	55460	55480	20	TCS-11	43	70880	70900	20	TCS-11
13	55880	55920	40	TCS-11	44	70920	70940	20	TCS-11
14	56540	56616	76	TCS-11	45	71740	71780	40	TCS-11
15	56624	56680	56	TCS-11	46	71820	71840	20	TCS-11
16	56840	56900	60	TCS-11	47	72280	72312	32	TCS-11
17	57040	57100	60	TCS-11	48	72320	72340	20	TCS-11
18	57340	57380	40	TCS-11	49	72460	72500	40	TCS-11
19	58200	58260	60	TCS-11	50	72660	72680	20	TCS-11
20	58280	58300	20	TCS-11	51	72700	72760	60	TCS-11
21	60060	60080	20	TCS-11	52	75480	75500	20	TCS-11
22	61080	61140	60	TCS-11	53	75540	75560	20	TCS-11
23	61340	61360	20	TCS-11	54	76140	76180	40	TCS-11
24	62480	62540	60	TCS-11	55	76400	76420	20	TCS-11
25	62700	62720	20	TCS-11	56	76580	76600	20	TCS-11
26	63140	63180	40	TCS-11	57	77120	77180	60	TCS-11
27	63260	63280	20	TCS-11	58	77280	77300	20	TCS-11
28	63300	63320	20	TCS-11	59	78220	78280	60	TCS-11
29	63420	63440	20	TCS-11	60	78300	78320	20	TCS-11
30	64580	64594	14	TCS-11		TOTAL LENGTH		2092	
31	64606	64640	34	TCS-11					

TYPE - 13
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
ONE SIDE RETAINING WALL AND ONE SIDE BREAST WALL
NEW CONSTRUCTION SECTION

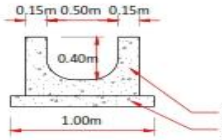
Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47240	47260	20	TCS-13
2	47400	47500	100	TCS-13
3	51160	51180	20	TCS-13
4	51220	51240	20	TCS-13
5	56780	56820	40	TCS-13
6	58300	58400	100	TCS-13
7	59340	59360	20	TCS-13
8	62580	62640	60	TCS-13
9	62960	63020	60	TCS-13
10	63200	63220	20	TCS-13
11	64640	64680	40	TCS-13
12	65620	65680	60	TCS-13
13	65700	65840	140	TCS-13
14	65960	65980	20	TCS-13
15	66900	66960	60	TCS-13
16	69620	69640	20	TCS-13
17	69800	69820	20	TCS-13
18	69920	69980	60	TCS-13
19	70220	70280	60	TCS-13
20	70300	70320	20	TCS-13
21	70400	70420	20	TCS-13
22	70440	70460	20	TCS-13
23	71700	71740	40	TCS-13
24	76360	76380	20	TCS-13
	TOTAL LENGTH		1060	



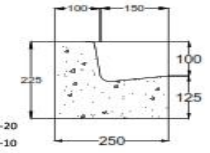
TYPE - 14
TYPICAL CROSS SECTION FOR 4 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
RETAINING WALL ON BOTH SIDES IN HIGH EMBANKMENT



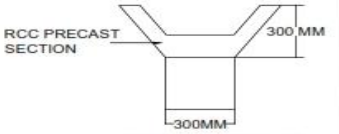
Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	47340	47360	20	TCS-14
2	48640	48700	60	TCS-14
3	49100	49140	40	TCS-14
4	50600	50620	20	TCS-14
5	50920	50980	60	TCS-14
6	51680	51720	40	TCS-14
7	54380	54420	40	TCS-14
8	55000	55024	24	TCS-14
9	55036	55160	124	TCS-14
10	55440	55460	20	TCS-14
11	56900	56940	40	TCS-14
12	58260	58280	20	TCS-14
13	60080	60100	20	TCS-14
14	60120	60140	20	TCS-14
15	65860	65900	40	TCS-14
16	66100	66120	20	TCS-14
17	70900	70920	20	TCS-14
18	71780	71820	40	TCS-14
19	72240	72280	40	TCS-14
20	75500	75520	20	TCS-14
21	77180	77280	100	TCS-14
	TOTAL LENGTH		828	



DRAIN SHALL BE AS PER IRC:SP:42-2014



DETAIL AT 'A' (TYPE III KURB)



CROSS SECTION OF FUME/CHUTE

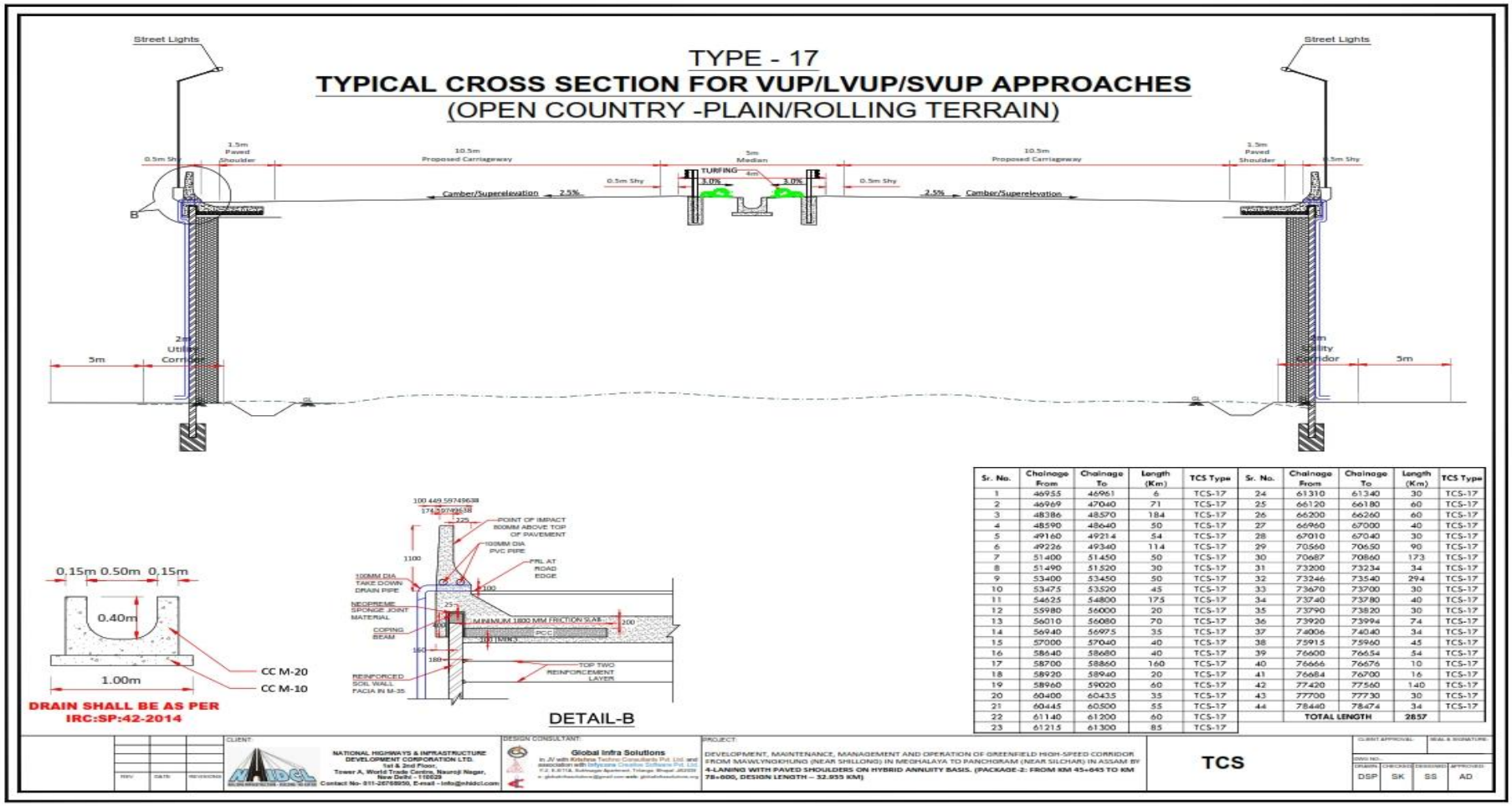
CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029 Contact No- 011-26780950, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infocoms Creative Software Pvt. Ltd.

PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD



Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type	Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	46955	46961	6	TCS-17	24	61310	61340	30	TCS-17
2	46969	47040	71	TCS-17	25	66120	66180	60	TCS-17
3	48386	48570	184	TCS-17	26	66200	66260	60	TCS-17
4	48590	48640	50	TCS-17	27	66960	67000	40	TCS-17
5	49160	49214	54	TCS-17	28	67010	67040	30	TCS-17
6	49226	49340	114	TCS-17	29	70560	70650	90	TCS-17
7	51400	51450	50	TCS-17	30	70687	70860	173	TCS-17
8	51490	51520	30	TCS-17	31	73200	73234	34	TCS-17
9	53400	53450	50	TCS-17	32	73246	73540	294	TCS-17
10	53475	53520	45	TCS-17	33	73670	73700	30	TCS-17
11	54625	54800	175	TCS-17	34	73740	73780	40	TCS-17
12	55980	56000	20	TCS-17	35	73790	73820	30	TCS-17
13	56010	56080	70	TCS-17	36	73920	73994	74	TCS-17
14	56940	56975	35	TCS-17	37	74006	74040	34	TCS-17
15	57000	57040	40	TCS-17	38	75915	75960	45	TCS-17
16	58640	58680	40	TCS-17	39	76600	76654	54	TCS-17
17	58700	58860	160	TCS-17	40	76666	76676	10	TCS-17
18	58920	58940	20	TCS-17	41	76684	76700	16	TCS-17
19	58960	59020	60	TCS-17	42	77420	77560	140	TCS-17
20	60400	60435	35	TCS-17	43	77700	77730	30	TCS-17
21	60445	60500	55	TCS-17	44	78440	78474	34	TCS-17
22	61140	61200	60	TCS-17		TOTAL LENGTH		2857	
23	61215	61300	85	TCS-17					

NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029
Contact No- 011-25768950, E-mail - info@nhidcl.com

Global Infra Solutions

DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

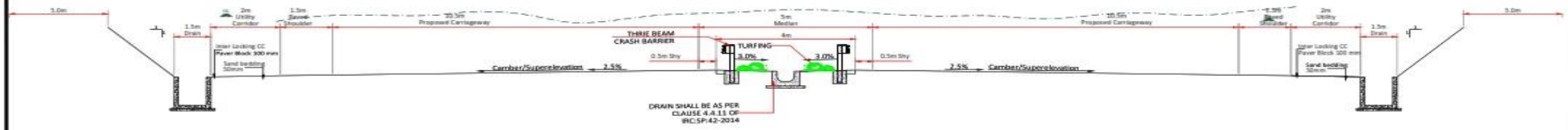
TCS

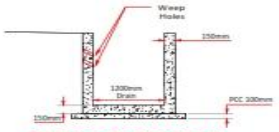
DSP	SK	SS	AD

TYPE - 01 (A)

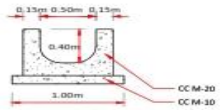
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY - MOUNTAINOUS TERRAIN)

CUTTING HEIGHT < 3M
NEW CONSTRUCTION SECTION





DETAILS OF RCC DRAIN



DRAIN SHALL BE AS PER IRC:SP:42-2014

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	73820	73900	80	TCS-1A
2	77730	77760	30	TCS-1A
3	78420	78440	20	TCS-1A
	TOTAL LENGTH		130	

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1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029
Contact No- 011-26765956, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions

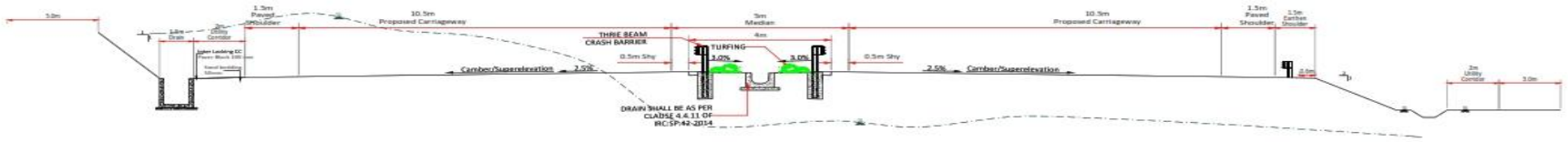
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

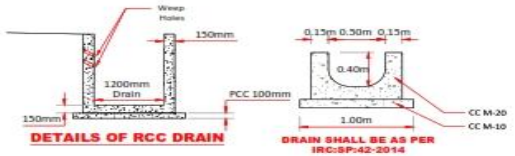
TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD

TYPE - 02 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

PARTIAL CUT/FILL HEIGHT < 3M
NEW CONSTRUCTION SECTION





Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	46580	46600	20	TCS-2A
2	55920	55980	60	TCS-2A
3	67280	67300	20	TCS-2A
4	68580	68610	30	TCS-2A
5	68980	69020	40	TCS-2A
6	69310	69340	30	TCS-2A
7	71920	71935	15	TCS-2A
8	73540	73580	40	TCS-2A
9	73620	73640	20	TCS-2A
10	73700	73740	40	TCS-2A
11	73900	73920	20	TCS-2A
	TOTAL LENGTH		335	

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DESIGN CONSULTANT: Global Infra Solutions

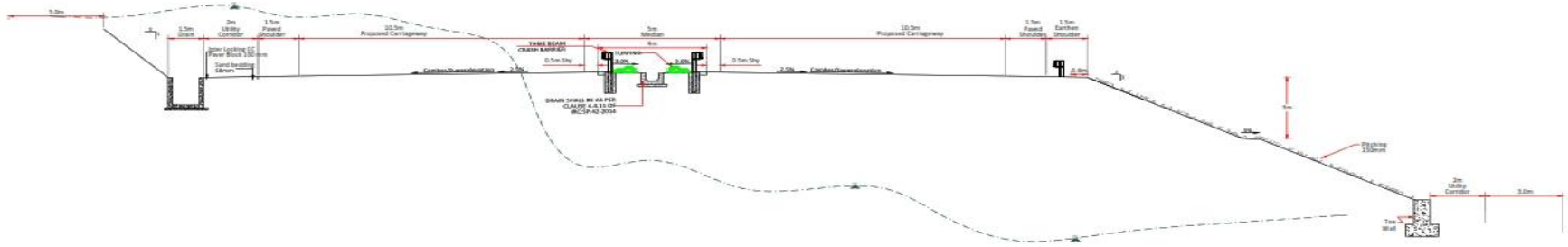
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

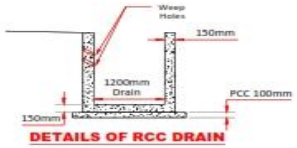
TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD

TYPE - 03 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

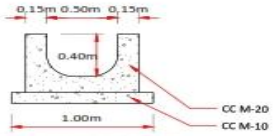
CUTTING HEIGHT <3M, FILLING HEIGHT >3M
NEW CONSTRUCTION SECTION





DETAILS OF RCC DRAIN

DETAILS OF TOE WALL FOR PITCHING



DRAIN SHALL BE AS PER IRC:SP:42-2014

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	68920	68940	20	TCS-3A
	TOTAL LENGTH		20	

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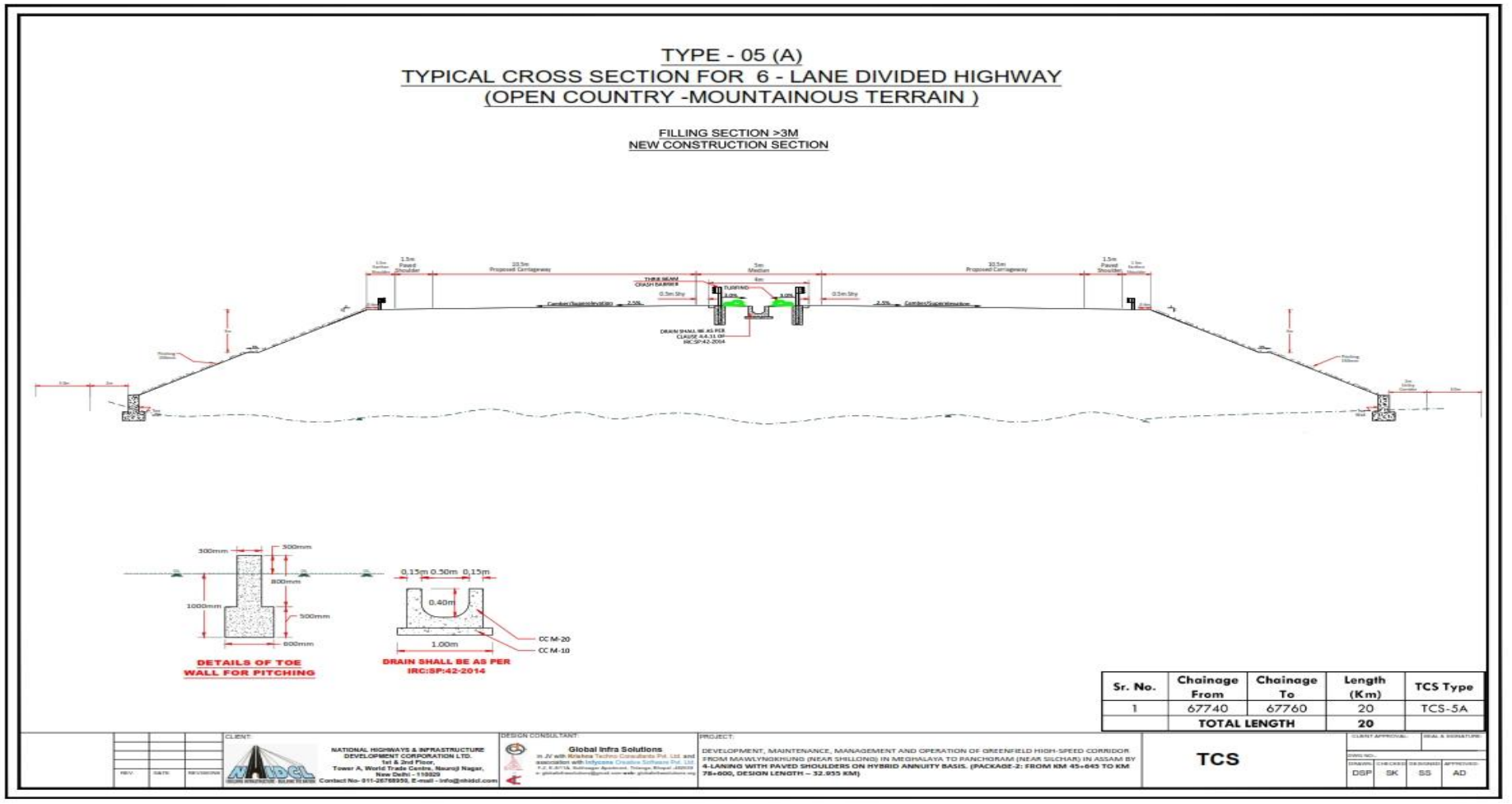
DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd.

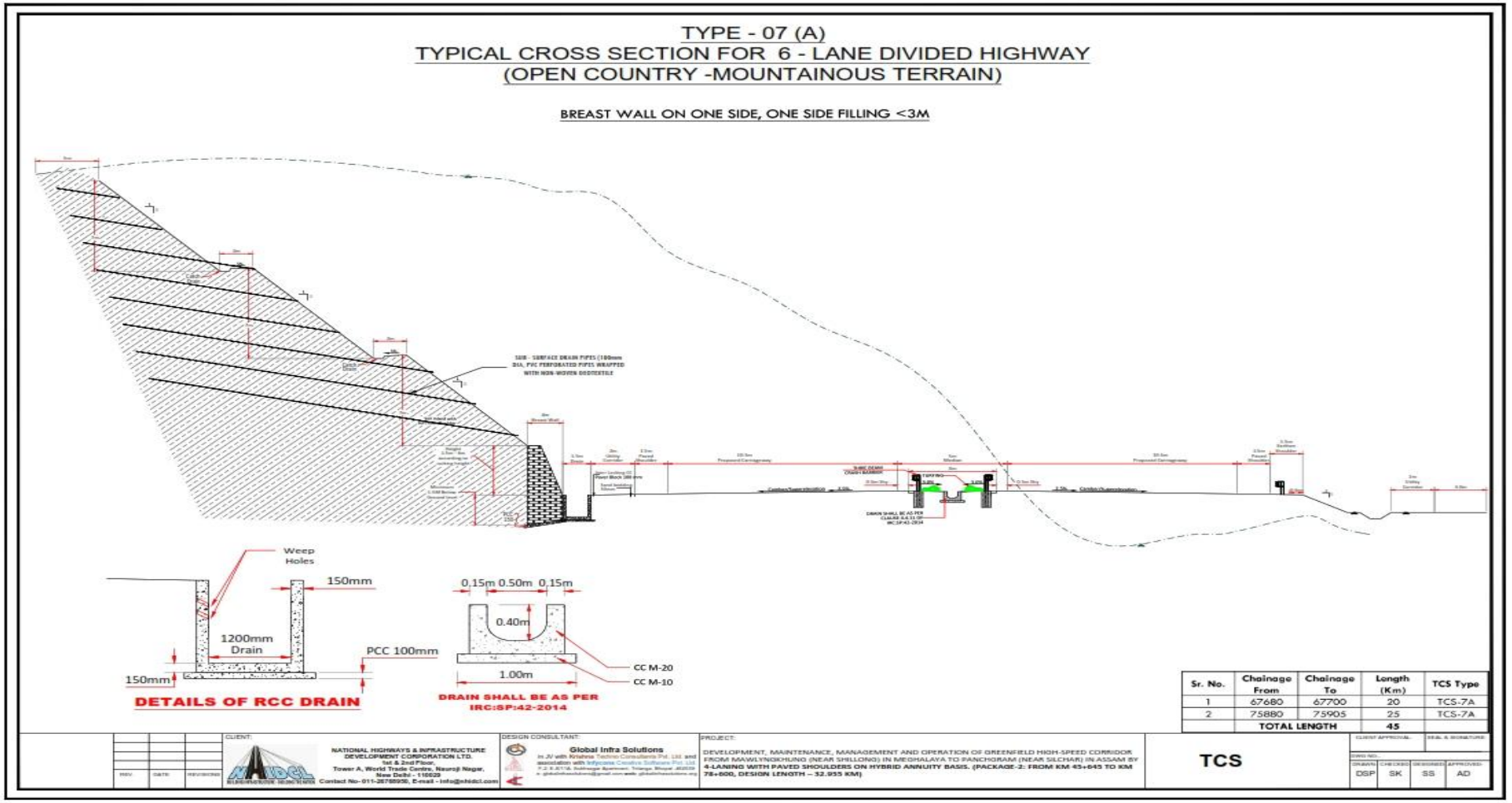
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD



Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	67740	67760	20	TCS-5A
	TOTAL LENGTH		20	


TYPE - 07 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
BREAST WALL ON ONE SIDE, ONE SIDE FILLING <3M
Weep Holes
150mm
1200mm Drain
PCC 100mm
150mm
DETAILS OF RCC DRAIN
0.15m 0.50m 0.15m
0.40m
1.00m
CC M-20
CC M-10
DRAIN SHALL BE AS PER IRC:SP:42-2014
Sr. No. | Chainage From | Chainage To | Length (Km) | TCS Type
1 | 67680 | 67700 | 20 | TCS-7A
2 | 75880 | 75905 | 25 | TCS-7A
TOTAL LENGTH | 45
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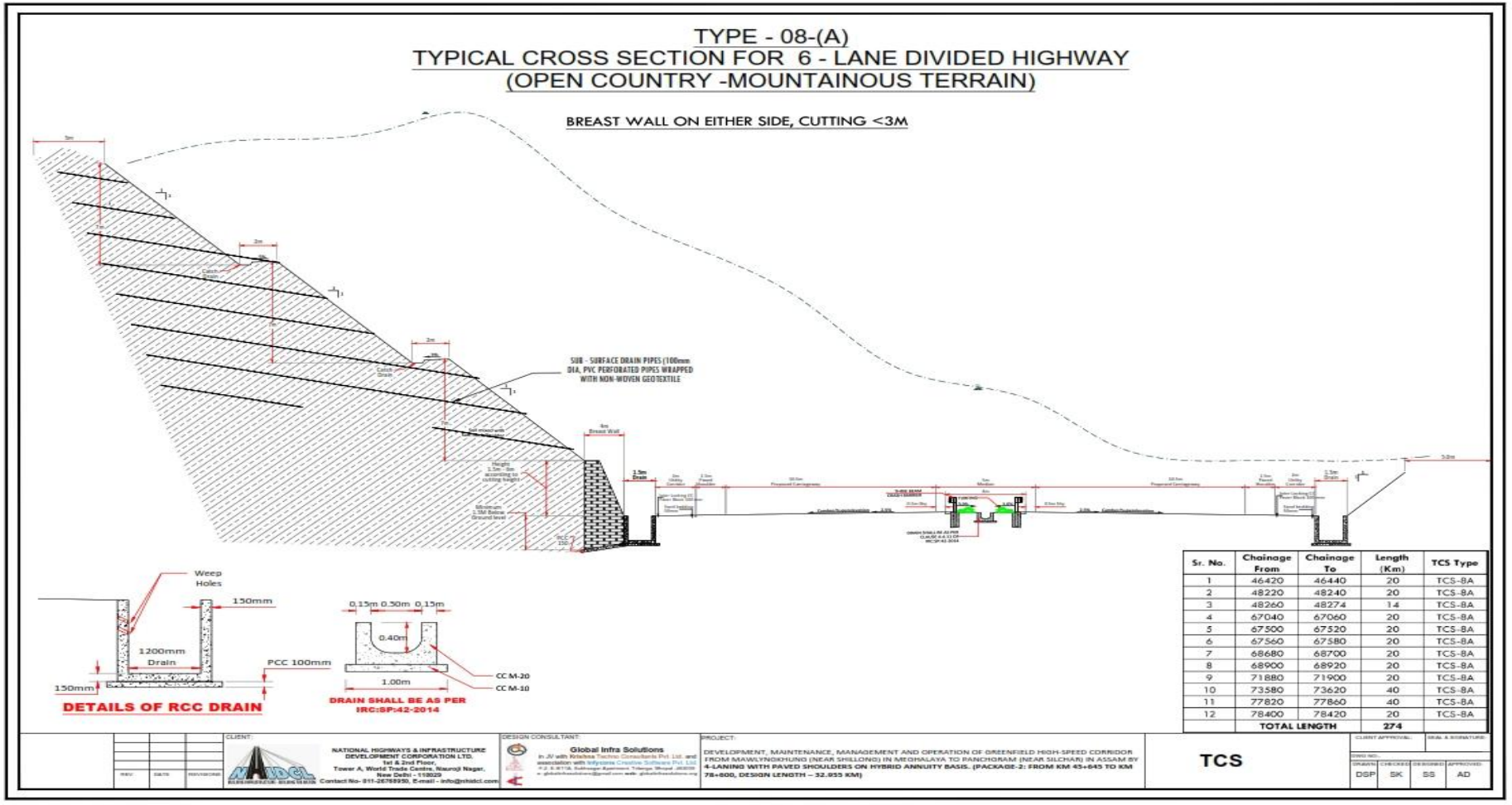
DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)
TCS
DSP
SK
SS
AD


TYPE - 08-(A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
BREAST WALL ON EITHER SIDE, CUTTING <3M
SUB - SURFACE DRAIN PIPES (100mm DIA, PVC PERFORATED PIPES WRAPPED WITH NON-WOVEN GEOTEXTILE
Weep Holes
150mm
1200mm Drain
PCC 100mm
150mm
DETAILS OF RCC DRAIN
0.15m 0.30m 0.15m
0.40m
1.00m
CC M-20
CC M-10
DRAIN SHALL BE AS PER IRC:SP:42-2014
Sr. No. | Chainage From | Chainage To | Length (Km) | TCS Type
1 | 46420 | 46440 | 20 | TCS-8A
2 | 48220 | 48240 | 20 | TCS-8A
3 | 48260 | 48274 | 14 | TCS-8A
4 | 67040 | 67060 | 20 | TCS-8A
5 | 67500 | 67520 | 20 | TCS-8A
6 | 67560 | 67580 | 20 | TCS-8A
7 | 68680 | 68700 | 20 | TCS-8A
8 | 68900 | 68920 | 20 | TCS-8A
9 | 71880 | 71900 | 20 | TCS-8A
10 | 73580 | 73620 | 40 | TCS-8A
11 | 77820 | 77860 | 40 | TCS-8A
12 | 78400 | 78420 | 20 | TCS-8A
TOTAL LENGTH | | | 274 |
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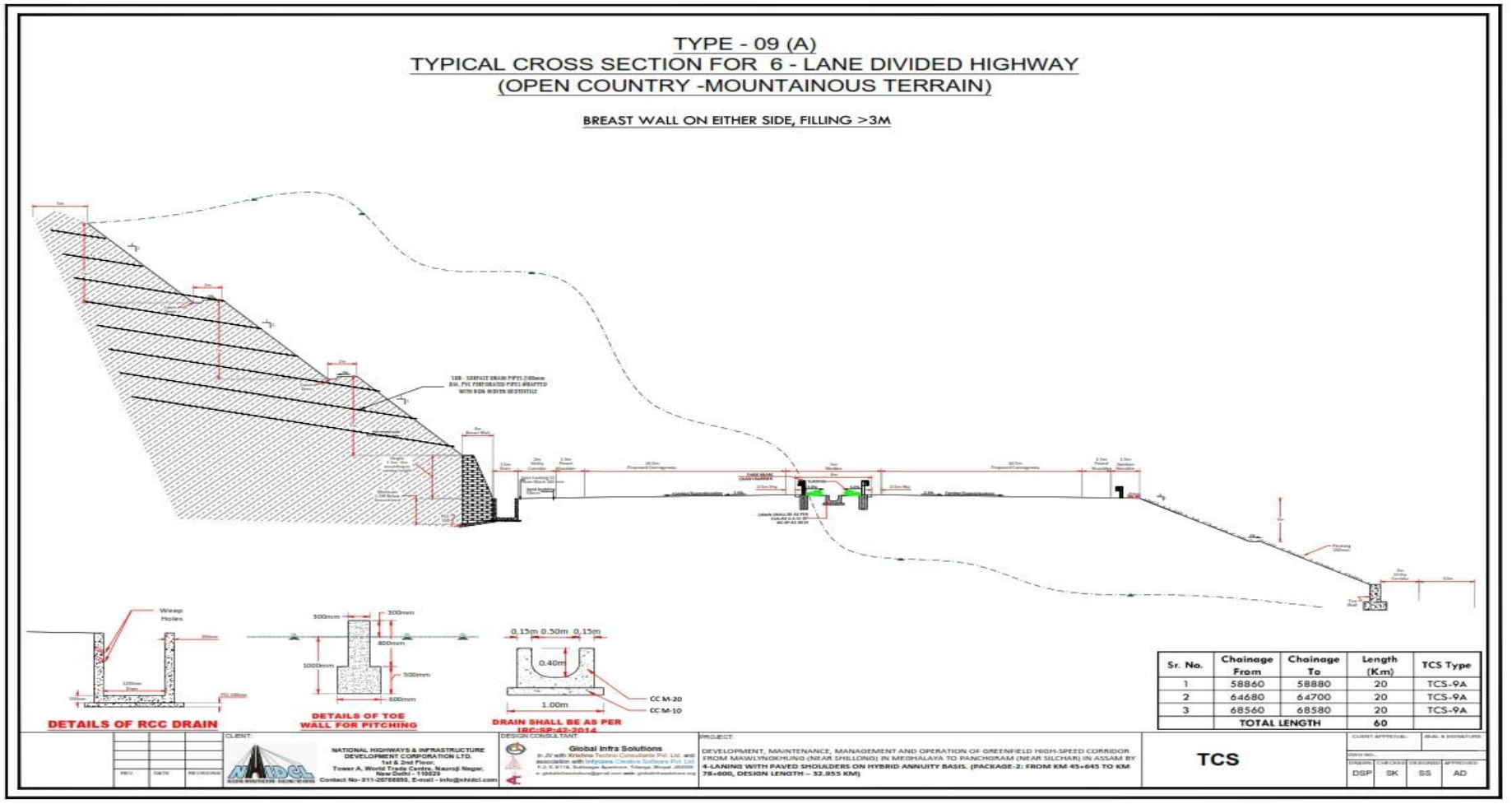
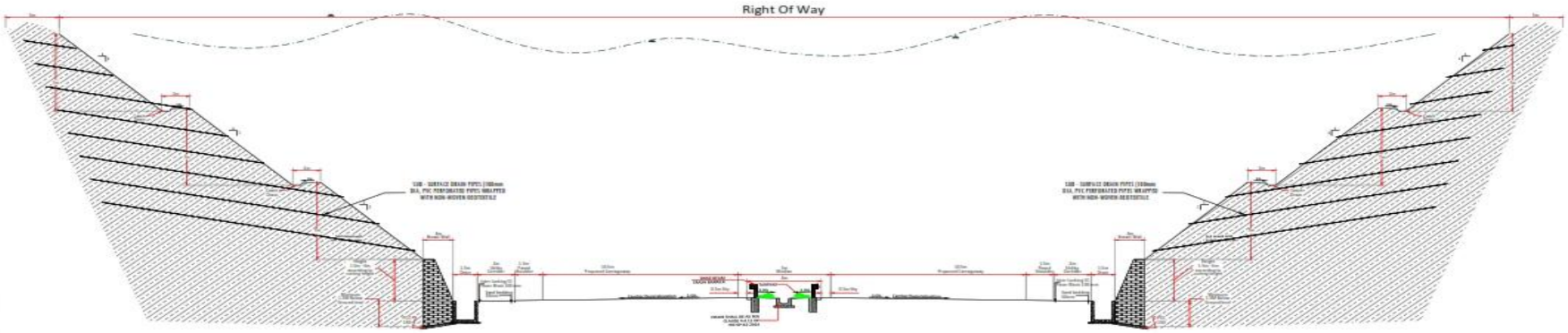
Global Infra Solutions
DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)
TCS
DRAWN DSP
CHECKED SK
DESIGNED SS
APPROVED AD

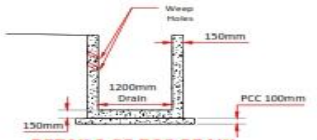

TYPE - 09 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
BREAST WALL ON EITHER SIDE, FILLING >3M
Weep Holes
DETAILS OF RCC DRAIN
DETAILS OF TOE WALL FOR PITCHING
DRAIN SHALL BE AS PER IRC:SP:42-2014
CC M-20
CC M-10
Sr. No. | Chainage From | Chainage To | Length (Km) | TCS Type
1 | 58860 | 58880 | 20 | TCS-9A
2 | 64680 | 64700 | 20 | TCS-9A
3 | 68560 | 68580 | 20 | TCS-9A
TOTAL LENGTH | 60
TCS
DSP
SK
SS
AD

TYPE - 10 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)

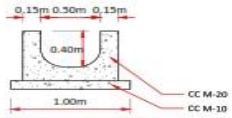
BREAST WALL BOTH SIDES



Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	46400	46420	20	TCS-10A
2	48240	48260	20	TCS-10A
3	67060	67280	220	TCS-10A
4	67420	67500	80	TCS-10A
5	67580	67680	100	TCS-10A
6	67760	67780	20	TCS-10A
7	68700	68900	200	TCS-10A
8	69340	69360	20	TCS-10A
9	70180	70200	20	TCS-10A
10	71900	71920	20	TCS-10A
11	75860	75880	20	TCS-10A
12	76700	76740	40	TCS-10A
13	77760	77820	60	TCS-10A
14	77860	77920	60	TCS-10A
	TOTAL LENGTH		900	



DETAILS OF RCC DRAIN



DRAIN SHALL BE AS PER IRC:SP:42-2014

CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029. Contact No- 011-26788950, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions in JV with Krishna Techno Consultants Pvt. Ltd. and association with Infycons Creative Software Pvt. Ltd.

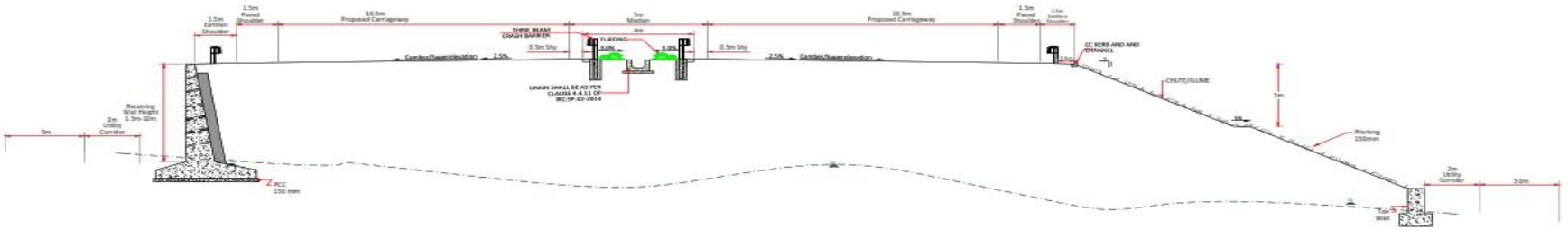
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

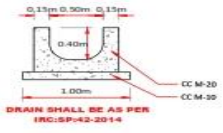
TCS

CLIENT APPROVAL | SEAL & SIGNATURE

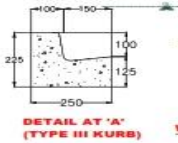
DRAWN: DSP | CHECKED: SK | DESIGNED: SS | APPROVED: AD

TYPE - 11 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
RETAINING WALL ON EITHER SIDE, FILLING >3M



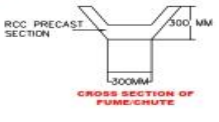


DRAIN SHALL BE AS PER IRC:SP:42-2014



DETAIL AT 'A' (TYPE III KURB)

DETAILS OF TOE WALL FOR PITCHING



CROSS SECTION OF FUME/CHUTE

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	67300	67379	79	TCS-11A
2	67391	67420	29	TCS-11A
3	68620	68640	20	TCS-11A
4	70000	70025	25	TCS-11A
5	71975	72080	105	TCS-11A
6	72106	72140	34	TCS-11A
7	73640	73660	20	TCS-11A
8	78486	78520	34	TCS-11A
	TOTAL LENGTH		346	

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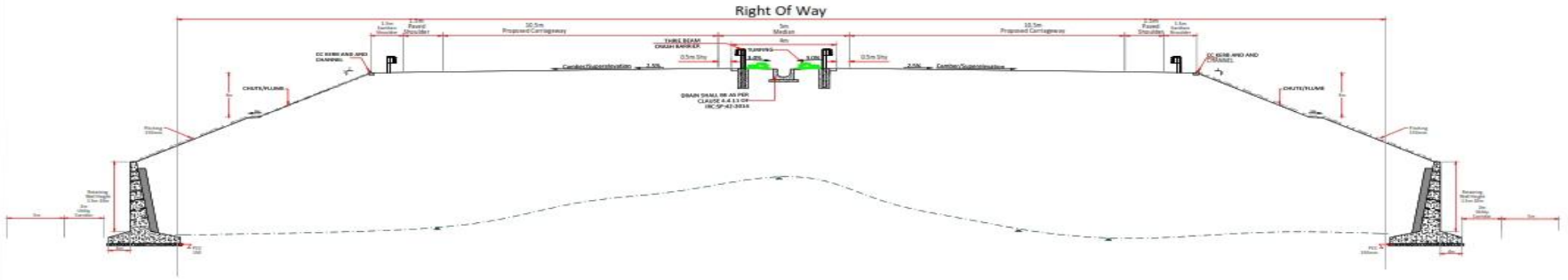
DESIGN CONSULTANT: Global Infra Solutions

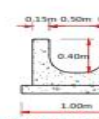
PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

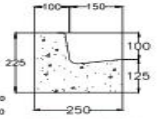
DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD

TYPE - 14 (A)
TYPICAL CROSS SECTION FOR 6 - LANE DIVIDED HIGHWAY
(OPEN COUNTRY -MOUNTAINOUS TERRAIN)
RETAINING WALL ON BOTH SIDES IN HIGH EMBANKMENT

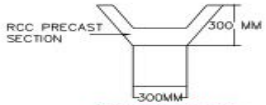




DRAIN SHALL BE AS PER IRC:SP:42-2014



DETAIL AT 'A' (TYPE III KURB)



CROSS SECTION OF FUME/CHUTE

Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	67550	67560	10	TCS-14A
2	68940	68980	40	TCS-14A
3	72080	72094	14	TCS-14A
	TOTAL LENGTH		64	

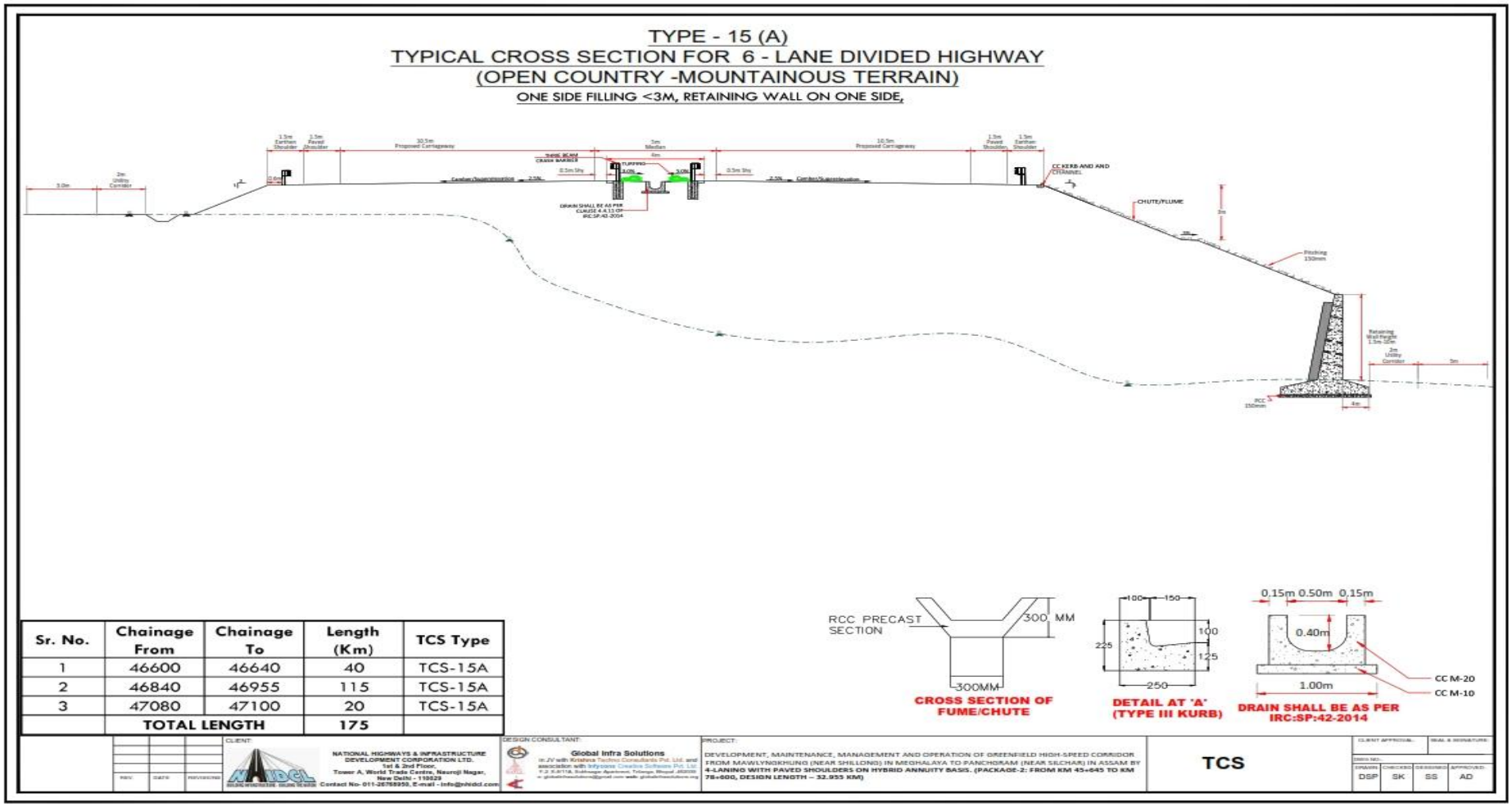
CLIENT: NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD. 1st & 2nd Floor, Tower A, World Trade Centre, Nauroji Nagar, New Delhi - 110029 Contact No- 011-26708555, E-mail - info@nhidcl.com

DESIGN CONSULTANT: Global Infra Solutions

PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD



Sr. No.	Chainage From	Chainage To	Length (Km)	TCS Type
1	46600	46640	40	TCS-15A
2	46840	46955	115	TCS-15A
3	47080	47100	20	TCS-15A
	TOTAL LENGTH		175	

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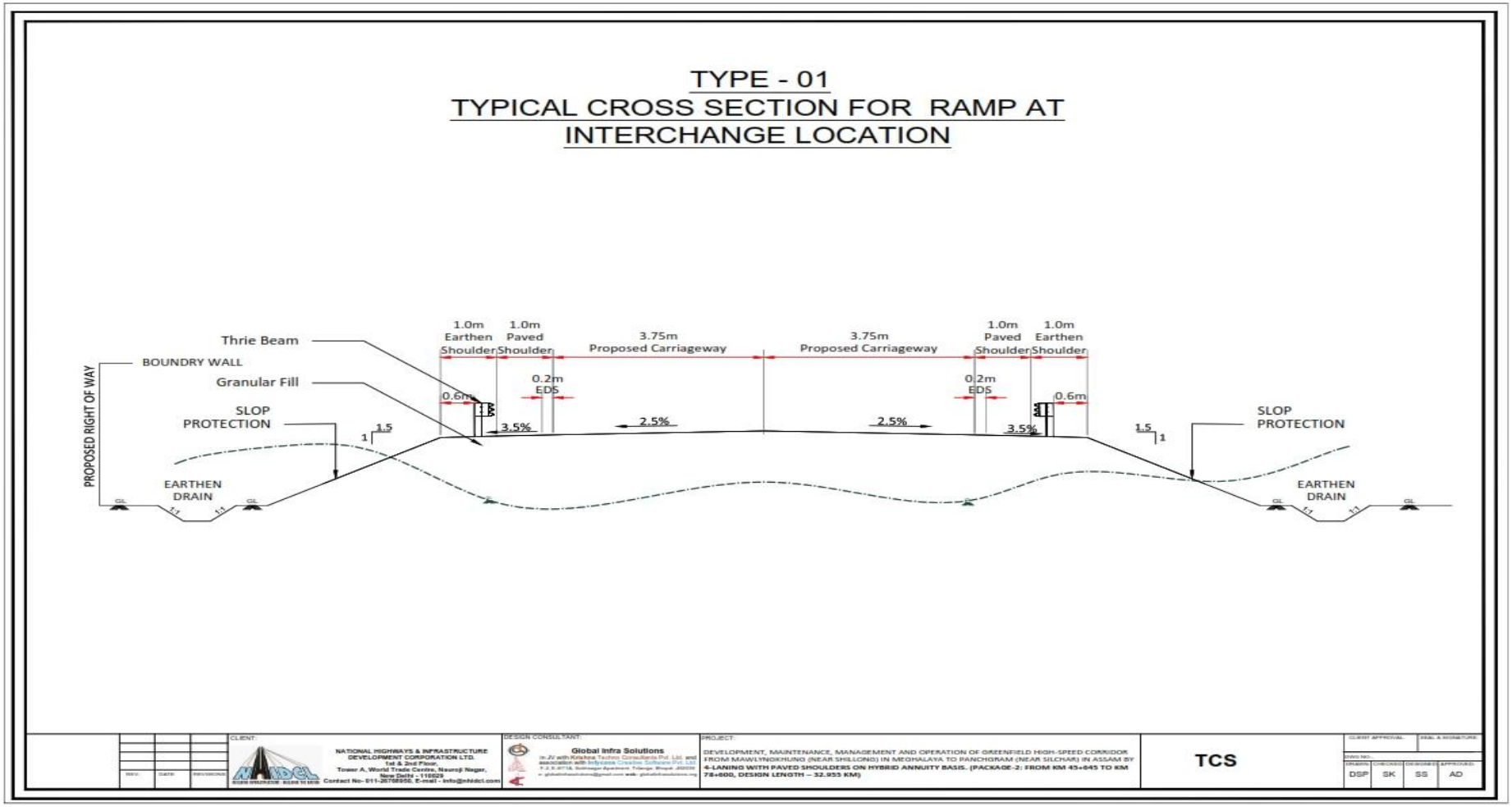
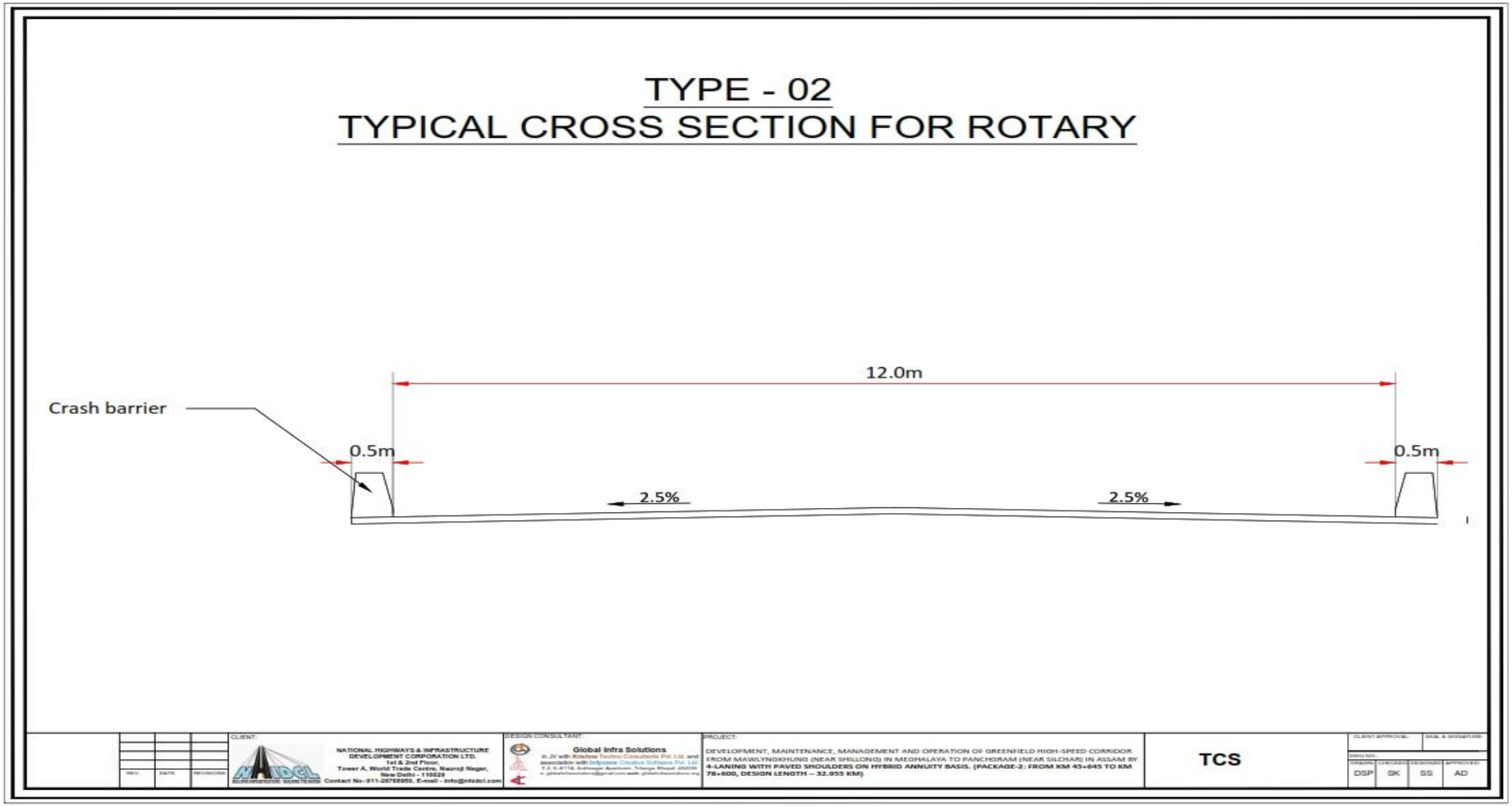
DESIGN CONSULTANT: Global Infra Solutions

PROJECT: DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)

TCS

DRAWN	CHECKED	DESIGNED	APPROVED
DSP	SK	SS	AD


TYPE - 01
TYPICAL CROSS SECTION FOR RAMP AT
INTERCHANGE LOCATION
Thrie Beam
BOUNDRY WALL
Granular Fill
SLOP PROTECTION
PROPOSED RIGHT OF WAY
EARTHEN DRAIN
1.0m Earthen Shoulder
1.0m Paved Shoulder
3.75m Proposed Carriageway
3.75m Proposed Carriageway
1.0m Paved Shoulder
1.0m Earthen Shoulder
0.2m EDS
0.2m EDS
0.6m
0.6m
3.5%
2.5%
2.5%
3.5%
1.5
1
1.5
1
SLOP PROTECTION
EARTHEN DRAIN
NATIONAL HIGHWAYS & INFRASTRUCTURE DEVELOPMENT CORPORATION LTD.
Global Infra Solutions
DEVELOPMENT, MAINTENANCE, MANAGEMENT AND OPERATION OF GREENFIELD HIGH-SPEED CORRIDOR FROM MAWLYNGKHUNG (NEAR SHILLONG) IN MEGHALAYA TO PANCHGRAM (NEAR SILCHAR) IN ASSAM BY 4-LANING WITH PAVED SHOULDERS ON HYBRID ANNUITY BASIS. (PACKAGE-2: FROM KM 45+645 TO KM 78+600, DESIGN LENGTH – 32.955 KM)
TCS
DSP
SK
SS
AD


TYPE - 02
TYPICAL CROSS SECTION FOR ROTARY
12.0m
Crash barrier
0.5m
0.5m
2.5%
2.5%
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TCS
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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.

Annexure – II
(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
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g) Pedestrian Facilities
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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 NHAI circular No.17.5.82 dated 24/5/2021 and Schedule D. Minimum lane requirement in the opening year are as follows.

Toll plaza shall be provided at the following locations.

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

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

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

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

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

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

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

7.Provide Lane markings and Traffic Signs as per IRC: SP: 84-2019, IRC 35 and IRC 67 (Clause No. 10.8 & 10.9 of IRC: SP:84-2019)

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:84-2019)

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:84-2019)

2. Roadside furniture

2.1 Kilometre and Hectometre Stones

S.No.	Item	Number	Remarks
1	**Kilometer Marker/ Stones (including 5th Kilometer stone)**	68	The KM/Hectometer stones/ marker can be Concrete/ Stones and shall be placed on both outer side of the earthen shoulder. The size of Kilometer/ 5th 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. 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	**Hectometer Marker/ Stones**	264	

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. A QR code shall be marked on back of each sign as per IRC 67:2022.

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 confirm to Table 4.1 and Fig 4.1 of IRC 67 2022. The two successive signs shall be placed at a minimum distance of 0.6 x 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	-

S.No.	Item	Carriageway (Left, Right, Both)
2	Overhead Gantry signs	
a	Reassurance Sign- (Before 10 Km of exit) At 3 Nos. Interchanges exit	Both Side
3	Overhead Gantry signs (Vehicle Type) 2 nos. for each direction	Both Side
4	Cantilever Gantry signs	
a	Advance Direction Sign 2Km Before Exit At 3 Nos. Interchanges exit	Both Side
5	Cantilever Gantry signs at Fee Plaza	
a	At Ch. 54.660 Exit, 55.360 Entry, 55.150 Exit, 54.620 Entry. 54.580 Exit, 65.460 Entry, 65.460 Exit, 64.900 Entry. 77.460 Entry, 77.460 Exit, 78.080 Entry & 78.050 Exit	Both Side

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

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

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

Sl. 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 AE/IE
29	Two Way Traffic on Cross Road Ahead		
30	Danger Warning Sign		
31	Deaf or Blind Persons Likely on Road Ahead		
32	Cycle Crossing		
33	Cycle Route Ahead (Warning for Cycles on road ahead)		
34	Dangerous Dip		
35	Speed Breaker		
36	Rumble Strip	12	
37	Rough Road		
38	Dangerous Ditch		
39	Slippery Road		
40	Slippery Road because of Ice		
41	Opening or Swing Bridge		
42	Overhead Cable	28	
43	Play Ground Ahead		
44	Quay Side or River Bank		
45	Sudden Side Winds		
46	Tunnel Ahead Warning		
47	Falling Rocks		
48	Cattle Crossing		
49	Wild Animals likely to be on Road Ahead		
50	Queues Likely Ahead		
51	Low flying Aircraft		
52	Unguarded Railway Crossing		
53	Guarded Railway Crossing		
54	Crash prone area ahead		
55	U- Turn	-	
III	**Chevron Signs**		

Sl. No.	Road Signs	Number	Remarks
1	Single Chevron	387	
2	Double Chevron		
3	Triple Chevron		
IV	**Object Hazard Marker Sign**		
1	Left /Right side Object Hazard Marker	384	
2	Two-way Object Hazard Marker	-	
V	**Informatory/Guide**		
1	Direction and Place Identification signs	24	
2	Stack Type Advance Direction Sign (Shoulder Mounted)		
3	Stack Type Advance Direction Sign with cautionary / regulatory signs (Shoulder Mounted)		
4	Map Type Advance Direction Sign (Shoulder Mounted)		
5	Map Type Advance Direction Sign for roundabout (Shoulder Mounted)		
6	Flag Type Direction Sign	18	
7	Reassurance Sign	6	
8	Place Identification Sign		
9	Bus Lay Bay	-	
10	Toll Booth Ahead	12	
11	Weigh Bridge Ahead		
12	Shoulder Mounted Sign in Advance of a Grade Separated Junction/ Interchange		
13	Expressway Sign		
14	Gantry Mounted Advanced Direction Sign Ahead of a Flyover in Urban/City Roads		Instead of continuous sign board, Separate Signs shall be provided for each information
15	Gantry Mounted advance Direction Sign Ahead of a Grade Separated Junction		
16	Gantry Mounted advance Direction Sign Ahead of a At Grade Intersection		
17	Gantry Mounted Advance Direction Sign for Interchange	6	
18	Cantilever Gantry Mounted Advance Direction Sign for Interchange	6	
19	Lane Dedicated Gantry Sign	2	
20	Definition/Supplementary Plates		
21	Tourism Related Sign		
22	Tourist Destination Direction Information Signs Without Photograph		
23	Tourist Destination Direction Information Signs With Photograph		
24	Finger Destination direction Information Sign for Pedestrians		
25	Tourist Map Information Sign		
26	Boundary Sign at Entrance to a City/Place		
27	Boundary Sign at Entrance to a Tourist Destination		

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

Sl. No.	Road Signs	Number	Remarks
2	International symbol of Accessibility		
3	Parking Information		
4	Parking Areas		
5	Ramped Entrance to Subway/Over Bridge		
6	Telephone Facilities	8	
7	Toilet Facilities	12	
8	Way Finding		
9	Parking Signs		
10	Auto Rickshaw Parking		
11	Cycle Parking		
12	Cycle Rickshaw Parking		
13	Scooter and Motorcycle Parking		
14	Taxi Parking		
15	Park and Ride		
16	Parking Restrictions Signs for Traffic Management		
17	Flood Gauge Sign		
VIII	**Route Maker Signs**		
1	State Highway Route Marker Sign		
2	National Highway Route Marker Sign		
3	Asian Highway Route Marker Sign		
4	Expressway Route Marker Sign	14	

2.3 Road Marking

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

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

S.No.	Item	Unit		Remarks
		Length/Area	Number	
1	Longitudinal Marking	-		
2	Transverse Marking			
3	Hazard Marking			
4	Block Marking			
5	Arrow Marking		2363	
6	Directional Marking	10070m^2		
7	Facility Marking			
8	Center Line	3860m^2		
9	Traffic Lane Lines	-	-	
10	No Overtaking Lines			
11	Warning Lines			
12	Border or Edge Lines	19773m^2		
13	Longitudinal Markings for Undivided Roads			
14	Longitudinal Markings for Divided Roads			
15	Longitudinal Markings for Ramps/Slip Roads/One Way Streets	108		
16	Stop Line		-	

S.No.	Item	Unit		Remarks
		Length/Area	Number	
17	Give Way Lines		-	
18	Ghost Island			
19	Chevron Markings	11.23		
20	Continuity Line			
21	Word Messages			
22	Lane Change			
23	Merging/Diverging Markings			
24	Hatch Markings			
25	Raised Profile Edge Lines	216		Rumble Strips
26	Lane Reduction / Narrowing Situations and Transitions (lane Balancing)			
27	Directional Arrows			
28	Mandatory Turn Arrows			
29	Guidance Arrows			
30	Deflection Arrows			
31	Bifurcation Arrows			
32	Arrows on Side Road Approaches			
33	Arrows on Main Road Approaches			
34	Word Messages			
35	Yellow Box Markings			
36	Diagonal Markings for ramps	66.5		
37	Marking for Speed Breakers			
38	Pedestrian Crossing			
39	Markings when highway passes through settlement fig 9.4 of IRC SP 84/87			
40	Transverse Bar Markings			
41	Bus bay Marking			
42	Truck Lay-by Markings			
43	Toll Plaza Marking	50	-	
44	School Zone Markings			
45	Object Markings within Carriageway			
46	Objects Markings Adjacent to Carriageway			
47	i. Subway Piers, Abutments, Culverts Head Walls, Concrete Barrier			
48	ii. Electrical Poles			
49	iii. Guard Rails			
50	iv. Trees			
51	v. Kerbs	-		
52	Directional Markings as per Annexure: A 6 of IRC:35-2015			
53	Facility Markings as per Annexure A 6 of IRC:35-2015			

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

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

S.No.	Item	Number/ Length (m)	Remarks
1	Roadway Indicators	-	On Curves & in Slip Road at underpass
2	Median Marker on Median/ RCC Barrier **(Clause 4 of IRC 79 2019)**	5743	

S.No.	Item	Number/ Length (m)	Remarks
3	Object Markers	-	At Intersections, Grade Separators, Bridges & ROB locations
4	Road Delineators	1184	
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	57430 m (In median) & 13619 m (In sharp curve & Embankment)	On Thrie Beam Crash Barrier in Fig 2.2A on either side
6	Solar Blinkers on Median opening, on exit from main carriageway and traffic island of grade separated intersections.	-	

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

2.5 Reflective Pavement Markers & Solar Studs

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

S.No.	Item	Number	Location	Remarks
A- For 4 Lane Projects				
1	White Colour one coloured face Road Studs	3989	Traffic lane line & center of carriageway	-
2	Red Colour one coloured face Road Studs	3989	Left hand edge of the carriageway, entry to bus bay, start of service road, chevron/diagonal markings on gorge	
3	Yellow / Amber Colour one coloured face Road Studs	3989	Median side edge line, zebra crossing	
4	Green Colour one coloured face Road Studs	-	Lay byes, left hand side of the carriageway in case of multi-lane divided carriageways, crossable continuous line like in acceleration/deceleration lanes involving lane changing	
5	Solar Studs on Major/Minor bridge, RoB, and all structures (Interchange/Flyover/VUP) and Builtup areas, In storage lane of median opening and Exit/Entry from main carriageway	-	NIL	

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

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

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	-	As per site requirement
2	Any other location which Safety Hazard -Before Toll Plaza	-	As per site requirement

2.6.2 Providing End Terminals

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

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

2.7 Boundary Wall and Fencing (Clause No. 12.2 IRC-SP-84-2019):

Boundary wall shall be provided along the entire length on either side (including transverse requirements at structure locations) as per the detail given below in accordance with IRC:SP:84/87. Road boundary 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. The boundary walls shall be of reinforced cement concrete as per figure enclosed as Annexure A.

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

3. Operation and Maintenance centers-

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

4. Wayside Amenities / Service Areas/Rest Area

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

The site needs to levelled/graded/paved for the whole of way side amenities area and boundary wall of the height of 1.5m shall be constructed along the periphery of the area.

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: 2022 including paving of laybye, signs, markings, speed calming measures, drainage, lighting etc., in built-up areas, intersections of NH/SH/MDR and roads leading to large settlements is as follows:

6.1 Bus Shelters locations

Bus shelters shall be constructed at the following locations:

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

6.2 Kerb Side Bus Stop with Pedestrian shelter

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

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

6.3 Bus Bay Pavement

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

7. Pedestrian Facilities

Pedestrian Facilities shall be provided in accordance with the Manual of Specifications and Standards as referred in Clause 9.8 of Schedule D and IRC 103 2022. This shall consist of footpath (sidewalks), pedestrian guard rails and pedestrian crossing.
The details are as mentioned below:

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

8. Highway Lighting

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

Sl.No.	**Lighting facilities**	**Chainage**		**Side**	**Lighting Source: Electricity Board/ Generator/ Solar**
		From	**To**		
1	**High mast lighting of 25m height (In interchanges and Entry-Exit ramps)**	**1.** 3 Interchanges- At Ch. 54.800, 65.000 & 77.800 2. Ramps Entry-Exit- At Ch. 54.660 Exit, 55.360 Entry, 55.150 Exit, 54.620 Entry. 54.580 Exit, 65.460 Entry, 65.460 Exit, 64.900 Entry. 77.460 Entry, 77.460 Exit, 78.080 Entry & 78.050 Exit 3. At Emergency Lay Bye location 1 no.			**Electricity Board/ Generator/ Solar**
2	**On Major/Minor Bridges, viaducts and Underpasses and its approaches (Both side Over hanged) for**	46+440	46+560	Both	Electricity Board/ Generator/ Solar
		46+955	46+961	Both	
		46+961	46+969	Both	
		46+969	47+040	Both	

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
	main carriageway and service road	48+274	48+386	Both	
		48+386	48+570	Both	
		48+570	48+590	Both	
		48+590	48+640	Both	
		49+160	49+214	Both	
		49+214	49+226	Both	
		49+226	49+340	Both	
		50+547	50+572	Both	
		51+096	51+104	Both	
		51+400	51+450	Both	
		51+450	51+490	Both	
		51+490	51+520	Both	
		53+400	53+450	Both	
		53+450	53+475	Both	
		53+475	53+520	Both	
		54+625	54+800	Both	
		55+024	55+036	Both	
		55+980	56+000	Both	
		56+000	56+010	Both	
		56+010	56+080	Both	
		56+616	56+624	Both	
		56+940	56+975	Both	
		56+975	57+000	Both	
		57+000	57+040	Both	
		57+256	57+264	Both	
		58+640	58+680	Both	
		58+680	58+700	Both	
		58+700	58+860	Both	
		58+920	58+940	Both	
		58+940	58+960	Both	
		58+960	59+020	Both	
		60+400	60+435	Both	
		60+435	60+445	Both	
		60+445	60+500	Both	
		61+140	61+200	Both	
		61+200	61+215	Both	
		61+215	61+300	Both	
		61+300	61+310	Both	
		61+310	61+340	Both	
		64+594	64+606	Both	
		66+120	66+180	Both	
		66+180	66+200	Both	

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
		66+200	66+260	Both	
		66+960	67+000	Both	
		67+000	67+010	Both	
		67+010	67+040	Both	
		67+379	67+391	Both	
		67+520	67+550	Both	
		67+700	67+740	Both	
		68+610	68+620	Both	
		69+020	69+310	Both	
		70+025	70+145	Both	
		70+560	70+650	Both	
		70+650	70+687	Both	
		70+687	70+860	Both	
		71+935	71+975	Both	
		72+094	72+106	Both	
		72+312	72+320	Both	
		73+200	73+234	Both	
		73+234	73+246	Both	
		73+246	73+540	Both	
		73+660	73+670	Both	
		73+670	73+700	Both	
		73+740	73+780	Both	
		73+780	73+790	Both	
		73+790	73+820	Both	
		73+920	73+994	Both	
		73+994	74+006	Both	
		74+006	74+040	Both	
		75+905	75+915	Both	
		75+915	75+960	Both	
		76+600	76+654	Both	
		76+654	76+666	Both	
		76+666	76+676	Both	
		76+676	76+684	Both	
		76+684	76+700	Both	
		77+420	77+560	Both	
		77+560	77+700	Both	
		77+700	77+730	Both	
		78+166	78+174	Both	
		78+440	78+474	Both	
		78+474	78+486	Both	

Sl.No.	Lighting facilities	Chainage		Side	Lighting Source: Electricity Board/ Generator/ Solar
		From	To		
3	Grade separated interchanges, underpasses pedestrian) overpasses: Lighting requirement shall be as per section 12 of the manual. The top and underside of the grade separated structures including service road/ slip road, interchange area at the ground level up to 50m beyond the point from where flaring of the main carriageway takes place shall be provided with lighting. Also, on all legs of at grade interchange/ crossings the lighting shall be provided 50m beyond the point of Centre on all legs. The minimum illumination shall be 40 Lux., at the extreme edge of the Highway	Ch 54+760, Ch 65+010, Ch 77+750			Electricity Board/ Generator/ Solar

9. Rainwater Harvesting

The provision of rainwater harvesting shall be provided at every 500 m staggered in the entire project length and shall be executed as per requirement of IRC SP: 42-2014 and IRC SP: 50-2013. Additionally, wherever urban drains are provided, which do not have a definite outfall for discharge of water, at such location one pit for rain water harvesting shall be provided along the side drains at the lowest point/ where the water stagnates. The type and location of rainwater harvesting is as follows:

S.No.	Rain water Harvesting Type	Chainage	Side	Depth of Recharge Structure
Where no outlet is available for discharging the rainwater or the nearest outlet is more than 250m				

10. Environmental Management Plan

The contractor shall ensure

1. **Tree Plantation and Protection**
   The Contractor shall ensure the plantation of **1,00,000(one lakh) trees**, each with a **tree guard**, at locations identified in coordination with the Authority or the Authority's Engineer.
2. **Sanitation and Environmental Management**

The Concessionaire/Contractor shall:

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

3. **Environmental Monitoring**

The Concessionaire/Contractor shall:

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

11. Land Scaping and Tree Plantation

The Concessionaire shall plant trees and shrubs (as per green Highway Policy) of required numbers and types at the appropriate locations within Right of Way and in the land earmarked by the Authority for afforestation as per Schedule D in the following areas.

Sl. No.	Types of Plantations	Location (Km)	Number of trees to be planted	Remarks
1	Shrubs	NIL		
2	Land Scaping	O & M Centers, Vacant land parcels, lend within loops of flyovers, Toll Plaza building and surroundings Vacant space 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	1 row of 333 plants on each side of project highway.	Trees of desired type in two rows per Km. @10 m c/c near edge of ROW on both side (As per Schedule D) preferably local like mango, Neem, Sheesham, Babul, Peepal etc. shall be planted

Drip irrigation system for median plantation by gravity/pressure sources with all necessary components / systems and emitting devices at plants shall be provided.

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

12. Advanced Traffic Management System (ATMS)

The Concessionaire is required to design, install, operate and maintain Advanced Traffic Management System (ATMS) as part of the project facilities. Advanced Traffic

Management System shall be provided as per standards and specifications specified in the manual and as per NHAI circular and shall be maintained throughout the contract period. (NHAI Policy circular no.11.53/2023 dated 10.10.2023).

The ATMS components to be deployed shall inter alia include:

12.1 General

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

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

12.1.2 Video Incident Detection and Enforcement System (VIDES)

12.1.3 Vehicle Actuated Speed Display System (VASD)

12.1.4 Fixed and Portable Variable Message Sign (VMS) System

12.1.5 Communication Network with OFC Backbone

12.1.6 Emergency Roadside Telephone System (ECB)

12.1.7 Emergency Call Box*

12.1.8 Mobile Radio Communication System*

12.1.9 ATMS Command & Control Center with ATMS Software.

12.1.10 Power Supply for Field Equipment as well as for ATMS Command & Control Center.

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

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

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

(ii) The TMCS should also be provided at the following locations so as to monitor the traffic at the following locations:

Sr. no	Equipment name	Location (Km)	LHS/RHS/BHS	Remarks
1	TMCS+RSU	46+000	Median	Pole Mounted
2	TMCS+RSU	47+000	Median	Pole Mounted
3	TMCS+RSU	48+000	Median	Pole Mounted

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

12.1.2 Video Incident Detection and Enforcement System (VIDS)

The VIDS 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 VIDS should also act as Automatic Traffic Counting and Classifying (ATCC) system. The VIDS should be provided at following locations:

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

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

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

12.1.3 Vehicle Actuated Speed Display (VASD) System

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

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

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

12.1.4 Fixed and Portable Variable Message Sign (VMS) System

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

12.1.4.1 Fixed VMS

12.1.4.1.2 Gantry (M Type)

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

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

12.1.4.1.2 Cantilever (L Type)

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

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

12.1.4.2 Portable VMS

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

12.1.5 Communication Network with OFC Backbone

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

12.1.6 Emergency Roadside Telephone System (ECB)

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

12.1.7 ATMS Command and Control Center

The Concessionaire shall integrate ATMS with existing Control Centre and operate the ATMS Command and Control Center as per the Standards and Specification. The Concessionaire shall undertake any additional civil works, interior works, MEP works, for setting up the Command

Center, including all additional related electrical, lighting, electrical connection, DG set, power backup, HVAC works, access control, building CCTV, PTZ cameras outside building, firefighting system, alarm, fire extinguishers, raised floor, housekeeping, building cleaning, maintenance, recurring charges including electricity bills, telephone bills, DG fuel, servicing, security.

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

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

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

a. The Concessionaire shall perform all the necessary application procedures to the Power Company required for the power to be supplied to the Traffic Management Centre, Sub-Centre and the field equipment in their own name. All the expenses charged by Power Companies regarding such applications and execution of work shall be borne by the Concessionaire as part of the scope of this contract. Any damage to the highway during such execution of work shall have to be repaired by the ATMS Concessionaire to the pre-existing condition without any cost implications to NHAI.

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 NHAI 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 (NHAI Policy circular no. 11.53/2023 dated 10.10.2023) with prior approval of the Authority.

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

13. Highway Patrol Units

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

14. Emergency medical services

The Contractor shall, at its own cost, construct a medical aid post at each toll plaza with a minimum size of 5 x 5 sq.m with a toilet (to be used for the patients of minimum size of 3 x3 sq.m) and hand it over to the Authority, no later than 30 (thirty) days prior to PCOD/COD. The Medical Aid Post(s) shall be deemed to be part of the project and shall vest in the Authority. Medical Aid Post shall be set up at Administrative Block with round-the-clock services for victims of accidents on the Project Highway.
One number Ambulance shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of ambulances per 50 km or less shall be provided). The Ambulance shall be brand new with fuel, driver, medical staff and insurance all-inclusive for the entire contract period. Ambulance fitted with GPS and GSM based vehicle tracker system shall be provided to be integrated with the Video Incident Detection System with ATMS, as per Schedule - D, Clause 12. 11 (strictly as per details mentioned in Annex-I of Schedule D), along with all necessary manpower (including paramedical staff), medicines, equipment's etc. and shall be maintained in an effective manner throughout the contract period starting from the appointed date. Ambulance shall be stationed on lay 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. 1One number crane shall be provided in a stretch not exceeding 50 km (if the stretch is more than 50 km additional 1 number of cranes per 50 km or less shall be provided). Crane having capacity of minimum 20T shall be made available. The crane shall be brand new with fuel, driver, and insurance all-inclusive for the entire contract period. Cranes shall be stationed on layby constructed on Project Highway@ every 20 km of each Toll Plaza.

16. Buildings for Traffic Aid Posts

Nil.

17. Building for Medical Aid Post

Nil.

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: 84-2019, referred to herein as the manual.

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

Annex - I

(Schedule-D)

SPECIFICATIONS AND STANDARDS

1 Manual of Specifications and Standards to apply

Four laning of the Project Highway shall conform to the 'Manual of Specifications and Standards for Four Laning of Highways' published as IRC: SP: 84-2019 with all amendments and additions until date. (Referred to as "Manuals" in this Schedule) and MORTH Specifications for Road & Bridge Works (5th revision). Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Independent Engineer.

2 Deviations from the Specifications and Standards

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

S. No.	Clause as per Manual	Manual Provision	Modified Provision
1	2.2	Design Speed as per Table 2.1 is 40-60 Kmph for Mountainous terrain	Ruling Design Speed is 80 Kmph
2	6.2.2 of IRC-92-2017	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	• Built up area – 2.5m Paved Shoulders • Approaches to grade separated structures – 2.5m Paved.	Width of Paved and Earthen Shoulders is as per TCS Drawing attached.
6	2.17	Typical cross-sections	The typical cross sections are not as per manual.

S. No.	Clause as per Manual	Manual Provision	Modified Provision
7	6.2	Surface Drains	RCC drain of 1.2 m width is provisioned along approaches of grade separated structures, extension of slip road, hillside cutting loication 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 MoRT&H circular-RW/NH-24036/27/2010-PPP Dtd. 04-02-2024.
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 entire length on outer side earthen shoulder of each main carriageway where the height is more than 3 m and approaches to bridges & underpasses but excluding stretches covered by bridges & underpasses where concrete barriers shall be provided.
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: 98:2013 and Ministry's circulars dated 26.11.2019, 27.08.2019, 27.12.2016 & 09.11.2015 in consultation with IE.

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

2.5 For specification for landscaping/tree plantation NHAI policy circular no. 7.4.7/2022 dated 12.07.2022, 7.4.8/2022 dated 06.10.2022 & 7.4.16/2024 dated 19.12.2024 will be applicable.

2.6 Concessionaire is encouraged to do value engineering in line with MoRT&H circular dated 30.08.2022 & amendments thereof.

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

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.