Schedules

SCHEDULE - A

(See Clauses 2.1 and 8.1)

SITE OF THE PROJECT

1. The Site

1.1 Single/Intermediate lane 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 Right of Way to the Contractor are specified in the 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 attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2.1 of this Agreement.

1.4 The alignment plans of the Project Highway are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Highways shall be followed by the contractor with minimum FRL as indicated in the alignment plan. The contractor, however, improve/upgrade the Road Profile as indicated in Annexure-III based on site/design requirement.

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

Annexure - I

(Schedule-A)

Site

Note: Through suitable drawings and description in words, the land, buildings, structures and road works comprising the Site shall be specified briefly but precisely in this Annex-I. All the chainages/location referred to in Annex-I to Schedule A shall be existing chainages.

1. Site

The Site of the single/intermediate lane Project Highway comprises the section of National Highway – 223, Karala Village at Km 298.0 to Kalipur Village at Km 330.662 in the Union Territory of Andaman & Nicobar Islands. The land, carriageway and structures comprises the Site are described below.

2. Land

The Site of the Project Highway comprises the land (sum total of land already in possession and land to be possessed) as described below:

Land Details

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
1	298.025	15	15	30	
2	298.100	15	15	30	
3	298.200	15	15	30	
4	298.300	15	15	30	
5	298.400	15	15	30	
6	298.500	15	15	30	
7	298.600	15	15	30	
8	298.700	15	15	30	
9	298.800	15	15	30	
10	298.900	15	15	30	
11	299.000	15	15	30	
12	299.100	15	15	30	
13	299.200	15	15	30	
14	299.300	15	15	30	
15	299.400	15	15	30	
16	299.500	15	15	30	
17	299.600	15	15	30	
18	299.700	15	15	30	
19	299.800	15	15	30	
20	299.900	15	15	30	
21	300.000	15	15	30	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
22	300.100	15	15	30	
23	300.200	15	15	30	
24	300.300	15	15	30	
25	300.400	15	15	30	
26	300.500	15	15	30	
27	300.600	15	15	30	
28	300.700	15	15	30	
29	300.800	15	15	30	
30	300.900	15	15	30	
31	301.000	15	15	30	
32	301.100	15	15	30	
33	301.200	15	15	30	
34	301.300	15	15	30	
35	301.400	15	15	30	
36	301.500	15	15	30	
37	301.600	15	15	30	
38	301.700	15	15	30	
39	301.800	15	15	30	
40	301.900	15	15	30	
41	302.000	15	15	30	
42	302.100	15	15	30	
43	302.200	15	15	30	
44	302.300	15	15	30	
45	302.400	15	15	30	
46	302.500	15	15	30	
47	302.600	15	15	30	
48	302.700	15	15	30	
49	302.800	15	15	30	
50	302.900	15	15	30	
51	303.000	15	15	30	
52	303.100	15	15	30	
53	303.200	15	15	30	
54	303.300	15	15	30	
55	303.400	15	15	30	
56	303.500	15	15	30	
57	303.600	15	15	30	
58	303.700	20	10	30	
59	303.800	15	15	30	
60	303.900	11	19	30	
61	304.000	15	15	30	
62	304.100	15	15	30	
63	304.200	15	15	30	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
64	304.300	13.95	16.05	30	
65	304.400	13.35	16.65	30	
66	304.500	12.75	17.25	30	
67	304.600	12.15	17.85	30	
68	304.700	11.55	18.45	30	
69	304.800	10.95	19.05	30	
70	304.900	10.4	19.6	30	
71	305.000	15	15	30	
72	305.100	15	15	30	
73	305.200	15	15	30	
74	305.300	15	15	30	
75	305.400	15	15	30	
76	305.500	15	15	30	
77	305.600	15	15	30	
78	305.700	15	15	30	
79	305.800	15	15	30	
80	305.900	15	15	30	
81	306.000	15	15	30	
82	306.100	15	15	30	
83	306.200	15	15	30	
84	306.300	15	15	30	
85	306.400	15	15	30	
86	306.500	15	15	30	
87	306.600	15	15	30	
88	306.700	15	15	30	
89	306.800	15	15	30	
90	306.900	15	15	30	
91	307.000	15	15	30	
92	307.100	15	15	30	
93	307.200	15	15	30	
94	307.300	15	15	30	
95	307.400	13.5	16.5	30	
96	307.500	12.9	17.1	30	
97	307.600	12.3	17.7	30	
98	307.700	15	15	30	
99	307.800	15	15	30	
100	307.900	14	16	30	
101	308.000	15	15	30	
102	308.100	15	15	30	
103	308.200	15	15	30	
104	308.300	15	15	30	
105	308.400	15	15	30	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
106	308.500	28.5	1.5	30	
107	308.600	26	4	30	
108	308.700	15	15	30	
109	308.800	15	15	30	
110	308.900	15	15	30	
111	309.000	15	15	30	
112	309.100	15	15	30	
113	309.200	15	15	30	
114	309.300	15	15	30	
115	309.400	15	15	30	
116	309.500	15	15	30	
117	309.600	15	15	30	
118	309.700	15	15	30	
119	309.800	15	15	30	
120	309.900	15	15	30	
121	310.000	15	15	30	
122	310.100	15	15	30	
123	310.200	15	15	30	
124	310.300	15	15	30	
125	310.400	15	15	30	
126	310.500	15	15	30	
127	310.600	15	15	30	
128	310.700	15	15	30	
129	310.800	15	15	30	
130	310.900	15	15	30	
131	311.000	15	15	30	
132	311.100	15	15	30	
133	311.200	15	15	30	
134	311.300	15	15	30	
135	311.400	15	15	30	
136	311.500	15	15	30	
137	311.600	15	15	30	
138	311.700	15	15	30	
139	311.800	15	15	30	
140	311.900	15	15	30	
141	312.000	15	15	30	
142	312.100	8	9	17	
143	312.200	11	10	21	
144	312.300	10	10	20	
145	312.400	10	10	20	
146	312.500	12	13	25	
147	312.600	10	13	23	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
148	312.700	10	12	22	
149	312.800	12	13	25	
150	312.900	17	18	35	
151	313.000	15	15	30	
152	313.100	12	13	25	
153	313.200	12	13	25	
154	313.300	13	14	27	
155	313.400	8	15	23	
156	313.500	15	15	30	
157	313.600	15	15	30	
158	313.700	15	15	30	
159	313.800	15	15	30	
160	313.900	15	15	30	
161	314.000	15	15	30	
162	314.100	15	15	30	
163	314.200	15	15	30	
164	314.300	15	15	30	
165	314.400	15	15	30	
166	314.500	14	14	28	
167	314.600	14	15	29	
168	314.700	13	14	27	
169	314.800	12	13	25	
170	314.900	13	13	26	
171	315.000	12	12	24	
172	315.100	10	10	20	
173	315.200	10	10	20	
174	315.300	9	10	19	
175	315.400	12	13	25	
176	315.500	15	15	30	
177	315.600	20	20	40	
178	315.700	13	13	26	
179	315.800	12	12	24	
180	315.900	12	13	25	
181	316.000	11	11	22	
182	316.100	11	11	22	
183	316.200	11	11	22	
184	316.300	11	11	22	
185	316.400	12	11	23	
186	316.500	10	10	20	
187	316.600	10	10	20	
188	316.700	8	8	16	
189	316.800	9	8	17	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
190	316.900	9	8	17	
191	317.000	10	10	20	
192	317.100	8	9	17	
193	317.200	12	13	25	
194	317.300	11	12	23	
195	317.400	10	10	20	
196	317.500	10	10	20	
197	317.600	9	9	18	
198	317.700	12	12	24	
199	317.800	15	15	30	
200	317.900	14	14	28	
201	318.000	14	14	28	
202	318.100	12	13	25	
203	318.200	12	12	24	
204	318.300	11	11	22	
205	318.400	10	10	20	
206	318.500	10	20	30	
207	318.600	10	20	30	
208	318.700	11	11	22	
209	318.800	8	17	25	
210	318.900	10	17	27	
211	319.000	7	16	23	
212	319.100	8	14	22	
213	319.200	7	12	19	
214	319.700	15	15	30	
215	319.800	15	15	30	
216	319.900	15	15	30	
217	320.000	13	12	25	
218	320.100	15	15	30	
219	320.200	11	11	22	
220	320.300	13	12	25	
221	320.400	8	7	15	
222	320.500	8	7	15	
223	320.600	8	7	15	
224	320.700	8	7	15	
225	320.800	9	9	18	
226	320.900	8	8	16	
227	321.000	8	7	15	
228	321.100	9	8	17	
229	321.200	11	11	22	
230	321.300	7	7	14	
231	321.400	6	5	11	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
232	321.500	8	8	16	
233	321.600	8	7	15	
234	321.700	6	6	12	
235	321.800	5	5	10	
236	321.900	4	5	9	
237	322.000	6	6	12	
238	322.100	6	6	12	
239	322.200	7	7	14	
240	322.300	6	6	12	
241	322.400	6	6	12	
242	322.500	5	6	11	
243	322.600	11	11	22	
244	322.700	7.5	7.5	15	
245	322.800	20	10	30	
246	322.900	6	6	12	
247	323.000	9	9	18	
248	323.100	10	10	20	
249	323.200	15	12	27	
250	323.300	5	6	11	
251	323.400	8	7	15	
252	323.500	13	12	25	
253	323.600	0	4	4	
254	323.700	6	6	12	
255	323.800	8	9	17	
256	323.900	12	12	24	
257	324.000	9	9	18	
258	324.100	7	8	15	
259	324.200	13	10	23	
260	324.300	6	6	12	
261	324.400	8	7	15	
262	324.500	9	8	17	
263	324.600	10	10	20	
264	324.700	8	7	15	
265	324.800	8	7	15	
266	324.900	9	9	18	
267	325.000	7	6	13	
268	325.100	8	7	15	
269	325.200	9	9	18	
270	325.300	10	9	19	
271	325.400	10	11	21	
272	325.500	10	10	20	
273	325.600	10	10	20	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
274	325.700	12	12	24	
275	325.800	10	10	20	
276	325.900	15	15	30	
277	326.000	13	14	27	
278	326.100	12	12	24	
279	326.200	10	13	23	
280	326.300	10	13	23	
281	326.400	10	10	20	
282	326.500	8	8	16	
283	326.600	9	10	19	
284	326.700	10	10	20	
285	326.800	13	13	26	
286	326.900	10	11	21	
287	327.000	11	11	22	
288	327.100	15	13	28	
289	327.200	13	13	26	
290	327.300	13	14	27	
291	327.400	12	11	23	
292	327.500	12	11	23	
293	327.600	12	13	25	
294	327.700	14	14	28	
295	327.800	13	13	26	
296	327.900	15	15	30	
297	328.000	15	15	30	
298	328.100	15	15	30	
299	328.200	11	11	22	
300	328.300	10	10	20	
301	328.750	7	7	14	
302	328.800	7	7	14	
303	328.900	4	4	8	
304	329.000	4	4	8	
305	329.100	4	4	8	
306	329.200	4	4	8	
307	329.300	4	4	8	
308	329.400	4	4	8	
309	329.500	4	4	8	
310	329.600	4	4	8	
311	329.700	4	4	8	
312	329.800	4	4	8	
313	329.900	4	4	8	
314	330.000	4	4	8	
315	330.100	4	4	8	

S.No.	Chainage(km)	Existing ROW			Remark
		Left side (in m)	Right side (in m)	Total (in m)	
316	330.200	4	4	8	
317	330.300	4	4	8	
318	330.400	4	4	8	
319	330.500	4	4	8	
320	330.600	4	4	8	
321	330.650	4	4	8	
Note :- Minimum encumbrances free RoW is 7.5m available all along the road.					

3. Carriageway

The present carriageway of the Project Highway is of Single Lane carriageway flexible pavement having carriageway varying from 3.0m to 3.5m.

4. Major Bridges

The Site includes the following Major Bridges:

S. No.	Existing Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub-Structure	Super-Structure		
NIL						

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

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

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

6. Grade separators

The Site includes the following grade separators:

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

7. Minor Bridges

The Site includes the following minor bridges

S. No.	Existing Chainage (km)	Type of Structure			No. of Spans with span length (c/c of exp gap)	Total Width (m)
		Foundation	Sub-Structure	Super-Structure		
1	298.473	Open	RC WALL	RC SOLID SLAB	2x6.5	8.4
2	310.591	Balley Bridge			27.5+24.4	4.9
3	312.015	Open	RC WALL	RC SOLID SLAB	3x6.1	6.7
4	314.490	Open	RC WALL	RC SOLID SLAB	2x7.0	7.5
5	320.34	Open	RC WALL	RC SOLID SLAB	2x7.2	6.7

8. Railway level crossings

The Site includes the following level crossing:

S. No.	Existing Chainage (km)	Remarks
NIL		

9. Underpasses (Vehicular, Non-Vehicular)

The Site includes the following underpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No.	Existing chainage	Type of structures (Pipe. Slab Box, Arch)	Span Arrangement (No.x Length(m))
1	298.087	RCC SLAB	1X1.8
2	298.205	RCC SLAB	1X1.7
3	298.597	HP	1X1.0
4	298.66	HP	1X0.9

Sl. No.	Existing chainage	Type of structures (Pipe. Slab	Span Arrangement (No.x
5	298.928	HP	1X1.2
6	299.052	HP	1X0.9
7	299.09	HP	1X1.2
8	299.384	HP	2X0.9
9	299.555	HP	2X0.9
10	299.772	HP	2X0.9
11	300.016	HP	2X0.9
12	300.167	RCC SLAB	1X6.0
13	300.435	HP	2x0.9
14	300.595	HP	2X0.9
15	300.795	HP	2X0.9
16	301.231	RCC SLAB	1X2.6
17	301.39	RCC SLAB	1X2.2
18	301.75	RCC SLAB	BLOCKED
19	302.064	RCC SLAB	1X5.7
20	302.212	RCC SLAB	1X2.7
21	302.428	RCC SLAB	1X3.1
22	302.605	RCC SLAB	1X2.3
23	302.917	RCC SLAB	1X4.5
24	303.022	RCC SLAB	1X4.8
25	303.267	HP	1X0.8
26	303.345	RCC SLAB	1X6.0
27	303.65	HP	1X0.90
28	303.762	RCC SLAB	1X1.9
29	304.084	RCC SLAB	1x2.5
30	304.22	RCC SLAB	1x2.5
31	304.595	RCC SLAB	1X3.6
32	304.723	HP	1X0.9
33	304.855	HP	1X0.9
34	305.219	HP	1X0.9
35	305.428	HP	1X0.9
36	305.589	HP	1X0.9
37	305.734	HP	1X0.9
38	306.075	RCC SLAB	1X2.3
39	306.274	RCC SLAB	1X4.7
40	306.913	RCC SLAB	1X4.5
41	307.513	RCC SLAB	BLOCKED
42	307.779	RCC SLAB	1X4.70
43	308.005	RCC SLAB	1X2.4
44	308.256	RCC SLAB	1X1.7
45	308.802	RCC SLAB	1X2.6
46	309.071	RCC SLAB	1X5.5

Sl. No.	Existing chainage	Type of structures (Pipe. Slab	Span Arrangement (No.x
47	309.225	HP	BLOCKED
48	309.315	HP	1 X 0.9
49	309.366	HP	2 X 1.2
50	309.439	HP	2 X 1.2
51	309.637	RCC SLAB	1 X 2.5
52	310.98	RCC SLAB	1X5.9
53	311.715	RCC SLAB	1X2.7
54	312.107	RCC SLAB	1X1.8
55	312.232	RCC SLAB	1X1.3
56	312.314	RCC SLAB	1X1.5
57	312.475	RCC SLAB	1 X 2.1
58	312.608	RCC SLAB	1X2.8
59	313.163	RCC SLAB	1X2.6
60	313.294	RCC SLAB	1X1.2
61	313.323	RCC SLAB	1X1.85
62	313.435	RCC SLAB	1X1.3
63	313.536	RCC SLAB	1X5.4
64	313.857	RCC SLAB	1X1.70
65	314.614	RCC SLAB	1X2.1
66	315.138	RCC SLAB	1X1
67	315.507	RCC SLAB	1X1.2
68	315.601	RCC SLAB	1X2.9
69	315.842	RCC SLAB	1X1.5
70	316.032	RCC SLAB	1X.5
71	316.322	RCC SLAB	1X1.5
72	316.355	RCC SLAB	1X2
73	316.566	HP	1X0.6
74	316.708	RCC SLAB	1X1.5
75	316.767	RCC SLAB	1X0.8
76	316.897	RCC SLAB	1X1.1
77	316.966	RCC SLAB	1X0.8
78	317.104	RCC SLAB	1X0.65
79	317.313	RCC SLAB	1X0.91
80	317.36	RCC SLAB	1X1.7
81	317.684	RCC SLAB	1X0.9
82	317.768	RCC SLAB	1X0.8
83	317.825	RCC SLAB	1X1.1
84	318.035	RCC SLAB	1X1
85	318.234	RCC SLAB	1X1.15
86	318.37	RCC SLAB	1X1.7
87	318.445	RCC SLAB	1X0.8
88	318.543	RCC SLAB	1X0.8

Sl. No.	Existing chainage	Type of structures (Pipe. Slab	Span Arrangement (No.x
89	318.58	RCC SLAB	1X0.83
90	318.717	HP	1X0.9
91	318.943	HP	1X0.6
92	319.153	HP	1X0.9
93	319.334	HP	1X0.6
94	319.46	HP	1X0.6
95	319.571	HP	1X0.6
96	319.651	HP	1X0.9
97	319.767	HP	2X0.6
98	319.915	HP	2X0.9
99	320.036	HP	2X0.9
100	320.571	HP	1X0.9
101	321.187	HP	1X0.6
102	321.308	RCC SLAB	1X1.8
103	321.312	HP	2X0.9
104	321.525	HP	1X0.9
105	321.952	HP	1X0.9
106	321.995	HP	1X0.9
107	322.133	HP	1X0.6
108	322.301	HP	1X0.9
109	322.372	HP	2X0.9
110	322.496	HP	1X1.2
111	322.683	HP	2X0.9
112	323.022	HP	1X0.9
113	323.14	HP	2X1.2
114	323.247	HP	2X0.9
115	323.325	HP	2X0.6
116	323.395	RCC SLAB	1X2.18
117	323.61	HP	1X0.6
118	323.84	HP	1X0.6
119	324.06	HP	1X0.6
120	324.135	HP	1X0.6
121	324.307	RCC SLAB	1X4.1
122	324.412	HP	1X0.6
123	324.525	HP	1X0.6
124	324.675	HP	1X0.6
125	324.739	HP	1X0.6
126	325.131	HP	2 X 0.9
127	325.754	RCC SLAB	1X6
128	326.437	HP	1X1.2
129	326.645	HP	2x1.2
130	326.792	HP	1X1.2

Sl. No.	Existing chainage	Type of structures (Pipe. Slab	Span Arrangement (No.x
131	327.147	HP	1X1.2
132	327.295	RCC SLAB	1X3
133	327.897	RCC SLAB	1X3
134	328.192	RCC SLAB	1X4
135	328.549	RCC SLAB	1X2
136	328.61	RCC SLAB	1X1
137	329.181	RCC SLAB	1X5.8
138	329.276	RCC SLAB	1X1
139	329.511	RCC SLAB	1X1.7
140	329.709	RCC SLAB	1X1.4
141	329.799	RCC SLAB	1X1.2
142	329.849	RCC SLAB	1X2
143	329.963	RCC SLAB	1X1.2
144	330.115	RCC SLAB	1X1.2
145	330.198	RCC SLAB	1X1.2
146	330.319	RCC SLAB	1X1.2
147	330.417	RCC SLAB	1X1.2
148	330.525	RCC SLAB	1X1.2
149	330.663	RCC SLAB	1X1.2

11. Bus bays/Bus Shelters

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

S.No.	Existing Chainage	Side
NIL		

12. Truck Lay byes

The details of truck lay byes are as follows:

S. No.	Existing Chainage (Km)	Length (m)	Left Hand Side	Right Hand Side
NIL				

13. Road side drains

The details of the roadside drains are as follows:

S.No.	Existing Chainage (km)		Side
	From	To	
1	298.631	299.554	Right
2	299.77	299.824	Right
3	300.237	300.256	Right

4	300.256	300.377	Both Side
5	300.377	301.224	Right
6	301.53	302.012	Left
7	302.091	302.116	Right
8	302.215	302.241	Right

S.No.	Existing Chainage (km)		Side
	From	To	
9	302.481	302.894	Right
10	303.044	303.106	Right
11	303.352	303.528	Right
12	303.658	303.758	Right
13	303.853	304.079	Right
14	305.441	305.554	Right
15	306.39	306.411	Right
16	307.417	307.513	Right
17	308.034	308.177	Right
18	309.25	309.488	Right
19	309.488	309.697	Both Side
20	309.697	309.712	Right
21	310.62	310.764	Right
22	310.99	311.091	Right
23	312.107	312.45	Right
24	312.681	312.819	Right
25	313.044	313.135	Right
26	313.201	313.325	Right
27	313.325	313.36	Both Side
28	313.36	313.492	Right
29	315.203	315.445	Both Side
30	315.445	315.507	Left

14. Major junctions

The details of major junctions are as follows:

S.No	Existing Chainage (km)	At Grade	Grade Separated	Category of Cross Road+			
				NH	SH	MDR	Others
1	309.875	At Grade	-	-	-	MDR-Y	-

+ NH= National Highway, SH= State Highway, MDR= Major District Road.

15. Minor junctions

The details of the minor junctions are as follows:

S. No	Existing Chainage (km)	Village Name	Side	Type of Junction
S. No	**Existing Chainage (km)**	**Village Name**	**Side**	**Type of Junction**
1	304.127	TO SCHOOL	RIGHT	T
2	304.965	TO VILLAGE	LEFT	T
3	305.202	TO SITANAGAR	RIGHT	Y
4	305.575	TO VILLAGE	LEFT	y
5	306.416	TO MORDEN TIKRI	RIGHT	T
6	307.406	TO SITANAGAR VILLAGE	LEFT	Y
7	307.483	TO SITANAGAR VILLAGE	RIGHT	Y
8	307.802	TO SITANAGAR VILLAGE	RIGHT	T
9	308.958	TO SUBHAS GRAM	RIGHT	T
10	309.346	TO SUBHAS GRAM	LEFT	Y
11	309.719	TO KUDHIRAMPUR	RIGHT	Y
12	309.875	TO RADHANAGAR	LEFT	Y
13	309.878	TO GOVT.PRIMARY SCHOOL	RIGHT	Y
14	310.175	TO KALIPUR	RIGHT	Y
15	310.346	TO DIGLIPUR MARKET	RIGHT	T
16	310.775	TO DIGLIPUR MARKET	RIGHT	Y
17	311.094	TO R.K VILLAGE	RIGHT	Y
18	311.934	TO MADHUPUR	LEFT	Y
19	312.050	TO R.K VILLAGE	RIGHT	Y
20	312.478	TO R.K VILLAGE	RIGHT	T
21	312.492	TO R.K VILLAGE	RIGHT	T
22	312.677	TO PANCHABOTI	RIGHT	Y
23	313.23	TO VILLAGE	LEFT	Y
24	313.840	TO V.S PALLY	LEFT	Y
25	313.938	TO VILLAGE	RIGHT	Y
26	314.473	TO V.S PALLY(2)	RIGHT	T
27	314.475	TO V.S PALLY(3)	LEFT	Y
28	314.723	TO KARALAPURAM	LEFT	T
29	315.021	TO KARALAPURAM	RIGHT	T
30	315.025	TO KARALAPURAM	LEFT	T
31	315.369	TO KARALAPURAM	RIGHT	Y
32	316.266	TO KARALAPURAM	LEFT	T
33	318.059	TO ARIAL BAY	RIGHT	Y

34	318.2	TO A.B.W.D STORE	RIGHT	Y
35	318.338	TO VILLAGE	RIGHT	T

S. No	Existing Chainage (km)	Village Name	Side	Type of Junction
36	318.515	TO PANCHYAT	RIGHT	T
37	320.159	TO VILLAGE	RIGHT	Y
38	320.325	TO FISHER COLONY	LEFT	Y
39	320.615	TO FISHER COLONY	RIGHT	T
40	320.615	TO DURGAPUR VILLAGE	LEFT	T
41	321.218	TO DURGAPUR VILLAGE	LEFT	Y
42	321.35	TO DURGAPUR VILLAGE	RIGHT	T
43	324.321	TO VILLAGE	LEFT	Y
44	325.087	TO GOVT. SECONDARY SCHOOL	RIGHT	Y
45	326.2	TO SHIVPUR SCHOOL	RIGHT	Y
46	326.298	TO NAVAL AIR STATION	LEFT	Y
47	326.53	TO SHIVPUR VILLAGE	LEFT	Y
48	327.125	TO TURTLE NESTING SITE	LEFT	Y
49	327.888	TO KALIPUR VILLAGE	RIGHT	Y
50	328.418	TO KALIPUR VILLAGE	RIGHT	Y
51	328.59	TO VILLAGE	RIGHT	T
52	328.666	TO VILLAGE	LEFT	T

16. Bypasses

The details of the existing road sections proposed to be bypasses are as follows:

S. No	Name of bypass (Town)	Existing Chainage (Km)		Length (Km)
		From	To	
NIL				

17. Other Structures : Following are the details of existing causeways:

S. No	Existing Chainage (km)	Structure Type	Openings / Spans X Length	Width (m)
NIL				

Annex - II

(Schedule-A)

Dates for providing Right of Way

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

S. No.	Design Chainage (Km)		Design Length (Km)	Width (In Meter)	Dates of Providing ROW
	From	To			
1	2	3	4	5	6
	Part Right of Way				
	Width of Land as per Clause 2 of Annexure-I of Schedule A				On Appointed Date

Annex-III

(Schedule-A)

Alignment Plans

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

The alignment plan of the Project Highway is available on E-Portal and in digital form in CD

Annex - IV

(Schedule-A)

Environment Clearances

Not Applicable for this section.

SCHEDULE - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. Rehabilitation and Upgradation

Rehabilitation and Upgradation shall include Intermediate lane with Hard shoulder from Ch 298+0 to 330+357 of the Project Highway as described in Annex-I of this Schedule-B and in Schedule-C.

3. Specifications and Standards

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

Annex - I

(Schedule-B)

Description of Two-Laning

Project Description:-

Rehabilitation and Upgradation of NH-4 (Old NH-223) popularly known as Andaman Trunk Road (ATR) has been entrusted to NHIDCL for the entire stretch of 330.7 Km distributed in South Andaman and North & Middle Andaman. In North Andaman the stretch from Km 242.00 (panighat) to Km 298.00 (Karala junction) (Excluding Km 21 to Km 28) is being upgraded to two lanes. The rehabilitation and Upgradation of the most important stretch i.e from Km 298.00 (karala junction) to km 330.662 (kalipur) is proposed by upgrading to 5.5 m and 0.5m hard shoulder on both sides. The road is to be constructed on the existing alignment only. There is no realignment.

1. WIDENING OF THE EXISTING HIGHWAY

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

1.2 WIDTH OF CARRIAGEWAY

1.2.1 Intermediate-Lane with hard shoulders in rural section and intermediate lane with drain covered foothpath from Ch 298+0 to 330+357 shall be undertaken. The carriageway shall be 5.5m wide in rural and urban section conformation with the typical cross sections drawings in the Manual.

Provided that in the built-up areas the width of the carriageway shall be as specified in the following table:

S.No.	Built up Stretch (Township)	Design Chainage (Km)		Length (km)	Typical Cross Section Proposed
		From	To		
1	Sita Nagar Village, Diglipur Market	308.900	311.000	2100	TCS II
2	R.K Village, V.S Pally	312.000	313.800	1800	TCS II

3	Karala Puram Village	314.900	315.874	974	TCS II

1.2.2 Except as otherwise provided in this Agreement, the width of the paved carriageway and cross-sectional features shall conform to paragraph 1.2.1 above

2. GEOMETRIC DESIGN AND GENERAL FEATURES

2.1 General

Geometric design and general features of the Project Highway shall be in accordance with section 2 of the manual.

2.2 Design Speed

The design speed shall in accordance with section 2 of the manual.

2.3 Improvement of the existing road geometry

In the following sections, where improvement of the existing road geometrics to the prescribed standards is not possible within existing ROW, the existing road geometrics shall be improved to the extent possible within the given right of way and proper road signs and safety measures shall be provided:

Deficient Curves:-

S.No	Design Chainage (km)	Radius (m)
1	298+052	40
2	298+724	70
3	299+491	40
4	300+106	65
5	300+457	50
6	300+877	65
7	300+999	60
8	301+876	60
9	303+836	50
10	303+910	60
11	307+373	60
12	307+671	50
13	308+163	70
14	310+364	60
15	310+582	60
16	310+684	50
17	312+165	70

S.No	Design Chainage (km)	Radius (m)
18	312+356	60
19	312+958	70
20	313+186	50
21	316+664	70
22	317+086	50
23	317+386	50
24	317+772	50
25	318+032	50
26	318+540	45
27	318+722	40
28	319+228	50
29	319+793	60
30	320+025	40
31	321+483	45
32	321+564	35

Bypasses

S. No	DesignChainage (Km)		Length (Km)	Name of village	Remarks
	From	To			
NIL					

2.4 Right of Way

The Site of the Project Highway comprises the land as described in Annexure-I of Schedule-A.

2.5 Type of Shoulders

Paved shoulder in built up area and Hard shoulder with CTSB (cementations treated sub base) in other areas for impervious quality.

2.6

a) In built up section, footpath over drain shall be provided in the following stretches:

S.No.	Built up Stretch (Township)	Design Chainage (Km)		Typical Cross Section Proposed
		From	To	
1	Sita Nagar Village, Diglipur Market	308.900	311.000	TCS II
2	R.K Village, V.S Pally	312.000	313.800	TCS II

3	Karala Puram Village	314.900	315.874	TCS II

b) Design and specification of paved shoulder and granular material shall confirm to the requirements specified in paragraph 5.9.9 and 5.9.10 of the Manual.

c) In built up area full road width to be paved whereas in other area hard shoulder of 0.5m either side with CTSB is to be done.

2.7 Lateral and vertical clearances at underpasses

2.7.1 Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per paragraph 2.11 of the Manual.

2.7.2 Lateral clearance: The width of the opening at the underpasses shall be as follows:

S. No.	Design Chainage (Km)	Span/opening (m)	Remarks
NIL			

2.8 Lateral and vertical clearances at overpasses

2.8.1 Lateral and vertical clearances at overpasses and provision of guardrails/crash barriers shall be as per paragraph 2.12 of the Manual.

2.8.2 Lateral clearance: The width of the opening at the overpasses shall be as follows:

S. No.	Design Chainage (Km)	Span/opening (m)	Remarks
NIL			

2.9 Service roads

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

S. No	Design Chainage (Km)	RHS/LHS	Length of the Service Road (m)
NIL			

2.10 Grade separated structures

2.10.1 Grade separated structures shall be provided as per paragraph 2.14 of the Manual. The requisite particulars are given below:

S. No.	Design Chainage (Km)	Length (m)	Number and length of spans	Approach gradient	Remarks, if any
NIL					

2.10.2 In the case of grade separated structures, the type of structure and the level of the Project Highway and the cross roads shall be as follows:

S. No.	Design Chainage (Km)	Type of structure Length (m)	Cross road at		
			Existing level	Raised Level	Lowered Level
NIL					

2.11 Cattle and pedestrian under pass / over pass

Cattle and pedestrian underpass shall be constructed as follows:

S. No.	Design Chainage (Km)	Type of Crossing
NIL		

2.12 Typical cross-sections of the Project Highway

Indicative typical cross sections along with different types of cross-sections required to be developed in different segments of the project highway are indicated in Appendix B-I. Cross Section schedule for the project highway is as follows:

S. No.	Design Chainage		Length (m)	Widening Proposal	TCS Proposed
	From	To			
1	298+000	298+400	400	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
2	298+400	298+820	420	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
3	298+820	299+280	460	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
4	299+280	299+380	100	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
5	299+380	299+800	420	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
6	299+800	299+920	120	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
7	299+920	300+020	100	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
8	300+020	300+400	380	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
9	300+400	300+960	560	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
10	300+960	301+460	500	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*

S. No.	Design Chainage		Length (m)	Widening Proposal	TCS Proposed
	From	To			
11	301+460	301+800	340	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
12	301+800	302+100	300	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
13	302+100	307+370	5270	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
14	307+370	308+127	757	Rehabilitation to IL in Urban section with Covered Drain on both sides (Plain terrain)	TCS II
15	308+127	309+370	1243	Overlaying of existing carriageway + covered RCC drain on both sides in Urban area	TCS IV
16	309+370	314+280	4910	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
17	314+280	316+800	2520	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
18	316+800	317+700	900	Rehabilitation to IL in Urban section with Covered Drain on both sides (Plain terrain)	TCS II
19	317+700	318+900	1200	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
20	318+900	319+900	1000	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
21	319+900	323+600	3700	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*
22	323+600	324+700	1100	Rehabilitation to IL in Rural section (Plain terrain)	TCS I
23	324+700	330+357	5657	Rehabilitation to IL in Rural section (Rolling & Hilly terrain)	TCS III*

[Typical Cross Sections are appended separately]* Retaining wall and Breast wall shown in TCS III drawing is typical. Location of these components should be applied as per site condition.

****** TCS V is proposed for cutting in rural section and drawing shown for the same is typical. Where ever required the breast wall must be provided, if there is cutting in hill.

*** TCS IV is proposed for filling in rural section and drawing shown for the same is typical. Whereever required the retaining wall must be provided, to confine the toe within ROW.

**** TCS VI is proposed only for existing 2-lane/4-lane section with covered drain on both sides in urban areas.

3. INTERSECTIONS AND GRADE SEPARATORS

All intersections and grade separators shall be as per section 3 of the Manual. Existing intersections which are deficient shall be improved to the prescribed standards within the available road width only. Junction road to be developed upto 50 m length only.

.

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

a) At-grade intersections (Major Junctions)

S. No.	Design Chainage (Km)	Type of Intersection	Side	Remarks
1	309+752	Y	Left	

b) At-grade intersections (Minor Junctions)

Sl. No	Design Chainage	Type of Intersection
1	304+021	T
2	304+858	T
3	305+089	Y
4	305+462	y
5	306+316	T
6	307+279	Y
7	307+358	Y
8	307+674	T
9	308+854	T
10	309+231	Y
11	309+608	Y
12	309+759	Y
13	309+764	Y
14	310+059	Y
15	310+233	T
16	310+671	Y
17	310+977	Y
18	311+820	Y
19	311+935	Y

Sl. No	Design Chainage	Type of Intersection
20	312+362	T
21	312+376	T
22	312+561	Y
23	313+112	Y
24	313+719	Y
25	313+817	Y
26	314+352	T
27	314+354	Y
28	314+602	T
29	314+892	T
30	314+896	T
31	315+368	Y
32	316+141	T
33	317+925	Y
34	318+069	Y
35	318+200	T
36	318+374	T
37	320+020	Y
38	320+186	Y
39	320+476	T
40	320+477	T
41	320+853	Y
42	320+985	T
43	324+968	Y
44	324+780	Y
45	325+894	Y
46	325+993	Y
47	326+224	Y
48	326+819	Y
49	327+583	Y
50	328+087	Y
51	328+286	T
52	328+361	T

c) Grade separated intersection without ramps

S. No.	Design Chainage (Km)	Salient features	Minimum length of viaduct to be provided	Road to be carried over/under the structures
NIL				

4. ROAD EMBANKMENT AND CUT SECTION

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

4.2 Raising of the existing road

The existing road shall be raised at the required locations as per proposed plan and profile including the following sections:

S. No	Design Chainage (Km)		Length (Km)	Extent of raising (Top of finished road level)
	From	To		
NIL				

5. PAVEMENT DESIGN

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

5.2 Type of pavement

Flexible Pavement from Ch 298+000 to 330+662 will be designed as per Clause 10.4(Treated RAP) of IRC:37-2012 along with soil stabilization.

5.3 Design Requirements

Design requirement for the flexible pavement shall be in accordance with section 5 of the IRC:SP-73-2015 and IRC:37-2012. Treated RAP and CT Subbase shall be provided as per the provisions of IRC:37-2012 from Ch 298+000 to 330+357.

5.3.1 Design Period and strategy

Flexible pavement for new pavement or for widening and strengthening of the existing pavement shall be designed for a minimum design period of ***15 years***. Stage construction shall not be permitted.

5.3.2 Design Traffic

Not with standing anything to the contrary contained in this Agreement or the Manual, the Contractor shall design the pavement for design traffic as given below.

S. No.	Design Chainage (Km)		Minimum Design MSA for 15 yeras
	From	To	
1	298+000	330+357	10

5.4 Reconstruction of stretches

Reconstruction of stretches for matching the proposed plan & profile shall be taken up as per actual requirements.

S. No	Design Chainage (Km)		Remarks
	From	To	
1	298+000	330+357	Reconstruction with Treated RAP & CT subbase

5.5 Maintenance before Construction:-

A Provision of 20 mm of premix carpet with seal coat to maintain the trafficability of the road before construction. The contractor shall maintain the road in the best possible manner to provide smooth trafficability. The Premix carpet with seal coat to be used only on those places which shall be taken up for the construction after a period of minimum 2 months. However the provisions are optional and the execution of the same shall be determined as per the site condition in consultation with the Authority's Engineer. The contractor has to maintain the road in accordance with Clause 10.4.1 of the Draft Contract Agreement as pot hole free road only during construction.

Note: - Method for flexible pavement designing has been extracted from Plate 17 with 3% CBR value and 10 Msa of Fig 10.4 of IRC: 37 – 2012 with BC of 40mm. However the designs are indicative only and the contractor can submit the design as per the requirement. In all cases 40mm BC is mandatory requirement

6. ROADSIDE DRAINAGE

Drainage system including surface and subsurface drains for the Project Highway shall be provided as per Section 6 of the Manual.

Unlined drain has been provided in complete stretch except at locations of breast wall, retaining walls and urban stretches. A minimum length of 54506m has to be constructed.

Lined Drain of Random Rubble Masonary has been provided in hilly sections at the locations of Breast wall and in urban stretches. Minimum length of 4720m has to be constructed.

Lined RCC Open Drains:- Providing covered RCC drain in urban areas excluding excavation as per drawing and technical specifications section 1500,1600,1700. A minimum length of 2000m has to be constructed.

7. DESIGN OF STRUCTURES

7.1 General

7.1.1 All bridges, culverts and structures shall be designed 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 Width of the carriageway of new structures of more than 60m length shall be as follows, if the carriageway width is different from 7.5m in the table below.

S.No	Design Chainage (Km)	Width of Carriageway (m) and cross sectional features
NIL		

7.1.3 The following structures shall be provided with footpaths:

S. No.	Design Chainage (Km)	Remarks
NIL		

7.1.4 All bridges shall be high-level bridges. **No**

7.1.5 The following structures shall be designed to carry utility services specified in table below.

S. No.	Design Chainage (Km)	Utility service to be carried	Remarks
NIL			

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 for the Project Highway.

7.2 Culverts

7.2.1 The Culverts overall width shall be equal to the roadway width of the approaches.

7.2.2 ***Reconstruction of existing culverts***:

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

S. No	Design Chainage (Km)	Type of culvert proposed	Span/ Opening with Span length (m)*	Deck Width
1	298+595	RCC Box	1x3.0	7.5
2	298+658	RCC Box	1X4.0	7.5
3	298+925	RCC Box	1x3.0	7.5
4	298+991	RCC Box	1X4.0	7.5
5	299+028	RCC Box	1x3.0	7.5
6	299+324	RCC Box	1x3.0	7.5
7	299+491	RCC Box	1x4.0	7.5
8	299+707	RCC Box	1x3.0	7.5
9	299+943	RCC Box	1x3.0	7.5
10	300+358	RCC Box	1x3.0	7.5
11	300+516	RCC Box	1x3.0	7.5
12	300+717	RCC Box	1X4.0	7.5

S. No	Design Chainage (Km)	Type of culvert proposed	Span/ Opening with Span length (m)*	Deck Width
13	301+684	RCC Box	1x4.0	7.5
14	303+181	RCC Box	1X4.0	7.5
15	303+564	RCC Box	1X3.0	7.5
16	304+616	RCC Box	1x2.0	7.5
17	304+743	RCC Box	1x2.0	7.5
18	305+106	RCC Box	1x2.0	7.5
19	305+316	RCC Box	1x2.0	7.5
20	305+477	RCC Box	1x2.0	7.5
21	305+621	RCC Box	1x2.0	7.5
22	307+387	RCC Box	1x4.0	7.5
23	309+108	RCC Box	1x2.0	7.5
24	309+323	RCC Box	1x2.0	7.5
25	309+251	RCC Box	1x3.0	7.5
26	309+323	RCC Box	1x3.0	7.5
27	309+520	RCC Box	1x2.5	7.5
28	312+117	RCC Box	1x3.0	7.5

*Note- height of opening shall be kept according to adjoining TCS.

7.2.3 Widening of Existing Culverts

All existing culverts, which are not to be reconstructed, shall be widened up to the roadway width of the Project Highway & as per the typical cross section given in the Manual and the existing width portion of culverts shall be repaired as per site requirements.

S. No	Design Chainage (Km)	Structure Type	Openings / Spans x Length	Width of existing culvert (m)	Remark
NIL					

7.2.4 Additional new culverts (given in table below) shall be constructed for width equal to the roadway width of the Project Highway & as per typical cross-section given in the manual:

S. No.	Design Chainage (Km)	Proposed type	No. of Spans X span length (m)
NIL			

7.2.5 Repairs/replacements of railing/parapets, flooring and protection works of the existing culverts shall be undertaken as required as follows:

S. No.	Design Chainage (Km)	Type of repair required
1	298+085	**Painting , pointing, repair of railings/parapets and protection works.**
2	298+203	
3	300+090	
4	301+167	
5	301+326	
6	302+024	
7	302+126	
8	302+336	
9	302+506	
10	302+826	
11	302+910	
12	303+259	
13	303+675	
14	303+977	
15	304+113	
16	304+487	
17	305+974	
18	306+178	
19	306+811	
20	307+654	
21	307+888	
22	308+141	
23	308+700	
24	308+957	
25	310+864	
26	311+600	
27	311+992	
28	312+199	
29	312+357	
30	312+494	
31	313+044	
32	313+171	
33	313+202	
34	313+315	
S. No.	**Design Chainage (Km)**	
35	313+416	
36	313+737	
37	314+443	
38	315+009	
39	315+378	
40	315+471	
41	315+713	
42	315+905	

43	316+194	**Painting , pointing, repair of railings/parapets and protection works.**
44	316+229	
45	316+440	
46	316+582	
47	316+641	
48	316+772	
49	316+838	
50	316+960	
51	317+169	
52	317+217	
53	317+540	
54	317+624	
55	317+681	
56	317+897	
57	318+096	
58	318+233	
59	318+305	
60	318+404	
61	318+441	
62	318+578	
63	318+806	
64	319+012	
65	319+195	
66	319+277	
67	319+433	
68	319+512	
69	319+628	
70	319+777	
71	319+898	
72	320+432	
73	320+823	
74	320+943	
75	320+947	
76	321+160	
77	321+614	
78	321+569	
S. No.	**Design Chainage (Km)**	
79	321+776	
80	321+944	
81	322+017	
82	322+142	
83	322+327	
84	322+669	
85	322+786	
86	322+894	
87	322+972	

88	323+044	**Painting , pointing, repair of railings/parapets and protection works.**
89	323+357	
90	323+485	
91	323+693	
92	323+781	
93	323+956	
94	324+061	
95	324+173	
96	324+324	
97	324+387	
98	324+774	
99	325+450	
100	326+131	
101	326+339	
102	326+486	
103	326+842	
104	326+990	
105	327+591	
106	328+887	
107	328+244	
108	328+305	
109	328+874	
110	328+971	
111	329+206	
112	329+404	
113	329+494	
114	329+546	
115	329+658	
116	329+810	
117	329+893	
118	330+013	
119	330+112	
120	330+221	
121	330+359	

7.2.6 Floor protection works shall be as specified in the relevant IRC Codes and Specifications

7.2.6.1 Provision in Schedule H has been kept for repair of all existing culverts other than reconstruction shall be done including cleaning, maintenance, pointing, painting etc in all respect.

7.3 Bridges

7.3.1 Existing bridges to be re-constructed/widened:

(i) The Existing bridges at the following locations shall be reconstructed:

S. No	Bridge Location (Design Chainage, in Km)	Salient Features of Existing Bridge		Features of Proposed Bridge	
		No. of Spans with Span Length (c/c of exp. Gap)	Total Width (m)	Proposed Length (m)	Total proposed Width
1	310+476	27.5 + 24.4	4.9	56.600	8.5

NOTE: GAD is given in CD

(ii) The following narrow bridges shall be widened:

S. No.	Design Chainage (Km)	Width (m)	Extent* of Widening	Span Arrangement (m)	Type of Structure			Cross Section at Deck Level for widening
					Foundation	Sub-Structure	Super-Structure	
NIL								

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.

S. No.	Bridge Location (Design Chainage, in Km)	Total Length (m)	Remarks
NIL			

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

S. No.	Design Chainage (Km)	Total length (m)	Remarks
NIL			

7.3.4 Drainage system for bridge deck

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

7.3.5 Structures in marine environment

The Project Alignment does not lie in Marine Alignment.

7.3.6 Provision in Schedule H has been kept for repair of all existing minor bridges otherthan reconstruction shall be done including cleaning, maintenance, pointing, painting etc in all respect.

7.4 Rail-road bridges

7.4.1 Design, construction and detailing of ROB/RUB shall be as specified in the Manual. The Width of proposed ROB shall be as specified in Schedule D.

7.4.2 Road over-bridges

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

S. No	Proposed Structure	Existing Chainage	Design Chainage	Name of Crossing	Proposed structural configuration	Proposed Super Structure	Proposed span arrangement (m)	Total Width of Structure
NIL								

7.4.3 Road under-bridges

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

S. No	Design Chainage (Km)	Number and length of span (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 and 3 of this Annex-I.

7.6 Repairs and strengthening of bridges and structures

The existing bridges and structures to be repaired / strengthened as required, and the nature and extent of repairs /strengthening required are given below:

A. Bridges

S. No.	Design Chainage (Km)	Nature and extent of repairs /strengthening to be carried out
1	298+471	Minor repair works (Cleaning, Shotcreting, Painting, Pointing, Replacement of railing with Crash Barrier, repair of Expansion joints & bearings, replacement of wearing coat, etc.)
2	311+900	
3	314+370	

B. ROB / RUB

S. No.	Design Chainage (Km)	Nature and extent of repairs /strengthening to be carried out
NIL		

C. Overpasses/Underpasses and other structures

S. No.	Design Chainage (Km)	Nature and extent of repairs /strengthening to be carried out
NIL		

7.7 List of Major Bridges and Structures

The following is the list of the Major Bridges and Structures:

S. No.	Type of Structure	Design Chainage (Km)	Remark
NIL			

Note: - *1. The location and vent size of all the culverts proposed for irrigation purposes shall be decided in consultation with irrigation authority/ independent engineer.*

2. Width of culvert shall be reconciled as per cross section at that location

3. Cross road culvert to be provided at the location of Major Junction/ Minor Junctions or utility purposes etc. shall be decided with independent Engineer shall not be treated as change of scope.

8. TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORK.

8.1 Traffic control devices and road safety works shall be provided in accordance with Section 9 of the IRC:SP:73-2015.

8.2 Specifications of the reflective sheeting shall be as per the Manual of Specifications (IRC:SP:73-2015).

9. ROAD SIDE FURNITURE

9.1 Road side furniture shall be provided in accordance with the provisions of Section 11 of the IRC:SP:73-2015.

a) Road boundary stones for the entire project highway.
b) Pedestrian guard rails: At each bus stop location.
c) Delineators: For the entire project highway at the locations as suggested in schedule D.

9.2 Overhead traffic signs: location and size

a) Full width overhead signs: 2 Nos.

b) Cantilever overhead signs: Nil

c) Overhead Traffic Signs (locations & Size) shall conform to the Manual of Specifications (IRC:SP:73-2015).

10. COMPULSORY AFFORESTATION

Not Required

11. HAZARDOUS LOCATIONS

The road side safety/Crash barriers shall be provided at following locations for minimum length as per the Manual of Specifications (IRC:SP:73-2015). However, the actual length shall be identified as per requirement of clause 9.4 of IRC:SP:73-2015 in consultation with Authority Engineer. Any increase or decrease in length as specified shall not be treated as change of scope. Metal beam has been provided at curve locations where radius is less than or equal to 50m. At every location it has been provided in the length of 150m on both sides. Locations of metal beam crash barrier are as tabulated below:

S.No	Design Chainage	Unit	Length
1	298+051	Rm	300
2	299+491	Rm	300
3	300+457	Rm	300
4	303+835	Rm	300
5	307+670	Rm	300
6	310+683	Rm	300
7	313+186	Rm	300
8	317+085	Rm	300
9	317+385	Rm	300
10	317+772	Rm	300
11	318+032	Rm	300
12	318+539	Rm	300
13	318+722	Rm	300
14	319+227	Rm	300
15	320+025	Rm	300
16	321+482	Rm	300
17	321+563	Rm	300
Total			**5100**

12. SPECIAL REQUIREMENTS FOR HILL ROAD

In accordance with the section 13 of the manual (IRC: SP 73:2015 & IRC: SP 48:1998) and recommended practices for the treatment of embankment and road side slopes erosion control (First Revision), IRC: 56-2011 and relevant IRC.

12.1 Slope Protection

As the project involves cutting of existing hill slope, it is imperative that slope are stabilized for ensuring longevity of the slope and the road. Slope stability, erosion control and landslide correction shall be accomplished in accordance with IRC: SP: 48-1998, IRC SP: 116-2018 and IRC SP: 23-2014. Reference may be drawn from IRC: 56-2011.

(i) The Minimum Quantity of Protection work may be taken as below:-

Type of Protection Work	**Unit**	**Quantity**
Breast wall	Rm	720
Retaining wall	Rm	740

a) Passing Places

50 no's of passing places has been provided in staggered manner along the alignment so as to avoid any hindrance in the movement of vehicles as in this package only intermediate lane has been proposed. The Contractor in consultation with Authority's Engineer shall finalize the locations of these passing places.

Sl. No.	**Chainage**	**Side**	**Sl. No.**	**Chainage**	**Side**
1	298+300	LHS	26	310+800	RHS
2	298+800	RHS	27	311+300	LHS
3	299+300	LHS	28	311+800	RHS
4	299+800	RHS	29	312+300	LHS
5	300+300	LHS	30	312+800	RHS
6	300+800	RHS	31	313+300	LHS
7	301+300	LHS	32	313+800	RHS
8	301+800	RHS	33	314+300	LHS
9	302+300	LHS	34	314+800	RHS
10	302+800	RHS	35	315+300	LHS
11	303+300	LHS	36	315+800	RHS
12	303+800	RHS	37	322+600	LHS
13	304+300	LHS	38	322+460	RHS
14	304+800	RHS	39	322+800	LHS
15	305+300	LHS	40	323+100	RHS
16	305+800	RHS	41	323+550	LHS
17	306+300	LHS	42	323+900	RHS
18	306+800	RHS	43	324+300	LHS
19	307+300	LHS	44	324+770	RHS
20	307+800	RHS	45	325+400	LHS
21	308+300	LHS	46	326+000	RHS

Sl. No.	Chainage	Side	Sl. No.	Chainage	Side
22	308+800	RHS	47	326+500	LHS
23	309+300	LHS	48	327+000	RHS
24	309+800	RHS	49	327+500	LHS
25	310+300	LHS	50	328+000	RHS

b) Breast Wall / Retaining Wall

Breast Wall have been proposed along the roadway edge on the hilly side of the section of project road where cutting is required or cutting is more than available ROW. In hilly sections, breast Wall of PCC M-15 shall be provided.

Breast wall and Retaining wall shall be provided as specified in table below & in accordance with the Manual of Specifications and Standards as referred in Schedule-D.

Breast Wall locations

S.No	Design Chainage		Side	Length (m)
	From	To		
1	298+520	298+560	Both	80
2	299+880	299+900	Both	40
3	300+120	300+300	Both	360
4	300+980	301+080	Both	200
5	308+380	308+420	Left	40
Total length (m)				720

Retaining wall shall be proposed to be installed in sections of the project road having filling embankment height > 3m or toe of the filling section is beyond available ROW to confine it within ROW. Retaining wall of Random Rubble Masonary shall be provided.

Retaining Wall locations

S.No	Design Chainage		Side	Length (m)
	From	To		
1	298+420	298+460	Both	80
2	298+640	298+820	Right	180
3	299+300	299+320	Both	40
4	300+040	300+120	Both	160
5	301+260	301+320	Both	120
6	301+940	301+980	Both	80
7	310+460	310+480	Both	40
8	311+880	311+900	Both	40
Total length (m)				740

Note – The Contractor shall be responsible for accurate assessment of the actual requirement as per site situation & prepared design for slope protection & stabilization as per the specification & standard stipulated in schedule 'D' and submit the same to the AE for review through the proof consultant and implement it accordance thereafter.

Any Increase in quantity over and above the tentative quantity as mentioned in the above table or through change in specification will not be considered as change of scope. Therefore contractor shall make 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.

12.2 ROAD LAND BOUNDARY (Clause 12.2 IRC SP: 73: 2015)

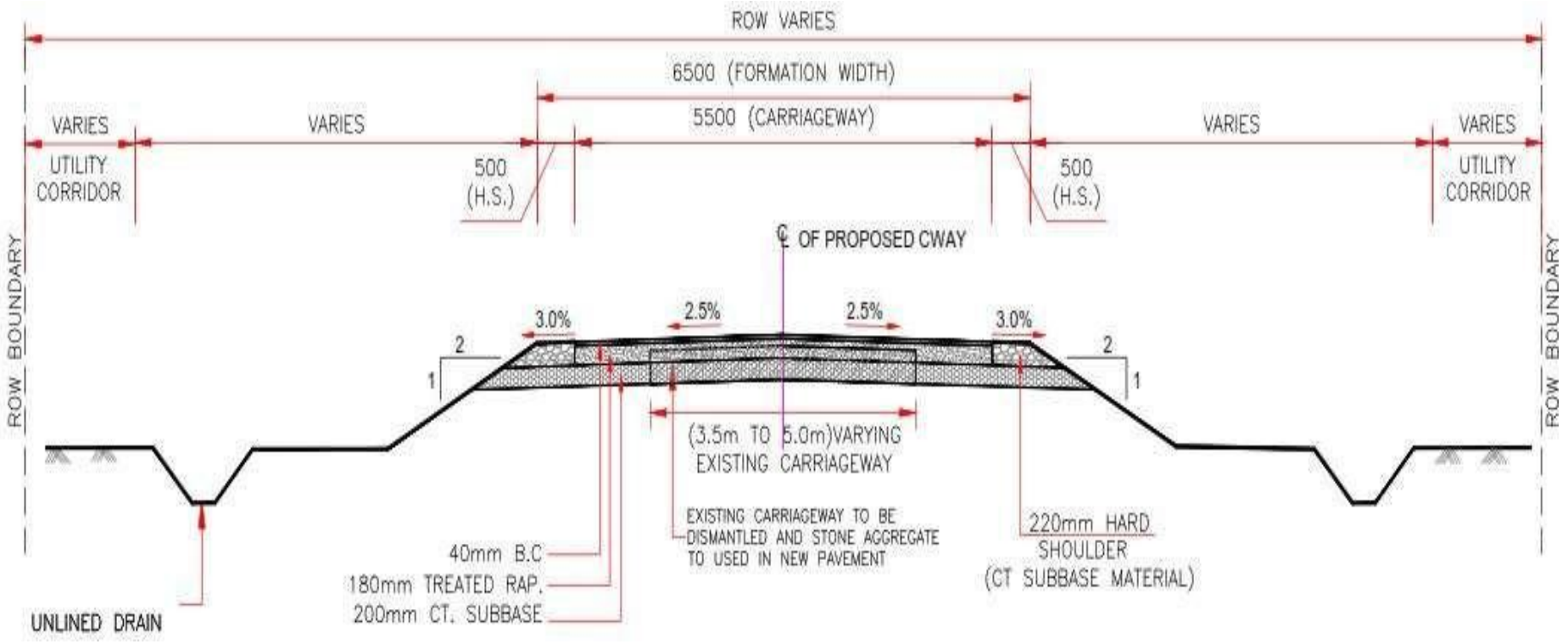
Road land (ROW) boundary shall be demarcated by putting RCC boundary pillars of size 60cm x 15cm x 15cm embedded in concrete (as per IRC:25) along the Project highways at 200 m interval on both side. All the components used in delineating road land boundary shall be aesthetically pleasing, sturdy and vandal proof. The road land boundary shall be demarcated in consultation with NHIDCL.

12.3 Disposal of Debris – As per Manual

13. CHANGE OF SCOPE

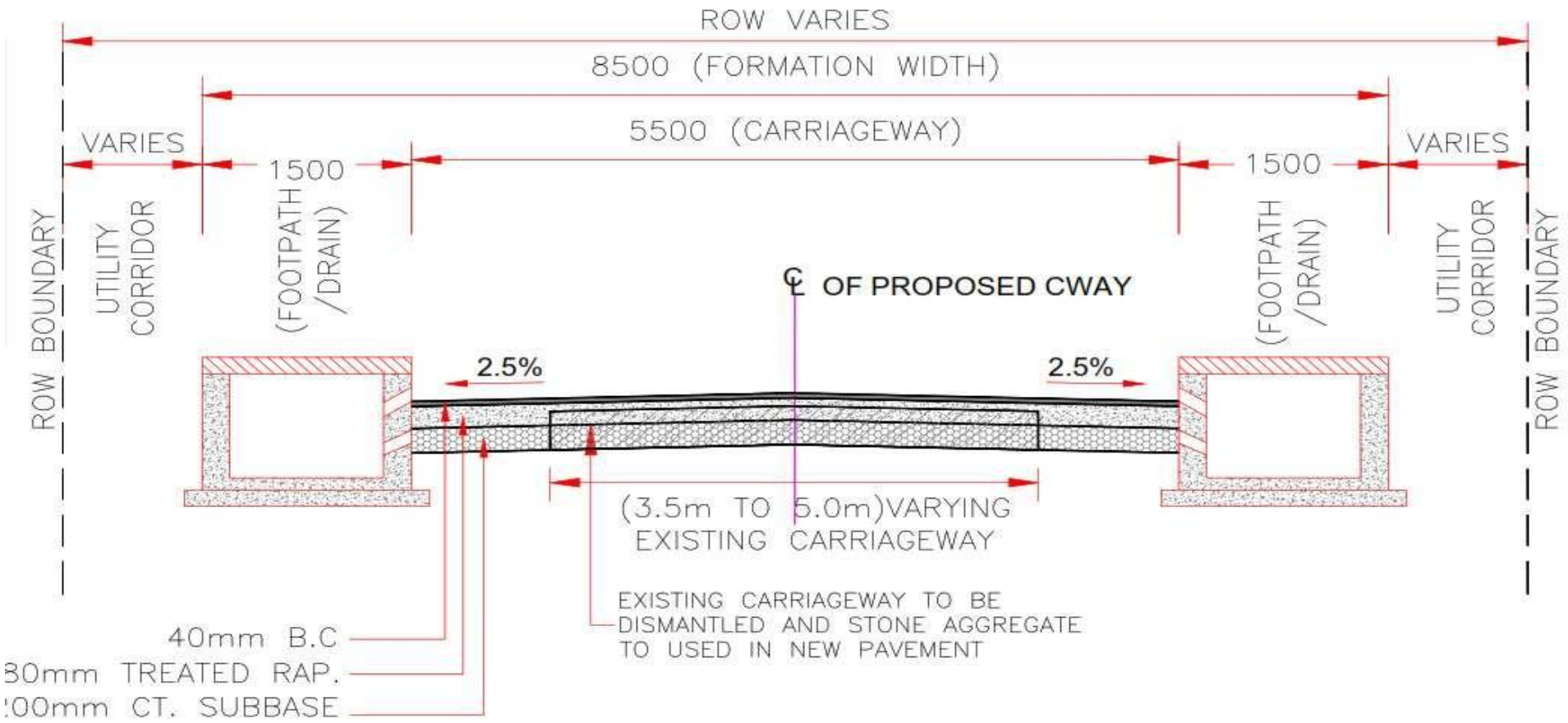
The length of Structures and bridges specified hereinabove shall be treated as an approximate assessment. The Contractor in accordance with the Specifications and Standards shall determine the actual lengths as required on the basis of detailed investigations. Any variations in the lengths specified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

Appendix-B-I



TYPE-I

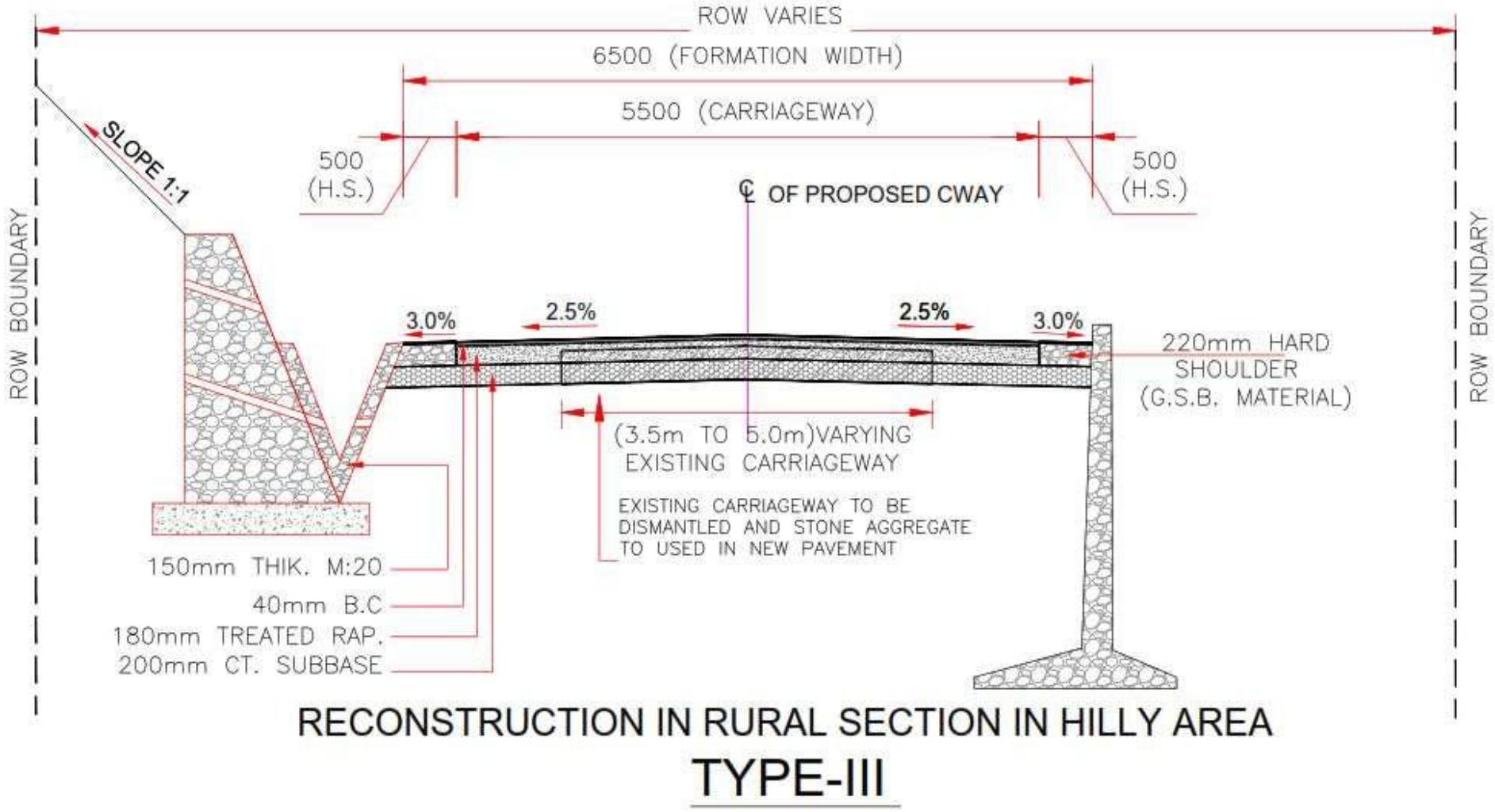
Appendix-B-I



RECONSTRUCTION IN URBAN SECTION

TYPE-II

Appendix-B-I

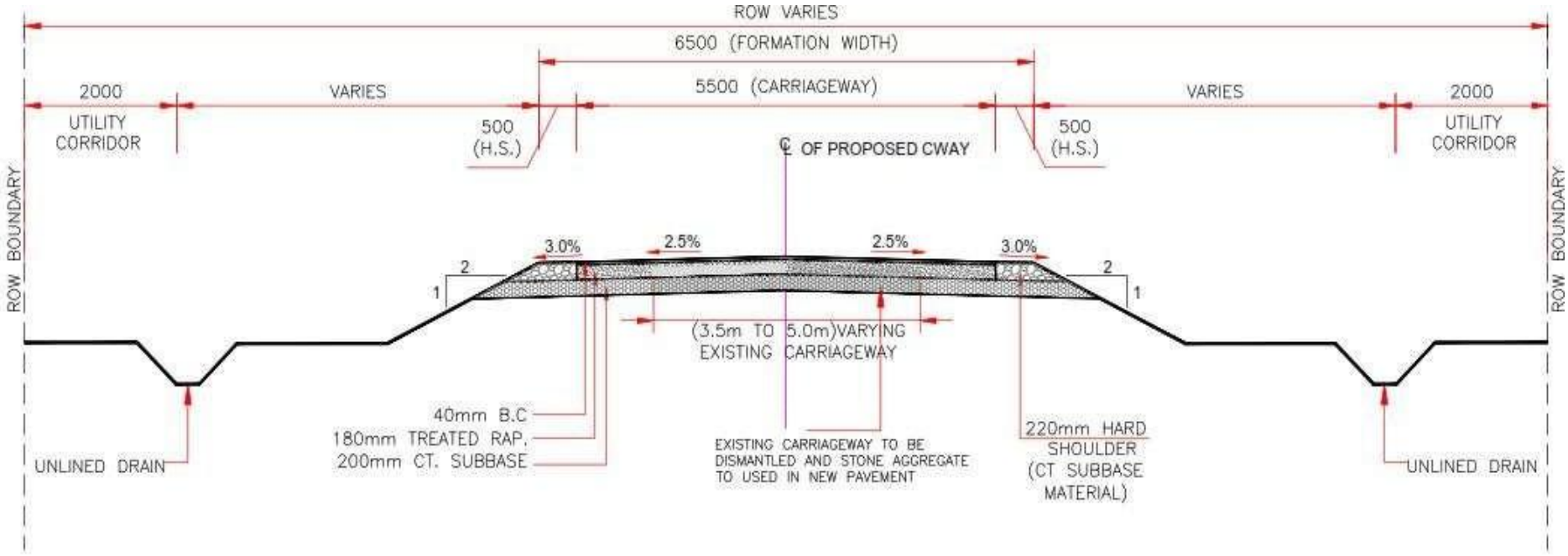


RECONSTRUCTION IN RURAL SECTION IN HILLY AREA

TYPE-III

* Retaining wall and Breast wall shown in TCS III drawing is typical. Location of these components should be applied as per site condition.

Appendix-B-I

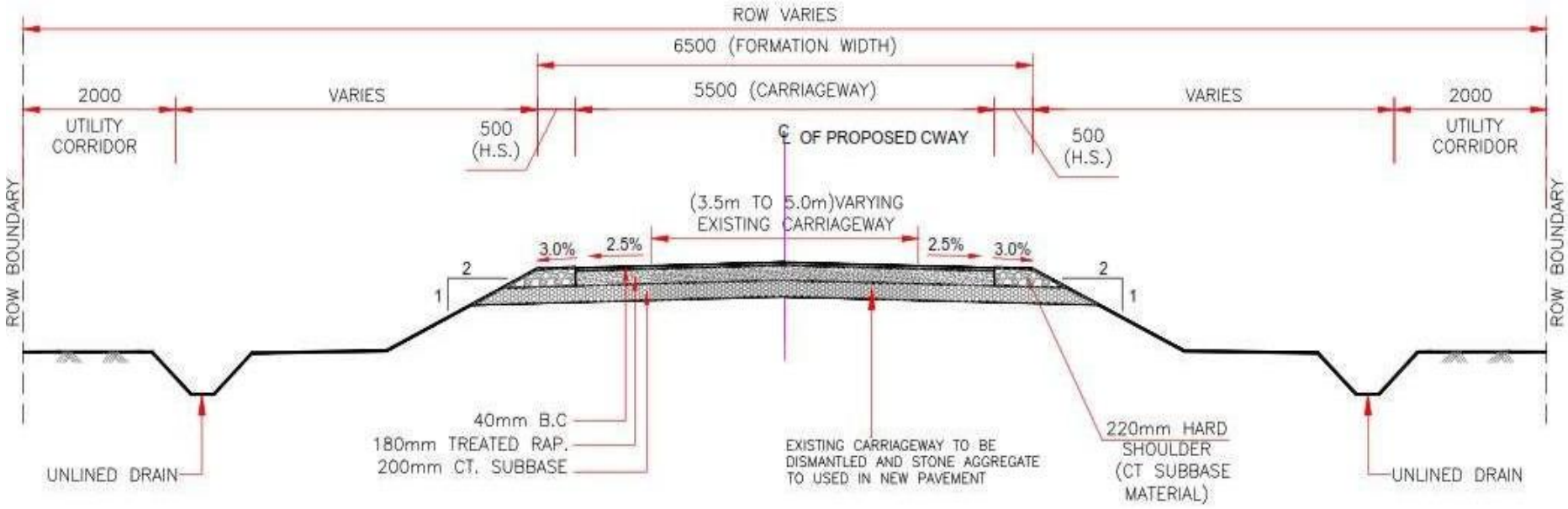


REHABILITATION IN RURAL SECTION (FILLING)

TYPE-IV

*** TCS IV is proposed for filling in rural section and drawing shown for the same is typical. Wherever required the retaining wall must be provided, to confine the toe within ROW.

Appendix-B-I

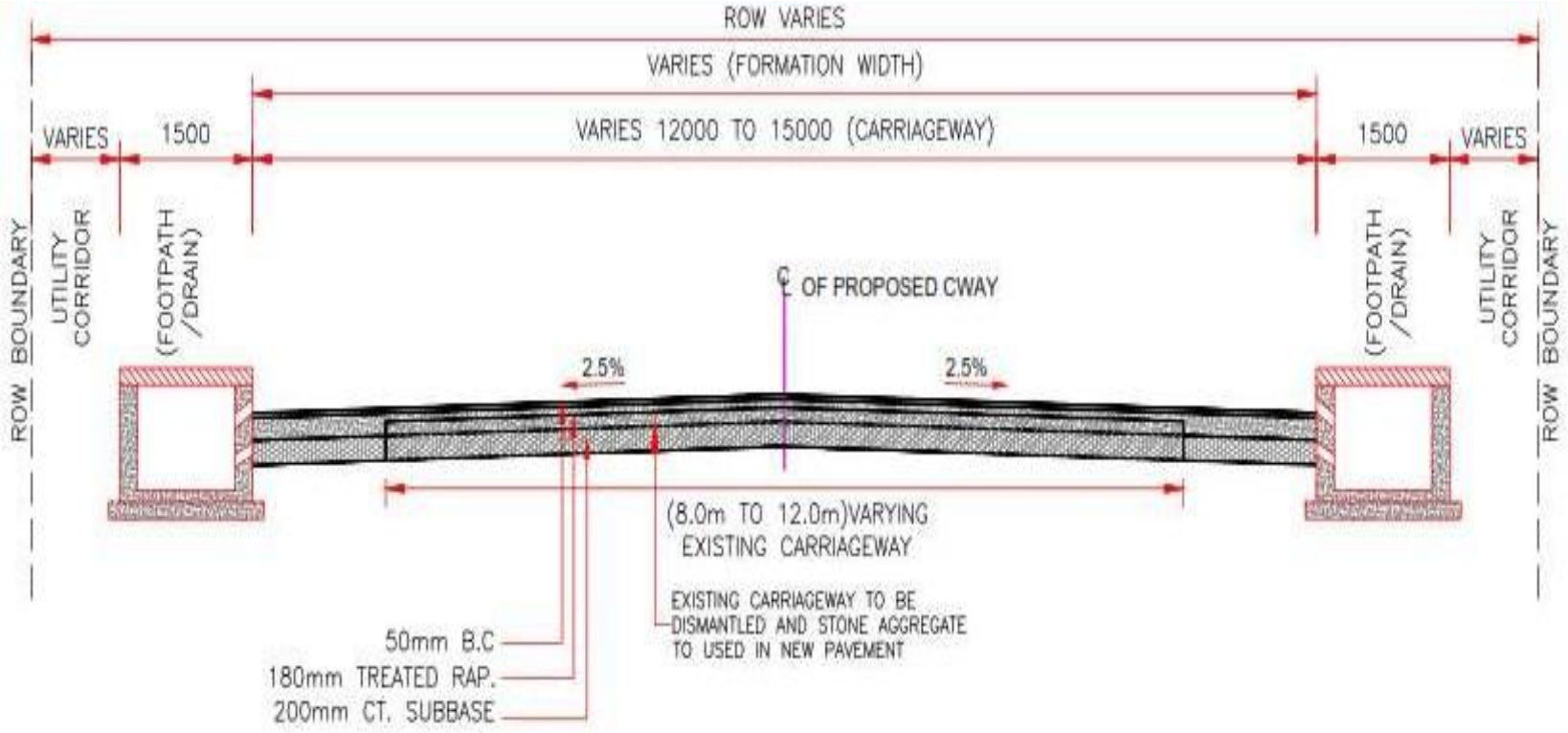


REHABILITATION IN RURAL SECTION (CUTTING)

TYPE-V

** TCS V is proposed for cutting in rural section and drawing shown for the same is typical. Wherever required the breast wall must be provided, if there is cutting in hill here is cutting in hill.

Appendix-B-I



RECONSTRUCTION IN URBAN SECTION

TYPE-VI

SCHEDULE - C

(See Clause 2.1)

PROJECT FACILITIES

1. Project Facilities

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

a) Roadside furniture;

b) Pedestrian facilities;

c) Bus shelter

d) Passing Places

e) Metal Beam Crash Barrier

f) Breast Wall & Retaining Wall

Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

c) Roadside furniture;

The roadside furniture shall include the provision of:

i. Traffic Signs:
Traffic signs include roadside signs, overhead signs and kerb-mounted signs along the entire Project Highway as per the manual of specifications.

ii. Pavement Markings:
Pavement markings shall cover road marking as per the manual of specifications.

iii. LED Traffic Blinkers:
LED Traffic Blinkers for the entire project highway at the locations as suggested in Manual.

iv. Crash barrier
As per clause 9.4 of IRC:SP-73 and as per details given in schedule-B

v. Delineators
Delineators for the entire Project Highway at the locations as suggested in Manual.

vi. Hectometre / Kilometre stones:

Hectometre/ Kilometre Stones for the entire Project Highway at the locations as suggested in Manual.

vii. Road Studs:

Road studs (RRPM) is to be provided as per the specifications of IRC:SP:73-2015.

d) Pedestrian facilities;

The pedestrian facilities shall be provided as per the Manual. 30 CC benches is to be provided along project highway and the locations of these benches shall be finalized by the Contractor in consultation with Authority's Engineer.

e) Bus Shelter

The Contractor shall provide additional 21 nos. of Bus Shelters along the project highway and the locations are given below. The design of Bus Shelters should be aesthetically pleased with surrounding. The locations of these bus shelters shall be finalized by the Contractor in consultation with Authority's Engineer.

S.no	Proposed CH	Side
1	303+500	LHS
2	303+700	RHS
3	304+100	RHS
4	304+400	LHS
5	305+000	RHS
6	305+300	LHS
7	306+900	LHS
8	307+350	RHS
9	307+900	LHS
10	308+600	LHS
11	309+200	RHS
12	310+700	LHS
13	310+900	RHS
14	311+700	RHS
15	312+100	LHS
16	312+800	RHS
17	313+400	LHS
18	315+000	RHS
19	315+500	LHS
20	324+600	RHS
21	325+000	LHS

f) Parking Place:

The Contractor shall provide additional 2 nos. of Parking Places along the project highway and the locations should be in or near urban areas according to availability of space/ROW. The design of Bus Shelters should be aesthetically

pleased with surrounding. The locations of these bus shelters shall be finalized by the Contractor in consultation with Authority's Engineer.

SCHEDULE – D

(See Clause 2.1)

SPECIFICATIONS AND STANDARDS

1. Construction

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

2. Design Standards

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

Manual of Specifications and Standards for Two-Laning of Highways (IRC:SP:73-2015), referred to herein as the Manual.

Annex - I

(Schedule-D)

Specifications and Standards for Construction

1. Specification and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for Two-Lanning of Highways (IRC:SP:73-2015), referred to as the Manual, and MORTH Specifications for Road and Bridge Works. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Engineer in charge.

2. Deviations from the Specifications and Standards

(i) The terms "Concessionaire", "Independent Engineer" and "Concession Agreement" used in the Manual shall be deemed to be substituted by the terms "Contractor", "Authority's Engineer" and "Agreement" respectively.

(ii) Notwithstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:

S. No.	Clause Referred in Manual	Item	Provisions as per Manual	Modified Provision
1	2.2.1	Design Speed	80 kmph (min. speed for plain/rolling terrain)	Design speed has not been as per Manual to restrict the construction within the available ROW
2	7.3(iv)	Width of bridge	11m carriageway including 0.5m Kerb shyness on both sides. 0.5m Crash barrier to be provided on both sides after kerb shyness.	8.5m width including crash barrier has been provided because of less traffic on the road.

SCHEDULE – E

(See Clause 2.1 and 14.2)

MAINTENANCE REQUIREMENTS

1. Maintenance Requirements

1.1. The Contractor shall, at all-time maintain the Project Highway in accordance with the provisions of this Agreement, Applicable Laws and Applicable Permits.

1.2 The Contractor shall repair or rectify any Defect or deficiency set forth in Paragraph 2 of this Schedule-E within the time limit specified therein and any failure in this behalf shall constitute non-fulfillment of the Maintenance obligations by the Contractor. Upon occurrence of any breach hereunder, the Authority shall be entitled to effect reduction in monthly lump sum payment as set forth in Clause 14.6 of this Agreement, without prejudice to the rights of the Authority under this Agreement, including Termination thereof.

1.3. All Materials, works and construction operations shall conform to the "SPECIFICATIONS FOR ROAD ANDBRIDGE WORKS (FIFTH REVISION, April 2013)", including latest corrections slips, issued by the Ministry of Surface Transport & Highways, Government of India and published by the Indian Roads Congress.

This being not an item rate contract, the procedure for Measurement and Payment for the items of works shall be in accordance with provision of Article 19 of the Agreement. Therefore the Sub Clauses of measurement for payment and rates in above specifications stand deleted.

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

2. Repair/rectification of Defects and deficiencies

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

3. Other Defects and deficiencies

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

4. Extension of time limit

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

5. Emergency repairs/restoration

Notwithstanding anything to the contrary contained in this Schedule-E, if any Defect, deficiency or deterioration in the Project Highway poses a hazard to safety or risk of damage to property, the Contractor shall promptly take all reasonable measures for eliminating or minimizing such danger.

6. Daily inspection by the Contractor

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

7. Pre-monsoon inspection / Post-monsoon inspection

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

8. Repairs on account of natural calamities

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

Annex – I

(Schedule-E)

Repair/rectification of Defects and deficiencies

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

Nature of Defect or deficiency		Time limit for repair/ rectification
ROADS		
(a)	**Carriageway and paved shoulders**	
(i)	Breach or blockade	Temporary restoration of traffic within 24 hours; permanent restoration within 15 (fifteen) days
(ii)	Any significant change in roughness value from original value [more than 5%] in a stretch of 1 km (as measured by a Calibrated bump integrator)	120 (one hundred and twenty) days
(iii)	Pot holes	24 hours
(iv)	Any cracks in road surface	15 (fifteen) days
(v)	Any depressions, rutting exceeding 10 mm in road surface	30 (Thirty) days
(vi)	Skidding	7 (seven) days
(vii)	Any other defect/distress on the road	15 (fifteen) days
(viii)	Damage to pavement edges	15 (fifteen) days
(ix)	Removal of debris, dead animals	6 hours
(x)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(b)	**Granular earth shoulders, side slopes, drains and culverts**	
(i)	Edge drop at shoulders exceeding 40 mm	7 (Seven) days
(ii)	Variation by more than 1% in the prescribed	7 (seven) days

	slope of camber/cross fall (shall not be less than the camber on the main carriageway)	
(iii)	Variation by more than 15% in the prescribed side (embankment) slopes	30 (thirty) days
(iv)	Rain cuts/gullies in slope	7 (Seven) days
(v)	Damage to or silting of culverts and side drains	7 (Seven) days
(vi)	Desilting of drains in urban/semi-urban areas	24 hours
(vii)	Railing, parapets, crash barriers	7 (Seven) days (Restore immediately if causing safety hazard)
(viii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(c)	**Road side furniture including road sign and pavement marking**	
(i)	Damage to shape or position, poor visibility or loss of retro-reflectivity	48 hours
(ii)	Painting of KM stone, railing, parapets, crash barriers	As and when required/Once every year
(iii)	Damaged/missing roa signs required replacement	7 (Seven) days
(iv)	Damage to road mark ups	7 (Seven) days
(v)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(d)	**Road lighting**	
(i)	Any major failure of the system	24 hours
(ii)	Faults and minor failures	8 hours
(iii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(e)	**Trees and plantation**	
(i)	Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs	24 hours
(ii)	Removal of fallen trees from carriageway	4 hours

(iii)	Deterioration in health of trees and bushes	Timely watering and treatment
(iv)	Trees and bushes requiring replacement	30 (Thirty) days
(v)	Removal of vegetation affecting sight line and road structures	15 (fifteen) days
(vi)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(f)	**Other Project Facilities, Rest Area and Approach roads**	
(i)	Damage in pedestrian facilities, truck lay-buys, bus-bays, bus-shelters, cattle, crossings, [Traffic Aid Posts, Medical Aid Posts] and service roads	15 (fifteen) days
(ii)	Cleaning of toilets	Every 4 hours
(iii)	Defects in electrical, water and sanitary installations	24 hours
(iv)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(v)	Rescue operations and attendance at accidents	Round the clock patrolling Inform police and other agencies immediately Removal of vehicles or debris. Assistance for first-aid and transport of accident victim to hospital Arrangement for safe movement of traffic
(vi)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days
(vii)	Damaged vehicles or debris on the road	4 (Four) hours
(viii)	Malfunctioning of the mobile cranes	4 (four) hours
Bridges		
(a)	**Superstructure**	
(i)	Any damage, cracks, spalling/scaling	

	Temporary measures Permanent measures	 Within 48 hours Within 15 (fifteen) days or as specified by the Authority's Engineer
(b)	**Bearings (metallic) of bridges**	
(i)	Deformation	15 (fifteen) days Greasing of metallic bearings once in a year
(c)	**Joints**	
(i)	malfunctioning of joints	15 (fifteen) days
(ii)	Any other defects/deficiency not covered above (a) , (b) &(c) but pointed out by Engineer	3 (Three) days
(d)	**Foundations**	
(i)	Scouring and/or cavitation	15 (fifteen) days
(e)	**Piers, abutments, return walls and wing walls**	
(i)	Cracks and damages including settlement and tilting, Spalling, scaling	30 (thirty) days
(ii)	Any other defects/deficiency not covered above (d) & (e) but pointed out by Engineer	3 (Three) days
(f)	**Other items**	
(i)	Deforming of pads in elastomeric bearings	7 (seven) days
(ii)	Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes	3 (three) days
(iii)	Damage or deterioration in kerbs, parapets, handrails and crash barriers	3 (three) days (immediately within 24 hours if posing danger of safety)
(iv)	Rain-cuts or erosion of banks of the side slopes of approaches	7 (seven) days

(v)	Damage to wearing coat	15 (fifteen) days
(vi)	Damage or deterioration in approach Slabs, pitching, apron, toes, floor or guide bunds	30 (thirty) days
(vii)	Growth of vegetation affecting the structure or obstructing the waterway	15 (fifteen) days
(viii)	Any other defects/deficiency not covered above but pointed out by Engineer	3 (Three) days

The failure to address above measures for any of the defects/deficiency may attract reduction in payment as per schedule M

Schedule-F

(See Clause 3.1.5(a))

APPLICABLE PERMITS

1. Applicable Permits

The Contractor shall obtain, as required under the Applicable Laws, the following Applicable Permits:

(a) Permission of the State Government for extraction of boulders from quarry;

(b) Permission of Village Panchayat and Pollution Control Board for installation of crushers;

(c) License for use of explosives;

(d) Permission of the State Government for drawing water from river/reservoir;

(e) License from inspector of factories or other competent Authority for setting up batching plant;

(f) Clearance of Pollution Control Board for setting up batching plant;

(g) Clearance of Village Panchayats and Pollution Control Board for setting up asphalt plant;

(h) Permission of Village Panchayats and State Government for borrow earth; and

(i) Any other permits, clearances or approvals required under Applicable Laws.

1.2 Applicable permits, as required, relating to environmental protection and conservation shall have been produced by the Authority in accordance with the provisions of this Agreement

Schedule-G

(See Clause 7.1.1, 7.5.3 and 19.2)

FORM OF BANK GUARANTEE

Annex-I

(See Clause 7.1.1)

PERFORMANCE SECURITY

The Managing
Director, NHIDCL,
3rd Floor, PTI Building, Sansad Marg,
New Delhi

WHEREAS:

(A) _____[name and address of contractor] (hereinafter called "the Contractor") and [**NHIDCL**], (**"the Authority"**) have entered into an agreement (the **"Agreement"**) for "Rehabilitation and up-gradation of section from Km 0.000 to 12.000 (After Chidiyatapu to Beodnabad) of NH-4 to Intermediate lane with hard shoulder in the Union Territory of Andaman & Nicobar Islands through Engineering, Procurement & Construction (EPC) Basis Contract", subject to and in accordance with the provisions of the Agreement.

(B) The Agreement requires the Contractor to furnish a Performance Security for due and faithful performance of its obligations, under and in accordance with the Agreement, during the Construction Period and Defects Liability Period and maintenance period (as defined in the Agreement) in a sum of Rs. …. Crore (Rupees …. Crore) (the "Guarantee Amount").

(C) We, …….. through our branch at ……. (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") by way of Performance Security.

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

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

2. A letter from the Authority, under the hand of an officer not below the rank of [Executive Director, NHIDCL], that the Contractor has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Contractor is in default in due and faithful performance of its obligations during and under the Agreement and its decision that the Contractor is in default shall be final, and binding on the Bank, notwithstanding any difference between the Authority and the Contractor, or any dispute between them pending before any court, tribunal, arbitrators or any other Authority or body, or by the discharge of the Contractor for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfillment and/or performance of all or any of the obligations of the Contractor contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfillment, compliance and/or performance of all or any of the obligations of the Contractor under the Agreement.

7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

8. The Performance Security shall cease to be in force and effect upto 90 (ninety) days after the end of the Defects Liability Period as set forth in Clauses 17.1 of EPC agreement.

9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.

10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
[[[

11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in para 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.

12. This guarantee shall also be operable at our…… Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension/ renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.

13. Intimation regarding issuance of this Bank Guarantee shall be sent to Authority's Bank through SFMS gateway as per the details below:

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062
4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Syndicate Bank transport Bhawan, 1st Parliament Street, New Delhi-110001

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

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

NOTES:

(i) The bank guarantee should contain the name, designation and code number of the officer(s) signing the guarantee.

(ii) The address, telephone number and other details of the head office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing branch.

Annex-II

(Schedule-G)

(See Clause 19.2)

Form for Guarantee for Advance Payment

The Managing
Director, NHIDCL,
3rd Floor, PTI Building, Sansad Marg,
New Delhi

WHEREAS:

(A) [name and address of contractor] (hereinafter called "**the Contractor**") has executed an agreement (hereinafter called the "Agreement") with the [**NHIDCL**], (hereinafter called "**the Authority**") for the "Rehabilitation and up-gradation of section from Km 0.00 to 12.000 (After Chidiyatapu to Beodnabad) of NH-4 to Intermediate lane with hard shoulder in the Union Territory of Andaman & Nicobar Islands through Engineering, Procurement & Construction (EPC) Basis Contract", subject to and in accordance with the provisions of the Agreement.

(B) In accordance with Clause 19.2 of the Agreement, the Authority shall make to the Contractor an interest bearing @Bank Rate + 3% advance payment (herein after called "Advance Payment") equal to 10% (ten per cent) of the Contract Price; and that the Advance Payment shall be made in two installments subject to the Contractor furnishing an irrevocable and unconditional guarantee by a scheduled bank for an amount equivalent to 110% (one hundred and ten percent) of such installment to remain effective till the complete and full repayment of the installment of the Advance Payment as security for compliance with its obligations in accordance with the Agreement. The amount of {first/second} installment of the Advance Payment is Rs. cr. (Rupees crore) and the amount of this Guarantee is Rs. cr. (Rupees crore) (the "Guarantee Amount")

(C) We, …….. through our branch at ……. (the "Bank") have agreed to furnish this bank guarantee (hereinafter called the "Guarantee") for the Guarantee Amount.

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

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

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

2. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Contractor and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.

3. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Contractor before presenting to the Bank its demand under this Guarantee.

4. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Advance Payment or to extend the time or period of its repayment or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Contractor, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

5. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Advance Payment.

6. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

7. The guarantee shall cease to be in force and effect 90 (ninety) days after the end of the one year from the date of payment of the installment of the Advance Payment, as set forth in Clause 19.2 of the Agreement.

8. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares and warrants that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
9. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred branch, which shall be deemed to have been duly authorized to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.

10. This Guarantee shall come into force with immediate effect and shall remain in force and effect for up to the date specified in para 8 above or until it is released earlier by the Authority pursuant to the provisions of the Agreement.
11. This guarantee shall also be operable at our…… Branch at New Delhi, from whom, confirmation regarding the issue of this guarantee or extension/ renewal thereof shall be made available on demand. In the contingency of this guarantee being invoked and payment thereunder claimed, the said branch shall accept such invocation letter and make payment of amounts so demanded under the said invocation.
12. Intimation regarding issuance of this Bank Guarantee shall be sent to Authority's Bank through SFMS gateway as per the details below:

S.No.	Particulars	Details
1	Name of Beneficiary	National Highways & Infrastructure Development Corporation Limited
2	Beneficiary Bank Account No.	90621010002659
3	Beneficiary Bank Branch	IFSC SYNB0009062

4	Beneficiary Bank Branch Name	Transport Bhawan, New Delhi
5	Beneficiary Bank Address	Syndicate Bank transport Bhawan, 1st Parliament Street, New Delhi-110001

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

SIGNED, SEALED AND DELIVERED

For and on behalf of the Bank by:

(Signature)

(Name)

(Designation)

(Code Number)

(Address)

Schedule-H

(See Clauses 10.1.4 and 19.3)

Contract Price Weightages

1. (i) The Contract Price for this Agreement is **Rs. Crore.**

1. (ii) Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Item	**Weightage in percentage to the Contract Price**	**Stage for Payment**	**Percentage weightage**
1	**2**	**3**	**4**
Road works including culverts, widening and repair of culverts	74.73%	**B.1- Reconstruction/ New 4-lane realignment/bypass (Flexible pavement)**	
		(1) Site Clearance, Dismantling and Scarifying	1.63%
		(2) Sub-Base Course (Cement Treated)	21.73%
		(3) Treated RAP	36.02%
		(4) Bituminous Wearing Course	14.62%
		(5) Hard Shoulder with CT Sub-base	3.54%
		D-Re-Construction and New culverts on existing road, realignments, bypasses:	
		Culverts (lengths < 6m)	21.54%
		Culverts maintenance of 41 culvert as per schedule B	0.92%
Minor Bridges/ Underpasses/ Overpasses	3.72%	**A.1- Widening and Repair of Minor bridges (length >6 m and < 60 m)**	
		Repair of Minor bridges as per Schedule-B	2.44%
		A.2- New Minor bridges (length >6 m and < 60 m)	

		(1) Foundation + Sub- Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/ pier cap.	56.33%
		(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion in all respect.	40.18%
		(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	1.05%
Major Bridge works	0.00%	**A.1- Widening and Repair of Major bridges**	
		Major Bridges	0.00%
		A.2 -New major bridges & Viaduct	
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%
		(6) Wing walls/ return walls	0.00%
		(7) Guide Bunds, River Training works etc.	0.00%
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
Other works	21.55%	(i) Road side drains	
		(a) Unlined Drains	0.56%
		(b) Lined Drain (Random Rubble Masonary drain)	5.79%
		(c) RCC Covered Drains	17.57%
		(ii) Road signs, markings, km stones, safety devices	13.13%
		(iii) Junctions	21.11%
		(iv) Protection Works	0.00%
		(a) Breast Wall	8.78%

		(b) Retaining Wall	10.14%
		(c) Metal Beam Crash Barrier	12.03%
		(v) Project facilities (a) Bus Bays & Shelters (b) Passing Places (c) Truck lay-byes (d) Rest areas (e) Others (Parking Spaces)	 5.59% 3.27% 0.00% 0.00% 0.73%
		(vi) Repair of Protection Works other than approaches to the bridges, elevated sections/ flyover/ grade separators and ROBs/ RUBs	0.000%
		(vii) Site Clearance & Dismantling	0.00%
		viii) Safety and traffic management during construction	0.00%
		ix) Premix Carpeting for filling of pot holes and repair works as per Schedule-B	1.30%

Procedure of estimating the value of work done.

(i) Road works.

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

Table 1.3.1

Stage for Payment	Percentage weightage	Payment Procedure
B.1- Reconstruction/ New 4-lane realignment/bypass (Flexible pavement)		
(1) Site Clearance, Dismantling and Scarifying	1.63%	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10 (ten) percent of the total length.
(2) Sub-Base Course (Cement Treated)	21.73%	
(3) Treated RAP	36.02%	
(4) Bituminous Wearing Course	14.62%	
(5) Hard Shoulder with CT Sub-	3.54%	

base		
D-Re-construction and New culverts on existing road, realignments, bypasses:		
(1) Culverts (length < 6m)	21.54%	Cost of ten completed culverts shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least two culverts
Culverts maintenance of 41 culvert as per schedule B	0.92%	

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

Cost per km = P x weightage for road work x weightage for bituminous work x (1/L)

Where P = Contract Price

L = Total length in km

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

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

1.1.1 Minor Bridge and Underpasses/ Overpasses

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

Table 1.3.2

Stage of Payment	**Weightage**	**Payment Procedure**
1	**2**	**3**
A.1- Widening and Repair of Minor bridges (length >6 m and < 60 m)	2.44%	Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair

		works of a minor bridge.
A.2- <u>New minor bridges</u>		
(1) Foundation + Sub- Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/ pier cap.	56.33%	Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation + sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation + sub-structure of each bridge subject to completion of at least two foundations along with sub-structure upto abutment/pier cap level of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion in all respect.	40.18%	Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	1.05%	Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub-clause.

1.1.2 Major Bridge works & Viaducts

Procedure for estimating the value of Major Bridge works & Viaducts shall be as stated in table 1.3.3:

Table 1.3.3

Stage for Payment	Percentage weightage	Payment Procedure
A.1- Widening and Repair of Major bridges	0.00%	Cost of each major bridge shall be determined on pro rata basis with respect to the total linear length of the major bridges. Payment shall be made on the completion of widening & repair works of a minor bridge.
A.2-<u>New major bridges & Viaduct</u>		
(1) Foundation	0.000%	Cost of each major bridge/ Viaduct shall be determined on pro rata basis with respect to the total linear length (m) of the Major bridge/ Viaduct. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the Major bridge/ Viaduct subject to completion of at least two foundations of the Major bridge/ Viaduct. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	0.000%	Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the Major bridge/ Viaduct subject to completion of at least two sub-structures of abutments/piers upto abutment/pier cap level of the Major bridge/ Viaduct.
(3) Super-structure (including bearings)	0.000%	Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified.
(4) Wearing Coat including expansion joints	0.000%	Payment shall be made on completion of wearing coat including expansion joints

Stage for Payment	Percentage weightage	Payment Procedure
		complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.000%	Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/ return walls	0.000%	Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Guide Bunds, River Training works etc.	0.000%	Payment shall be made on completion of all Guide Bunds/River Training works etc. complete in all respects as specified.
(8) Approaches (including Retaining walls, stone pitching and protection works)	0.000%	Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respect as specified.

1.1.3 Other works.

Procedure for estimating the value of other works done shall be as stated in table 1.3.4:

Table 1.3.4

Stage for Payment	Percentage weightage	Payment Procedure
(i) Road side drains		Unit of measurement is linear length in km. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
(a) Unlined Drains	0.56%	
(b) Lined Drain (Random Rubble Masonary drain)	5.79%	
(c) RCC Covered Drains	17.57%	
(ii) Road signs, markings, km stones, safety devices.	13.13%	
(iii) Junctions	21.11%	Payment shall be made on pro rata basis for completed facilities.
(iv) Protection works	0.00%	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per

			cent) of the total length.
(a) Breast Wall		8.78%	
(b) Retaining Wall		10.14%	
(c) Metal Beam Crash Barrier		12.03%	
(v) Project facilities	(i) Bus bays/Shelters	5.59%	Payment shall be made on pro-rata basis for completed facilities.
	(ii) Passing Places	3.27%	
	(ii) Truck lay bye	0.00%	
	(iii) Rest areas	0.00%	
	(iv) others (Parking space)	0.73%	
(vi) Repair of Protection Works other than approaches to the bridges, elevated sections/ flyover/ grade separators and ROBs/ RUBs		0.000%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
(vii) Site Clearance & Dismantling		0.00%	
(viii) Safety and traffic management during construction		0.000%	Payment shall be made on pro rata basis every six months.
(ix) Pre mix carpeting for filling of pot holes and repair		1.30%	

2. Procedure for payment for Maintenance

(a) The cost for maintenance shall be as stated in Clause 14.1.1.
(b) Payment for Maintenance shall be made in Monthly basis in accordance with the provisions of Clause 19.6 & 19.7 of the Contract Agreement.

SCHEDULE-I

(See Clause 10.2)

DRAWINGS

1. Drawings

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

2. Additional Drawings

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

Annex-I

(Schedule-I)

List of Drawings

Alignment Plan and longitudinal Section are enclosed in digital form in CD marked as Annex-I

[Note: The Authority shall describe in this Annex-I, all the Drawings that the Contractor is required to furnish under Clause 10.2.]

- Typical Cross-section with details of pavement structures.

SCHEDULE-J

(See Clause 10.3.2)

PROJECT COMPLETION SCHEDULE

1. Project Completion Schedule

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

2. Project Milestone-I

(i) Project Milestone-I shall occur on the date falling on the 180th (One Hundred and Eighty) day from the Appointed Date (the "**Project Milestone-I"**).

(ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements completion schedule in reference to Schedule-H Items, Stages and Sub-stages payment statements for an amount not less than 10% (ten per cent) of the Contract Price.

3. Project Milestone-II

(i) Project Milestone-II shall occur on the date falling on the 410th (Four hundred and ten) day from the Appointment Date (the **"Project Milestone-II**").

Prior to the occurrence of Project Milestone-II, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements completion schedule in reference to Schedule-H Items, Stages and Sub-stages payment statements for an amount not less than 35% (thirty five per cent) of the Contract Price and should have started construction of all project facilities.

4. Project Milestone-III

(i) Project Milestone-III shall occur on the date falling on the 610th (Six hundred and ten) day from the Appointed Date (the "**Project Milestone-III"**).

(ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the

Authority duly and validly prepared payment Statements for an amount not less than 60% (sixty per cent) of the Contract Price and should have started construction of all project facilities.

5 Schedule Completion Date

(i) The Schedule Completion Date shall occur on the 730th (seven hundred and thirtieth) day from the Appointed Date.

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

6 Extension of time

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

SCHEDULE-K

(See Clause 12.1.2)

Tests on Completion

1. Schedule for Tests

(i) The Contractor shall, no later than 30 (thirty) days prior to the likely completion of construction, notify the Authority's Engineer and the Authority of its intent to subject the Project Highway to Tests, and no later than 10 (ten) days prior to the actual date of Tests, furnish to the Authority's Engineer and the Authority detailed inventory and particulars of all works and equipment forming part of Works.

(ii) The Contractor shall notify the Authority's Engineer of its readiness to subject the Project Highway to Tests at any time after 10 (ten) days from the date of such notice, and upon receipt of such notice, the Authority's Engineer shall, in consultation with the Contractor, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Authority's Engineer shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 12 and this Schedule K.

2 Tests

(i) Visual and physical test: The Authority's Engineer shall conduct a visual and physical check of construction to determine that all works and equipment forming part thereof conform to the provisions of this Agreement. The physical tests shall include: all the tests specified in IRC code, manual and MORTH specifications for the road and Bridge works, 5th revision, 2013.

(ii) Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a Network Survey Vehicle (NSV) fitted with latest equipments and the maximum permissible roughness for purposes of this Test shall be [2,000 (two thousand)] mm for each kilometre.

(iii) Tests for bridges: All major and minor bridges shall be subjected to the rebound hammer and ultrasonic pulse velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Nondestructive Testing Techniques, at two spots in every span, to be chosen at random by the Authority's Engineer. Bridges with a span of 15 (fifteen) meters or more shall also be subjected to load testing.

(iv) Other tests: The Authority's Engineer may require the Contractor to carry out or cause to be carried additional tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards, except tests as specified in clause 5,but shall include measuring the reflectivity of road markings and road signs; and measuring the illumination level (lux) of lighting using requisite testing equipment.

(v) Environmental audit: The Authority's Engineer shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.

(vi) Safety Audit: The Authority's Engineer shall carry out or cause to be carried out, a safety audit to determine conformity of the Project Highway with the safety requirements and Good Industry Practice.

3 Agency for conducting Tests

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

4. Completion Certificate

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

5. The Authority Engineer will carry out tests with following equipment at his own cost in the presence of contractor's representative.

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

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

SCHEDULE-L

(See Clause 12.2 and 12.4)

COMPLETION CERTIFICATE

1. I, …….. (Name of the Authority's Engineer), acting as Authority's Engineer, under and in accordance with the Agreement dated …….. (the "**Agreement**"), for construction of the "Rehabilitation and up-gradation of section from Km 298.0 to 330.662 (Karala Village to Kalipur Village of NH-4 to Intermediate lane with hard shoulder in the Union Territory of Andaman & Nicobar Islands through Engineering, Procurement & Construction (EPC) Basis Contract through ……. (Name of Contractor), hereby certify that the Tests in accordance with Article 12 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safety and reliably placed in service of the Users thereof..

2. It is certified that, in terms of the aforesaid Agreement, all works forming part of Project Highway have been completed, and the Project Highway is hereby declared fit for entry into operation on this the ……..day of 20 …..

SIGNED, SEALED AND DELIVERED

For and on behalf of

Authority's Engineer by:

(Signature)

(Name)

(Designation)

(Address)

SCHEDULE-M

(See Clauses 14.6., 15.2 and 19.7)

PAYMENT REDUCTION FOR NON-COMPLIANCE

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

(i) Monthly lump sum payments for maintenance shall be reduced in the case of non-compliance with the Maintenance Requirements set forth in Schedule-E.

(ii) Any deduction made on account of non-compliance with the maintenance Requirements shall not be paid even after compliance subsequently. The deduction shall continue to be made every month until compliance is done.

(iii) The Authority's Engineer shall calculate the amount of payment reduction on the basis of weightage in percentage assigned to non-conforming items as given in Paragraph 2.

2. Percentage reductions in lump sum payments

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

S. No.	Item/Defect/Deficiency	Percentage
(a)	**Carriageway/Pavement**	
(i)	Potholes, cracks, other surface defects	15%
(ii)	Repairs of Edges, Rutting	5%
(b)	**Road, Embankment, Cuttings, Shoulders**	
(i)	Edge drop, inadequate crossfall, undulations, settlement, potholes, ponding, obstructions	10%
(ii)	Deficient slopes, raincuts, disturbed pitching, vegetation growth, pruning of trees	5%

(c)	**Bridges and Culverts**	
(i)	Desilting, cleaning. vegetation growth, damaged pitching, flooring, parapets, wearing course, footpaths, any damage to foundations	20%

(ii)	Any Defects in superstructures, bearings and sub-structures	10%
(iii)	Painting, repairs/replacement kerbs, railings, parapets, guideposts/crash barriers	5%
(d)	**Roadside Drains**	
(i)	Cleaning and repair of drains	5%
(e)	**Road Furniture**	
(i)	Cleaning, painting, replacement of road signs, delineators, road markings, 200 m/km/5th km stones	5%
(f)	**Miscellaneous Items**	
(i)	Removal of dead animals, broken down/accidented vehicles, fallen trees, road blockades or malfunctioning of mobile crane	10%
(ii)	Any other Defects in accordance with paragraph 1.	5%
(g)	**Defects in Other Project Facilities**	5%

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

$$R = {}^{P}/_{100} \times (M1 \text{ or } M2) \times {}^{L1}/_{L}$$

Where,
P= Percentage of particular item/Defect/deficiency for deduction
M1= Monthly lump-sum payment in accordance para 1.2 above of this Schedule M2= Monthly lump-sum payment in accordance para 1.2 above of this Schedule
L1= Non-complying length L = Total length of the road,

L = Total length of the road,

R = Reduction (the amount to be deducted for noncompliance for a particular

item/Defect/deficiency

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

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

SCHEDULE-N

(See Clause 18.1.1)

SELECTION OF AUTHORITY'S ENGINEER

1 Selection of Authority's Engineer

(i) The provisions of the Model Request for Proposal for Selection of Technical Consultants, issued by the Ministry of Finance in May 2009, or any substitute thereof shall apply for selection of an experienced firm to discharge the functions and duties of an Authority's Engineer.

(ii) In the event of termination of the Technical Consultants appointed in accordance with the provisions of Paragraph 1.1, the Authority shall appoint another firm of Technical Consultants forthwith and may engage a government-owned entity in accordance with the provisions of Paragraph 3 of this Schedule-N.

2 Terms of Reference

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

3 Appointment of Government entity as Authority's Engineer

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

Annex – I

(Schedule - N)

TERMS OF REFERENCE FOR AUTHORITY'S ENGINEER

1. Scope

(i) These Terms of Reference (the "**TOR**") for the Authority's Engineer are being specified pursuant to the EPC Agreement dated ..... (the "**Agreement**), which has been entered into between the Ministry of Road Transport and Highways (the "**Authority**") and ..... (the "**Contractor**") for "Rehabilitation and up-gradation of section from Km 298.0 to 316.0 (Karala Village to Kalipur Village) of NH-4 to Intermediate lane with hard shoulder in the Union Territory of Andaman & Nicobar Islands through Engineering, Procurement & Construction (EPC) Contract, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.

(ii) The TOR shall apply to construction and maintenance of the Project Highway.

2. Definitions and interpretation

(i) The words and expressions beginning with or in capital letters and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.

(ii) References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.

(iii) The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, *mutatis mutandis*, to this TOR.

3. General

(i) The Authority's Engineer shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

(ii) The Authority's Engineer shall perform the duties and exercise the authority in accordance with the provisions of this Agreement, but subject to obtaining prior written approval of the Authority before determining:

(a) Any Time extension;

(b) Any additional cost to be paid by the Authority to the Contractor;

(c) The Termination Payment; or

(d) issuance of Completion Certificate or

(e) Any other matter which is not specified in (a), (b) or (c) above and which creates an obligation or liability on either Party for a sum exceeding Rs. 5,000,000 (Rs. fifty lakh).

(iii) The Authority's Engineer shall submit regular periodic reports, at least once every month, to the Authority in respect of its duties and functions under this Agreement. Such reports shall be submitted by the Authority's Engineer within 10 (ten) days of the beginning of every month.

(iv) The Authority's Engineer shall inform the Contractor of any delegation of its duties and responsibilities to its suitably qualified and experienced personnel; provided, however, that it shall not delegate the authority to refer any matter for the Authority's prior approval in accordance with the provisions of Clause 18.2.

(v) The Authority's Engineer shall aid and advise the Authority on any proposal for Change of Scope under Article 13.

(vi) In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement,

4 Construction Period

(i) During the Construction Period, the Authority's Engineer shall review and approve the Drawings furnished by the Contractor along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys, and the recommendations of the Safety Consultant in accordance with the provisions of Clause 10.1 (vi). The Authority's Engineer shall complete such review and approval and send its observations to the Authority and the Contractor within 15 (fifteen) days of receipt of such Drawings; provided, however that in case of a Major Bridge or Structure, the aforesaid period of 15 (fifteen) days may be extended upto 30 (thirty) days. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

(ii) The Authority's Engineer shall review any revised Drawings sent to it by the Contractor and furnish its comments within 10 (ten) days of receiving such Drawings.

(iii) The Authority's Engineer shall review the Quality Assurance Plan submitted by the Contractor and shall convey its comments to the Contractor within a period of 21 (twenty-one) days stating the modifications, if any, required thereto.

(iv) The Authority's Engineer shall complete the review of the methodology proposed to be adopted by the Contractor for executing the Works, and convey its comments to the Contractor within a period of 10 (ten) days from the date of receipt of the proposed methodology from the Contractor.

(v) The Authority's Engineer shall grant written approval to the Contractor, where necessary, for interruption and diversion of the flow of traffic in the existing lane(s) of the Project Highway for purposes of maintenance during the Construction Period in accordance with the provisions of Clause 10.4.

(vi) The Authority's Engineer shall review the monthly progress report furnished by the Contractor and send its comments thereon to the Authority and the Contractor within 7 (seven) days of receipt of such report.

(vii) The Authority's Engineer shall inspect the Construction Works and the Project Highway and shall submit a monthly Inspection Report bringing out the results of inspections and the remedial action taken by the Contractor in respect of Defects or deficiencies. In particular, the Authority's Engineer shall include in its Inspection Report, the compliance of the recommendations made by the Safety Consultant.

(viii) The Authority's Engineer shall conduct the pre-construction review of manufacturer's test reports and standard samples of manufactured Materials, and such other Materials as the Authority's Engineer may require.

(ix) For determining that the Works conform to Specifications and Standards, the Authority's Engineer shall require the Contractor to carry out, or cause to be carried out, tests at such time and frequency and in such manner as specified in the Agreement and in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 4.9, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MORTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance.

(x) The Authority's Engineer shall test check at least 50 (fifty) percent of the quantity or number of tests prescribed for each category or type of test for quality control by the Contractor.

(xi) The timing of tests referred to in Paragraph 4.9, and the criteria for acceptance/ rejection of their results shall be determined by the Authority's Engineer in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that

may be carried out by the Contractor for its own quality assurance in accordance with Good Industry Practice.

(xii) In the event that results of any tests conducted under Clause 11.10 establish any Defects or deficiencies in the Works, the Authority's Engineer shall require the Contractor to carry out remedial measures.

(xiii) The Authority's Engineer may instruct the Contractor to execute any work which is urgently required for the safety of the Project Highway, whether because of an accident, unforeseeable event or otherwise; provided that in case of any work required on account of a Force Majeure Event, the provisions of Clause 21.6 shall apply.

(xiv) In the event that the Contractor fails to achieve any of the Project Milestones, the Authority's Engineer shall undertake a review of the progress of construction and identify potential delays, if any. If the Authority's Engineer shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Contractor to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Contractor, the Authority's Engineer shall review the same and send its comments to the Authority and the Contractor forthwith.

(xv) The Authority's Engineer shall obtain from the Contractor a copy of all the Contractor's quality control records and documents before the Completion Certificate is issued pursuant to Clause 12.4.

(xvi) Authority's Engineer may recommend to the Authority suspension of the whole or part of the Works if the work threatens the safety of the Users and pedestrians. After the Contractor has carried out remedial measure, the Authority's Engineer shall inspect such remedial measures forthwith and make a report to the Authority recommending whether or not the suspension hereunder may be revoked.

(xvii) In the event that the Contractor carries out any remedial measures to secure the safety of suspended works and Users, and requires the Authority's Engineer to inspect such works, the Authority's Engineer shall inspect the suspended works within 3 (three) days of receiving such notice, and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.

(xviii) The Authority's Engineer shall carry out, or cause to be carried out, all the Tests specified in Schedule-K and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 4.18 and all matters incidental thereto, the Authority's Engineer shall act under and in accordance with the provisions of Article 12 and Schedule-K.

5. Maintenance Period

(i) The Authority's Engineer shall aid and advise the Contractor in the preparation of its monthly Maintenance Programme and for this purpose carry out a joint monthly inspection with the Contractor.

(ii) The Authority's Engineer shall undertake regular inspections, at least once every month, to evaluate compliance with the Maintenance Requirements and submit a Maintenance Inspection Report to the Authority and the Contractor.

(iii) The Authority's Engineer shall specify the tests, if any, that the Contractor shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Contractor in this behalf.

(iv) In respect of any defect or deficiency referred to in Paragraph 3 of Schedule- E, the Authority's Engineer shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.

(v) The Authority's Engineer shall examine the request of the Contractor for closure of any lane(s) of the Project Highway for undertaking maintenance/repair thereof, and shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Contractor. Upon expiry of the permitted period of closure, the Authority's Engineer shall monitor the reopening of such lane(s), and in case of delay, determine the Damages payable by the Contractor to the Authority under Clause 14.5.

6 Determination of costs and time

(i) The Authority's Engineer shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.

(ii) The Authority's Engineer shall determine the period of Time Extension that is required to be determined by it under the Agreement.

(iii) The Authority's Engineer shall consult each Party in every case of determination in accordance with the provisions of Clause 18.5.

7. Payments

(i) The Authority's Engineer shall withhold payments for the affected works for which the Contractor fails to revise and resubmit the Drawings to the Authority's Engineer in accordance with the provisions of Clause 10.2.4 (d).

(ii) Authority's Engineer shall -

(a) within 10 (ten) days of receipt of the Stage Payment Statement from the Contractor pursuant to Clause 19.4, determine the amount due to the Contractor and recommend the release of 90 (ninety) percent of the amount so determined as part payment, pending issue of the Interim Payment Certificate; and

(b) within 15 (fifteen) days of the receipt of the Stage Payment Statement referred to in Clause 19.4, deliver to the Authority and the Contractor an Interim Payment

Certificate certifying the amount due and payable to the Contractor, after adjustments in accordance with the provisions of Clause 19.10.

(iii) The Authority's Engineer shall, within 15 (fifteen) days of receipt of the Monthly Maintenance Statement from the Contractor pursuant to Clause 19.6, verify the Contractor's monthly statement and certify the amount to be paid to the Contractor in accordance with the provisions of the Agreement.

(iv) The Authority's Engineer shall certify final payment within 30 (thirty) days of the receipt of the final payment statement of Maintenance in accordance with the provisions of Clause 19.16.

8. Other duties and functions

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

9 Miscellaneous

(i) A copy of all communications, comments, instructions, Drawings or Documents sent by the Authority's Engineer to the Contractor pursuant to this TOR, and a copy of all the test results with comments of the Authority's Engineer thereon, shall be furnished by the Authority's Engineer to the Authority forthwith.

(ii) The Authority's Engineer shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.

(iii) Within 90 (ninety) days of the Project Completion Date, the Authority's Engineer shall obtain a complete set of as-built Drawings, in 2 (two) hard copies and in micro film form or in such other medium as may be acceptable to the Authority, reflecting the Project Highway as actually designed, engineered and constructed, including an as-built survey illustrating the layout of the Project Highway and setback lines, if any, of the buildings and structures forming part of Project Facilities; and shall hand them over to the Authority against receipt thereof.

(iv) The Authority's Engineer, if called upon by the Authority or the Contractor or both, shall mediate and assist the Parties in arriving at an amicable settlement of any Dispute between the Parties.

(v) The Authority's Engineer shall inform the Authority and the Contractor of any event of Contractor's Default within one week of its occurrence.

SCHEDULE - O

(See Clauses 19.4.1, 19.6.1, and 19.8.1)

Forms of Payment Statements

1. Stage Payment Statement for Works

The Stage Payment Statement for Works shall state:

(a) The estimated amount for the Works executed in accordance with Clause 19.3.1 subsequent to the last claim;

(b) Amounts reflecting adjustments in price for the aforesaid claim;

(c) The estimated amount of each Change of Scope Order executed subsequent to the last claim;

(d) Amounts reflecting adjustment in price, if any, for (c) above in accordance with the provisions of Clause 13.2.3 (a);

(e) Total of (a), (b), (c) and (d) above;

(f) Deductions:

(i) Any amount to be deducted in accordance with the provisions of the Agreement except taxes;

(ii) Any amount towards deduction of taxes; and

(iii) Total of (i) and (ii) above.

(g) Net claim: (e) – (f) (iii);

(h) The amounts received by the Contractor upto the last claim:

(i) For the Works executed (excluding Change of Scope orders);
(ii) For Change of Scope Orders, and
(iii) Taxes deducted

2. Monthly Maintenance Payment Statement

The monthly Statement for Maintenance Payment shall state:

(a) the monthly payment admissible in accordance with the provisions of the agreement;

(b) the deductions for maintenance work not done;

(c) net payment for maintenance due, (a) minus (b);

(d) amounts reflecting adjustments in price under Clause 19.12; and

(e) amount towards deduction of taxes

3. Contractor's claim for Damages

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

INSURANCE

1. Insurance during Construction Period

(i) The Contractor shall effect and maintain at its own cost, from the Appointed Date till the date of issue of the last Completion Certificate, the following insurances for any loss or damage occurring on account of Non Political Event of Force Majeure, malicious act, accidental damage, explosion, fire and terrorism:

(a) insurance of Works, Plant and Materials and an additional sum of [15 (fifteen)] per cent of such replacement cost to cover any additional costs of and incidental to the rectification of loss or damage including professional fees and the cost of demolishing and removing any part of the Works and of removing debris of whatsoever nature; and

(b) Insurance for the Contractor's equipment and Documents brought onto the Site by the Contractor, for a sum sufficient to provide for their replacement at the Site.

(ii) The insurance under paragraph 1.1 (a) and (b) above shall cover the authority and the Contractor against all loss or damage from whatsoever cause arising under paragraph
1.1 other than risks which are not insurable at commercial terms.

2. Insurance for Contractor's Defects Liability

The Contractor shall effect and maintain insurance cover of not less than 15% of the Contract Price for the Works from the date of issue of the Completion Certificate until the end of the Defects Liability Period for any loss or damage for which the Contractor is liable and which arises from a cause occurring prior to the issue of the Completion Certificate. The Contractor shall also maintain

other insurances for maximum sums as may be required under the Applicable Laws and in accordance with Good Industry Practice.

3. Insurance against injury to persons and damage to property

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

The insurance cover shall be as per the applicable laws of government and procedure in vogue.

(ii) The insurance shall be extended to cover liability for all loss and damage to the Authority's property arising out of the Contractor's performance of this Agreement excluding:

(a) the Authority's right to have the construction works executed on, over, under, in or through any land, and to occupy this land for the Works; and

(b) Damage which is and unavoidable result of the Contractor's obligations to execute the Works.

4. Insurance to be in joint names

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

Schedule-Q

(See Clause 14.10)

Tests on Completion of Maintenance Period

1. Riding Quality test:

Riding quality test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be [2,200 (two thousand and two hundred only)] mm for each kilometre.

2. Visual and physical test:

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

Schedule-R

(See Clause 14.10)

Taking Over Certificate

I, ……. (Name and designation of the Authority's Representative) under and in accordance with the Agreement dated …… (the "**Agreement**"), for [construction of the ****section (km ** to km **) of

****] (the "**Project Highway**") on Engineering, Procurement and Construction (EPC) basis through .....(Name of Contractor), hereby certify that the Tests on completion of Maintenance Period in accordance with Article 14 of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement and I hereby certify that the Authority has taken over the Project highway from the Contractor on this day.....

SIGNED, SEALED AND DELIVERED

(Signature)

(Name and designation of Authority's Representative)

(Address)