Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

(i) Site of the [Two-Lane] Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.

(ii) The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.

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

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

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

Annex –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 [Two-Lane] Project Highway comprises the section of NH-53commencing from km 50+070 to km 67+495 i.e. near Pongringlong Village to near Rangkhung Village in the state of Manipur.

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

2. Land

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

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
1	50.070	50.125	12	14	
2	50.125	50.175	12	14	
3	50.175	50.225	12	14	
4	50.225	50.275	12	14	
5	50.275	50.325	12.1	14	
6	50.325	50.375	12	14	
7	50.375	50.425	12	24	
8	50.425	50.475	12.1	24	
9	50.475	50.525	12.1	24	
10	50.525	50.575	12	24	
11	50.575	50.625	12	24	
12	50.625	50.675	12	24	
13	50.675	50.725	12	24	
14	50.725	50.775	11.2	24	
15	50.775	50.825	11.1	24	
16	50.825	50.875	10.3	24	
17	50.875	50.925	10.8	24	
18	50.925	50.975	11.2	24	
19	50.975	51.025	12	24	
20	51.025	51.075	12	24	
21	51.075	51.125	12	24	
22	51.125	51.175	10.5	24	
23	51.175	51.225	11.9	24	
24	51.225	51.275	11.8	24	
25	51.275	51.325	12	14	
26	51.325	51.375	12	14	
27	51.375	51.425	12	14	
28	51.425	51.475	12	14	
29	51.475	51.525	12	14	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
30	51.525	51.575	12	14	
31	51.575	51.625	11.4	14	
32	51.625	51.675	13	14	
33	51.675	51.725	13.4	14	
34	51.725	51.775	12	14	
35	51.775	51.825	12	14	
36	51.825	51.875	15.3	24	
37	51.875	51.925	12.8	24	
38	51.925	51.975	12.2	24	
39	51.975	52.025	11.8	24	
40	52.025	52.075	12.1	24	
41	52.075	52.125	13.2	24	
42	52.125	52.175	14.2	24	
43	52.175	52.225	10.2	24	
44	52.225	52.275	13.3	24	
45	52.275	52.325	12.5	24	
46	52.325	52.375	11.8	24	
47	52.375	52.425	10.2	24	
48	52.425	52.475	10.1	24	
49	52.475	52.525	11.7	24	
50	52.525	52.575	11.2	24	
51	52.575	52.625	19.6	24	
52	52.625	52.675	18	24	
53	52.675	52.725	13.2	24	
54	52.725	52.775	10	24	
55	52.775	52.825	10.6	24	
56	52.825	52.875	11.1	24	
57	52.875	52.925	12.5	24	
58	52.925	52.975	12.2	24	
59	52.975	53.025	12	24	
60	53.025	53.075	12	24	
61	53.075	53.125	12	24	
62	53.125	53.175	12.1	24	
63	53.175	53.225	10.7	24	
64	53.225	53.275	12	24	
65	53.275	53.325	12	24	
66	53.325	53.375	14.4	24	
67	53.375	53.425	11.2	24	
68	53.425	53.475	12.3	24	
69	53.475	53.525	10.4	24	
70	53.525	53.575	11	24	
71	53.575	53.625	11.6	24	
72	53.625	53.675	18.1	24	
73	53.675	53.725	12	24	
74	53.725	53.775	12.6	24	
75	53.775	53.825	12.4	24	
76	53.825	53.875	12.2	24	
77	53.875	53.925	10.4	24	
78	53.925	53.975	12.1	24	
79	53.975	54.025	11.5	24	
80	54.025	54.075	11.3	24	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
81	54.075	54.125	11.3	24	
82	54.125	54.175	13.1	24	
83	54.175	54.225	11.4	24	
84	54.225	54.275	10.5	24	
85	54.275	54.325	11.4	24	
86	54.325	54.375	14	24	
87	54.375	54.425	12.2	24	
88	54.425	54.475	11.3	24	
89	54.475	54.525	11	24	
90	54.525	54.575	11.1	24	
91	54.575	54.625	9.5	24	
92	54.625	54.675	9.3	24	
93	54.675	54.725	12	24	
94	54.725	54.775	12	24	
95	54.775	54.825	10.6	24	
96	54.825	54.875	12	24	
97	54.875	54.925	12	14	
98	54.925	54.975	12	14	
99	54.975	55.025	12	14	
100	55.025	55.075	12	14	
101	55.075	55.125	12	14	
102	55.125	55.175	12	14	
103	55.175	55.225	12	14	
104	55.225	55.275	12	14	
105	55.275	55.325	12.7	14	
106	55.325	55.375	11.8	24	
107	55.375	55.425	12.4	24	
108	55.425	55.475	13.8	24	
109	55.475	55.525	9.6	24	
110	55.525	55.575	13	24	
111	55.575	55.625	12	24	
112	55.625	55.675	10	24	
113	55.675	55.725	11.6	24	
114	55.725	55.775	12.8	24	
115	55.775	55.825	9.6	24	
116	55.825	55.875	11.7	24	
117	55.875	55.925	10.1	24	
118	55.925	55.975	19.3	24	
119	55.975	56.025	15.1	24	
120	56.025	56.075	12.8	24	
121	56.075	56.125	10.9	24	
122	56.125	56.175	12	24	
123	56.175	56.225	15.5	24	
124	56.225	56.275	12.2	24	
125	56.275	56.325	13.2	24	
126	56.325	56.375	13.1	24	
127	56.375	56.425	12.2	24	
128	56.425	56.475	11.1	24	
129	56.475	56.525	17.3	24	
130	56.525	56.575	11.6	24	
131	56.575	56.625	11.7	24	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
132	56.625	56.675	11.1	24	
133	56.675	56.725	11.7	24	
134	56.725	56.775	15.2	24	
135	56.775	56.825	14.1	24	
136	56.825	56.875	12.3	24	
137	56.875	56.925	13.9	24	
138	56.925	56.975	10.5	24	
139	56.975	57.025	14.5	24	
140	57.025	57.075	11.6	24	
141	57.075	57.125	12.3	24	
142	57.125	57.175	11.8	24	
143	57.175	57.225	12	24	
144	57.225	57.275	12	24	
145	57.275	57.325	12	24	
146	57.325	57.375	15	24	
147	57.375	57.425	11.8	24	
148	57.425	57.475	14.3	24	
149	57.475	57.525	12.6	24	
150	57.525	57.575	18.5	24	
151	57.575	57.625	12	24	
152	57.625	57.675	11.8	24	
153	57.675	57.725	12.1	24	
154	57.725	57.775	12.4	24	
155	57.775	57.825	12.2	24	
156	57.825	57.875	13.3	24	
157	57.875	57.925	12.6	24	
158	57.925	57.975	12.2	24	
159	57.975	58.025	10.7	24	
160	58.025	58.075	13.1	24	
161	58.075	58.125	11.7	24	
162	58.125	58.175	12.6	24	
163	58.175	58.225	20.9	24	
164	58.225	58.275	12.1	24	
165	58.275	58.325	10.4	24	
166	58.325	58.375	20.5	24	
167	58.375	58.425	18.5	24	
168	58.425	58.475	16.9	24	
169	58.475	58.525	14.3	24	
170	58.525	58.575	17.9	24	
171	58.575	58.625	16.7	24	
172	58.625	58.675	15.6	24	
173	58.675	58.725	13.3	24	
174	58.725	58.775	11	24	
175	58.775	58.825	12.4	24	
176	58.825	58.875	13.4	24	
177	58.875	58.925	10.7	24	
178	58.925	58.975	19.4	24	
179	58.975	59.025	11.7	24	
180	59.025	59.075	10.9	24	
181	59.075	59.125	11.6	24	
182	59.125	59.175	11.7	24	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
183	59.175	59.225	10.9	24	
184	59.225	59.275	11.9	24	
185	59.275	59.325	12.5	24	
186	59.325	59.375	11.8	24	
187	59.375	59.425	11.5	24	
188	59.425	59.475	10.5	24	
189	59.475	59.525	12	24	
190	59.525	59.575	12.1	24	
191	59.575	59.625	14.5	24	
192	59.625	59.675	11.9	24	
193	59.675	59.725	10.5	24	
194	59.725	59.775	12	24	
195	59.775	59.825	11.4	24	
196	59.825	59.875	11.8	24	
197	59.875	59.925	14.6	24	
198	59.925	59.975	12.3	24	
199	59.975	60.025	11	24	
200	60.025	60.075	12	24	
201	60.075	60.125	12	14	
202	60.125	60.175	12	14	
203	60.175	60.225	12	14	
204	60.225	60.275	10.6	14	
205	60.275	60.325	11.6	14	
206	60.325	60.375	15.8	14	
207	60.375	60.425	15	14	
208	60.425	60.475	13.8	14	
209	60.475	60.525	11.2	14	
210	60.525	60.575	10.3	14	
211	60.575	60.625	12.7	14	
212	60.625	60.675	23.4	14	
213	60.675	60.725	12	14	
214	60.725	60.775	12	14	
215	60.775	60.825	12	14	
216	60.825	60.875	12	14	
217	60.875	60.925	12	14	
218	60.925	60.975	12	14	
219	60.975	61.025	12	14	
220	61.025	61.075	12	14	
221	61.075	61.125	12	14	
222	61.125	61.175	12	14	
223	61.175	61.225	12	14	
224	61.225	61.275	12	14	
225	61.275	61.325	12	14	
226	61.325	61.375	12.4	14	
227	61.375	61.425	12	14	
228	61.425	61.475	12	14	
229	61.475	61.525	12	14	
230	61.525	61.575	12	14	
231	61.575	61.625	12	14	
232	61.625	61.675	12	14	
233	61.675	61.725	12	14	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
234	61.725	61.775	12	14	
235	61.775	61.825	12	14	
236	61.825	61.875	12	14	
237	61.875	61.925	12	14	
238	61.925	61.975	12	14	
239	61.975	62.025	12	14	
240	62.025	62.075	12	14	
241	62.075	62.125	12	14	
242	62.125	62.175	12	14	
243	62.175	62.225	12	14	
244	62.225	62.275	12	14	
245	62.275	62.325	12	14	
246	62.325	62.375	12	14	
247	62.375	62.425	12	14	
248	62.425	62.475	12	14	
249	62.475	62.525	12	14	
250	62.525	62.575	12	14	
251	62.575	62.625	12	14	
252	62.625	62.675	12	14	
253	62.675	62.725	12	14	
254	62.725	62.775	12	14	
255	62.775	62.825	12	14	
256	62.825	62.875	12	14	
257	62.875	62.925	12	14	
258	62.925	62.975	12	14	
259	62.975	63.025	12	14	
260	63.025	63.075	12	14	
261	63.075	63.125	12	14	
262	63.125	63.175	12	14	
263	63.175	63.225	12.2	14	
264	63.225	63.275	12	14	
265	63.275	63.325	12	14	
266	63.325	63.375	12	14	
267	63.375	63.425	12	24	
268	63.425	63.475	12	24	
269	63.475	63.525	12	24	
270	63.525	63.575	12	24	
271	63.575	63.625	12	24	
272	63.625	63.675	11.2	24	
273	63.675	63.725	11.3	24	
274	63.725	63.775	11.3	24	
275	63.775	63.825	12.2	24	
276	63.825	63.875	14.1	24	
277	63.875	63.925	13.3	24	
278	63.925	63.975	12.3	24	
279	63.975	64.025	12	24	
280	64.025	64.075	12	24	
281	64.075	64.125	11.1	24	
282	64.125	64.175	12.4	24	
283	64.175	64.225	11.6	24	
284	64.225	64.275	12.6	24	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
285	64.275	64.325	14.2	24	
286	64.325	64.375	10.1	24	
287	64.375	64.425	12	24	
288	64.425	64.475	11.2	24	
289	64.475	64.525	11.9	24	
290	64.525	64.575	12.5	24	
291	64.575	64.625	12	24	
292	64.625	64.675	12.8	24	
293	64.675	64.725	12	14	
294	64.725	64.775	12	14	
295	64.775	64.825	12	14	
296	64.825	64.875	12	14	
297	64.875	64.925	12	14	
298	64.925	64.975	12	14	
299	64.975	65.025	12	14	
300	65.025	65.075	12	14	
301	65.075	65.125	12.2	14	
302	65.125	65.175	12	14	
303	65.175	65.225	12	14	
304	65.225	65.275	12	14	
305	65.275	65.325	12.1	14	
306	65.325	65.375	12	14	
307	65.375	65.425	12	14	
308	65.425	65.475	12	14	
309	65.475	65.525	12	14	
310	65.525	65.575	12	14	
311	65.575	65.625	12.2	24	
312	65.625	65.675	12	24	
313	65.675	65.725	12	24	
314	65.725	65.775	12	24	
315	65.775	65.825	12	24	
316	65.825	65.875	12	24	
317	65.875	65.925	12	24	
318	65.925	65.975	12	24	
319	65.975	66.025	12	24	
320	66.025	66.075	12	24	
321	66.075	66.125	12	24	
322	66.125	66.175	12	24	
323	66.175	66.225	12	24	
324	66.225	66.275	12	24	
325	66.275	66.325	12	24	
326	66.325	66.375	12	24	
327	66.375	66.425	12	24	
328	66.425	66.475	12	24	
329	66.475	66.525	12	24	
330	66.525	66.575	12	24	
331	66.575	66.625	12	24	
332	66.625	66.675	12	24	
333	66.675	66.725	13.3	24	
334	66.725	66.775	11.7	24	
335	66.775	66.825	12.4	24	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
336	66.825	66.875	10.7	24	
337	66.875	66.925	11.4	24	
338	66.925	66.975	14.4	24	
339	66.975	67.025	11.1	24	
340	67.025	67.075	11.6	24	
341	67.075	67.125	12.4	24	
342	67.125	67.175	13.7	24	
343	67.175	67.225	12.6	24	
344	67.225	67.275	12	24	
345	67.275	67.325	12	24	
346	67.325	67.375	12	24	
347	67.375	67.425	12	24	
348	67.425	67.475	12	24	

3. Carriageway

The present carriageway of the Project Highway is Two Lane from km 50+070 to km 67+495. The type of the existing pavement is [flexible].

4. Major Bridges

The Site includes the following Major Bridges: -

S. No.	Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub- structure	Super-structure		
1	62+565	Open	Wall	RCC T-BEAM GIRDER	2 X 43.00M	10.9
Nil						

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

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

S. No.	Chainage (km)	TypeofStructure		No.ofSpans withspan length(m)	Width (m)	ROB/ RUB
		Foundation	Superstructure			
Nil						

6. Grade separators

The Site includes the followinggrade separators:

S. No.	Chainage (km)	TypeofStructure		No.ofSpanswith spanlength(m)	Width (m)
		Foundation	Superstructure		
Nil					

7. Minorbridges

The Siteincludes the following minor bridges:

Sl. No.	Survey Chainage (Km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub-structure	Super- structure		

1	51+425	Open	Wall	PSC BOX GIRDER	1X40.3M	8.5
2	53+215	Open	Wall	RCC SLAB BRIDGE	1X10.0M	10.8
3	55+243	Open	Wall	RCC SLAB BRIDGE	1X10.0M	10
4	61+145	Open	Wall	RCC SLAB BRIDGE	1X7.0M	7.7
5	61+342	Open	Wall	RCC SLAB BRIDGE	1X7.0M	10.2
6	66+290	Open	Wall	RCC SLAB BRIDGE	1X6.3M	11

8. Railway level crossings

The Site includes the following railway level crossings:

S. No.	Location(km)	Remarks
Nil		

9. Under passes(vehicular, non- vehicular)

The Site includes the following underpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
1	50.236	HP	1 X 0.90 Dia	12.5
2	50.527	R.C.C SLAB	1 X 4.00m	12.5
3	50.551	HP	1X1.20m	12.4
4	50.671	R.C.C SLAB	1 X 2.14m	18.6
5	51.079	HP	1 X 0.60 Dia	16.6
6	51.159	HP	1 X 0.90 Dia	11.3
7	51.387	HP	1 X 1.50 Dia	8.83
8	51.623	HP	1 X 0.90 Dia	10.1
9	51.686	HP	1 X 0.90 Dia	11.55
10	51.817	HP	1 X 0.90 Dia	11.55
11	51.994	HP	1 X 0.60 Dia	10
12	52.097	HP	1 X 0.90 Dia	7.5
13	52.198	R.C.C SLAB	1 X 1.48m	9.3
14	52.512	HP	1 X 0.60 Dia	15
15	52.682	R.C.C SLAB	1 X 2.50m	11.6
16	52.875	R.C.C SLAB	1 X 2.00m	12
17	53.015	R.C.C SLAB	1 X 1.19 Dia	9.6
18	53.444	HP	1 X 0.90 Dia	10
19	53.757	HP	1 X 0.60 Dia	13
20	53.821	HP	1 X 0.60 Dia	12.4
21	53.944	HP	1 X 1.00 Dia	12.4
22	54.160	HP	1 X 2.98m	11.3
23	54.531	HP	1 X 1.20 Dia	15.2
24	54.664	HP	1 X 1.00 Dia	15
25	54.737	HP	1 X 0.90 Dia	10
26	54.810	HP	1 X 0.90 Dia	10
27	54.855	HP	1 X 1.00 Dia	12

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
28	55.301	HP	1 X 1.20 Dia	13
29	55.505	HP	1 X 1.00 Dia	14
30	55.655	HP	1 X 1.00 Dia	11.3
31	55.915	R.C.C SLAB	1X2.48m	9.7
32	56.097	R.C.C SLAB	1X1.80m	10.8
33	56.219	HP	1 X 0.90 Dia	12
34	56.299	HP	1 X 0.90 Dia	15.8
35	56.501	HP	1 X 0.90 Dia	12.8
36	56.656	HP	2 X 0.60 Dia	13.7
37	56.831	HP	1 X 0.60 Dia	8
38	57.104	HP	1 X 0.80 Dia	12.5
39	57.124	HP	1 X 0.60 Dia	14.5
40	57.619	HP	1 X 1.50 Dia	9
41	57.754	HP	1 X 0.90 Dia	10
42	58.203	HP	1 X 1.00 Dia	11.3
43	58.310	HP	1 X 0.60 Dia	15.2
44	58.445	HP	1 X 1.20 Dia	15
45	58.653	HP	1 X 1.20 Dia	10
46	58.781	HP	1 X 0.80 Dia	12
47	59.061	HP	1 X 1.20 Dia	13
48	59.195	HP	1 X 1.00 Dia	14
49	59.527	HP	1 X 1.20 Dia	11.3
50	59.663	HP	1 X 0.60 Dia	9.7
51	59.706	R.C.C SLAB	1X1.50m	9.7
52	59.785	HP	1 X 0.60 Dia	10.8
53	60.183	HP	1 X 0.60 Dia	12
54	60.264	HP	1 X 1.00 Dia	15.8
55	60.345	R.C.C SLAB	1X2.0m	15.8
56	60.759	HP	1 X 0.60 Dia	12.8
57	60.872	HP	2 X 0.60 Dia	13.7
58	60.959	HP	1 X 0.60 Dia	8
59	61.044	R.C.C SLAB	1X5.10m	12.5
60	61.272	HP	1 X 0.40 Dia	12.5
61	61.367	HP	1 X 0.60 Dia	14.5
62	61.554	HP	1 X 0.60 Dia	9
63	61.640	HP	1 X 0.90 Dia	10
64	61.895	HP	1 X 0.90 Dia	12
65	62.136	Box	1X2.50m	15.8
66	63.234	Box	1X4.70m	12.8
67	63.419	HP	1 X 0.64 Dia	13.7
68	63.866	HP	1 X 0.90 Dia	8
69	64.206	HP	1 X 0.90 Dia	12.5
70	64.382	Box	3.20X4.20m	14.5
71	64.469	R.C.C SLAB	1X4.45m	9
72	64.744	R.C.C SLAB	1X4.50m	10
73	64.851	Box	2.50X1.70m	11.3
74	64.944	HP	1 X 1.00 Dia	15.2
75	65.120	R.C.C SLAB	1X5.00m	15
76	65.219	HP	1 X 0.90 Dia	10
77	65.318	R.C.C SLAB	1X4.10m	12
78	65.450	R.C.C SLAB	1X3.90m	13

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
79	65.503	R.C.C SLAB	1X3.70m	14
80	66.006	HP	1 X 0.90 Dia	14
81	66.148	R.C.C SLAB	1X1.80m	11.3
82	66.219	R.C.C SLAB	1X1.20m	11.3
83	66.426	R.C.C SLAB	1X3.10m	10.8
84	66.599	HP	1 X 0.80 Dia	12
85	66.739	HP	1 X 0.90 Dia	15.8
86	66.812	R.C.C SLAB	1X2.60m	12.8
87	66.935	HP	1 X 0.60 Dia	13.7
88	67.197	R.C.C SLAB	1X1.54m	8
89	67.398	R.C.C SLAB	1X1.50m	12.5
90	67.450	R.C.C SLAB	1X1.40m	14.5

11. Bus bays

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

S. No.	Chainage (km)	Length (m)	Left Hand Side	Right HandSide
Nil				

12. Truck Lay byes

The details of truck lay byes are as follows:

S. No.	Chainage (km)	Length (m)	Left Hand Side	Right HandSide
Nil				

13. Roadsidedrains

The details of the roadside drains are as follows:

Sl. No.	Location		Length (km)	Type	
	From km	To km		Masonry/cc (Pucca)	Earthen (Kutcha)
1	50.070	50.360	0.290		Kachha (Single Side)
2	50.040	50.825	0.785		Kachha (Single Side)
3	51.075	51.175	0.100		Kachha (Single Side)
4	51.175	51.400	0.225	Pucca (Single Side)	
5	51.500	51.625	0.125		Kachha (Single Side)
6	51.680	51.775	0.095	Pucca (Single Side)	
7	51.775	51.875	0.100		Kachha (Single Side)
8	51.875	52.325	0.450	Pucca (Single Side)	
9	52.400	52.675	0.275		Kachha (Single Side)
10	52.775	52.825	0.050		Kachha (Single Side)
11	52.825	53.000	0.175	Pucca (Single Side)	
12	53.050	53.200	0.150		Kachha (Single Side)
13	53.275	53.900	0.625		Kachha (Single Side)
14	54.125	54.940	0.815		Kachha (Single Side)
15	54.940	55.230	0.290		Kachha (Single Side)
16	55.230	55.875	0.645		Kachha (Single Side)
17	55.875	55.925	0.050	Pucca (Single Side)	
18	55.925	56.675	0.750		Kachha (Single Side)
19	56.775	60.075	3.300		Kachha (Single Side)
20	60.225	61.250	1.025		Kachha (Single Side)

Sl. No.	Location		Length (km)	Type	
	From km	To km		Masonry/cc (Pucca)	Earthen (Kutcha)
21	61.400	62.390	0.990		Kachha (Single Side)
22	62.390	62.475	0.085	Pucca (Single Side)	
23	62.725	62.870	0.145	Pucca (Single Side)	
24	62.870	63.225	0.355		Kachha (Single Side)
25	63.225	63.500	0.275	Pucca (Single Side)	
26	63.500	63.625	0.125		Kachha (Single Side)
27	63.825	64.075	0.250		Kachha (Single Side)
28	64.175	65.050	0.875		Kachha (Single Side)
29	65.050	65.100	0.050	Pucca (Single Side)	
30	65.140	65.225	0.085		Kachha (Single Side)
31	65.225	65.275	0.050	Pucca (Single Side)	
32	65.275	65.875	0.600		Kachha (Single Side)
33	65.875	66.250	0.375	Pucca (Single Side)	
34	66.425	66.575	0.150	Pucca (Single Side)	
35	66.575	66.675	0.100		Kachha (Single Side)
36	66.675	66.925	0.250	Pucca (Single Side)	
37	67.275	67.495	0.220	Pucca (Single Side)	

14. Majorjunctions

The details ofmajor junctions are as follows:

S. No.	Location		At grade	Separated	Category of Cross Road			
	From km	to km			NH	SH	MDR	Others
Nil								

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

15. Minor junctions

The details of the minor junctions are as follows:

Sl. No.	Location		Type of intersection	
	From Km	To Km	T-Junction	Cross Road
1	51.375		Y	3-Legged
2	51.464		Y	3-Legged
3	51.483		T	3-Legged
4	52.340		Y	3-Legged
5	55.975		Y	3-Legged
6	57.197		Y	3-Legged
7	58.013		T	3-Legged
8	58.766		Y	3-Legged
9	60.769		Y	3-Legged
10	61.333		Y	3-Legged
11	61.356		Y	3-Legged
12	61.602		T	3-Legged
13	62.056		Y	3-Legged
14	62.147		X	4-Legged
15	62.417		Y	3-Legged
16	62.467		Y	3-Legged
17	62.628		Y	3-Legged

Sl. No.	Location		Type of intersection	
	From Km	To Km	T-Junction	Cross Road
18	62.837		Y	3-Legged
19	63.174		Y	3-Legged
20	63.243		Y	3-Legged
21	63.275		Y	3-Legged
22	64.652		T	3-Legged
23	64.729		T	3-Legged
24	64.825		Y	3-Legged

16. Bypasses

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

Sl. No.	Name of bypass (town)	Chainage(km)From km to km	Length (in Km)
Nil			

17. Other structures

[Provide details of other structures, if any.]

(As per Clause 8.3 (i))

(Schedule-A)

Dates for providing Right of Way of Construction Zone

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

The Construction of Project Highway will be implemented as per Manual, details of which are already given in Article-2 of Annexure – I of Schedule.

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:

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

(ii) TrafficSignageplanoftheProjectHighwayshowingnumbers&locationoftraffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signageplanasindicatedinAnnex-IIIbasedonsite/designrequirementasperthe relevant specifications/IRC Codes/Manual.

Annex – IV

(Schedule-A)

Environment Clearances

The following environment clearances have been obtained: [***]

The following environment clearances are awaited:[***]

Environmental Clearances are not required for the project.

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 augmentation]

[Rehabilitation and augmentation] shall include [Two-Laning and strengthening] 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-Lanning]

[Note: Description of the Project Highway shall be given by the Authority in detail together with explanatory drawings (where necessary) to explain the Authority's requirements precisely in order to avoid subsequent changes in the Scope of the Project. The particulars that must be specified in this Schedule-B are listed below as per the requirements of the Manual of Specifications and Standards for [Two Laning of Highways (IRC: SP: 73-2018)], referred to as the Manual. If any standards, specifications or details are not given in the Manual, the minimum design/construction requirements shall be specified in this Schedule. In addition to these particulars, all other essential project specific details, as required, should be provided in order to define the Scope of the Project clearly and precisely.]

1. Widening of the Existing Highway

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

(ii) Width of Carriageway

(a) Two- Lanning [with] paved shoulders shall be undertaken. The paved carriageway shall be [7(seven) m]wide.

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

Sl. No.	Built-up stretch (Township)	Location		Width (m)	Typical Cross Section (Refer to Manual)	Remarks
1	Pongringlong	48+970	49+300	7	As per attached TCS drawing	7 m Carriageway
2	Tupul	50+330	50+650	7	As per attached TCS drawing	7 m Carriageway
3	Nanduangjang	53+950	54+250	7	As per attached TCS drawing	7 m Carriageway
4	Longmai IV	59+000	59+100	7	As per attached TCS drawing	7 m Carriageway
5	Longmai V	59+700	60+000	7	As per attached TCS drawing	7 m Carriageway
6	Noney	60+150	60+350	7	As per attached TCS drawing	7 m Carriageway
7	Noney Market	60+450	60+650	7	As per attached TCS drawing	7 m Carriageway
8	Noney Market	60+850	61+030	7	As per attached TCS drawing	7 m Carriageway
9	Khumji	61+030	61+820	7	As per attached TCS	7 m Carriageway

	Market				drawing	
10	Khumji	62+470	62+530	7	As per attached TCS drawing	7 m Carriageway
11	Khumji	63+640	63+930	7	As per attached TCS drawing	7 m Carriageway
12	Khumji	64+000	64+300	7	As per attached TCS drawing	7 m Carriageway

(b) Except as otherwise provided in this Agreement the width of the paved carriageway and cross-sectional features shall conform to paragraph 1.1above.

2. Geometric Design and General Features

(i) General

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

(ii) Design speed

For Mountainous terrain design speed shall be the minimum design speed of 40-60 km/hr and for sharp curve and hair pin bend locations speed reduces up to 30kmph & 20 kmph, respectively.

(iii) Improvement of the existing road geometrics

The stretches where design speed reduces below 40kmph are summarized below:

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
1	49+009 to 49+015	Sharp Bend	Design Speed = 30 Kmph
2	49+063 to 49+073	Sharp Bend	Design Speed = 30 Kmph
3	49+141 to 49+154	Sharp Bend	Design Speed = 30 Kmph
4	49+202 to 49+216	Sharp Bend	Design Speed = 30 Kmph
5	49+264 to 49+273	Sharp Bend	Design Speed = 30 Kmph
6	49+336 to 49+370	Sharp Bend	Design Speed = 20 Kmph
7	49+403 to 49+423	Sharp Bend	Design Speed = 20 Kmph
8	49+497 to 49+513	Sharp Bend	Design Speed = 30 Kmph
9	49+563 to 49+603	Sharp Bend	Design Speed = 30 Kmph
10	49+646 to 49+685	Sharp Bend	Design Speed = 30 Kmph
11	49+860 to 49+881	Sharp Bend	Design Speed = 20 Kmph
12	49+917 to 49+931	Sharp Bend	Design Speed = 20 Kmph
13	49+962 to 49+981	Sharp Bend	Design Speed = 20 Kmph
14	50+015 to 50+027	Sharp Bend	Design Speed = 20 Kmph
15	50+148 to 50+227	Sharp Bend	Design Speed = 30 Kmph
16	50+330 to 50+354	Sharp Bend	Design Speed = 20 Kmph
17	51+923 to 51+947	Sharp Bend	Design Speed = 30 Kmph
18	52+005 to 52+031	Sharp Bend	Design Speed = 30 Kmph
19	52+080 to 52+116	Sharp Bend	Design Speed = 30 Kmph
20	52+494 to 52+532	Sharp Bend	Design Speed = 20 Kmph
21	52+576 to 52+612	Sharp Bend	Design Speed = 20 Kmph
22	52+716 to 52+725	Sharp Bend	Design Speed = 30 Kmph
23	52+771 to 52+778	Sharp Bend	Design Speed = 30 Kmph
24	53+494 to 53+517	Sharp Bend	Design Speed = 30 Kmph
25	53+563 to 53+591	Sharp Bend	Design Speed = 30 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
26	53+657 to 53+663	Sharp Bend	Design Speed = 30 Kmph
27	54+701 to 54+711	Sharp Bend	Design Speed = 30 Kmph
28	54+792 to 54+811	Sharp Bend	Design Speed = 30 Kmph
29	54+851 to 54+881	Sharp Bend	Design Speed = 30 Kmph
30	55+225 to 55+235	Sharp Bend	Design Speed = 30 Kmph
31	55+272 to 55+282	Sharp Bend	Design Speed = 30 Kmph
32	55+328 to 55+336	Sharp Bend	Design Speed = 30 Kmph
33	55+433 to 55+484	Sharp Bend	Design Speed = 30 Kmph
34	55+545 to 55+568	Sharp Bend	Design Speed = 30 Kmph
35	55+888 to 55+895	Sharp Bend	Design Speed = 30 Kmph
36	55+947 to 55+956	Sharp Bend	Design Speed = 30 Kmph
37	56+229 to 56+249	Sharp Bend	Design Speed = 30 Kmph
38	56+307 to 56+321	Sharp Bend	Design Speed = 30 Kmph
39	56+392 to 56+405	Sharp Bend	Design Speed = 30 Kmph
40	56+469 to 56+485	Sharp Bend	Design Speed = 30 Kmph
41	57+419 to 57+424	Sharp Bend	Design Speed = 30 Kmph
42	57+475 to 57+480	Sharp Bend	Design Speed = 30 Kmph
43	58+629 to 58+635	Sharp Bend	Design Speed = 30 Kmph
44	58+681 to 58+688	Sharp Bend	Design Speed = 30 Kmph
45	58+742 to 58+760	Sharp Bend	Design Speed = 30 Kmph
46	60+053 to 60+060	Sharp Bend	Design Speed = 30 Kmph
47	60+125 to 60+139	Sharp Bend	Design Speed = 30 Kmph
48	60+962 to 61+077	Sharp Bend	Design Speed = 30 Kmph
49	61+226 to 61+268	Sharp Bend	Design Speed = 30 Kmph
50	61+436 to 61+547	Sharp Bend	Design Speed = 30 Kmph
51	61+580 to 61+616	Sharp Bend	Design Speed = 30 Kmph
52	61+977 to 62+023	Sharp Bend	Design Speed = 30 Kmph
53	62+124 to 62+143	Sharp Bend	Design Speed = 30 Kmph
54	62+214 to 62+283	Sharp Bend	Design Speed = 30 Kmph
55	62+329 to 62+336	Sharp Bend	Design Speed = 30 Kmph
56	62+582 to 62+594	Sharp Bend	Design Speed = 30 Kmph
57	62+636 to 62+653	Sharp Bend	Design Speed = 30 Kmph
58	63+174 to 63+212	Sharp Bend	Design Speed = 30 Kmph
59	63+275 to 63+364	Sharp Bend	Design Speed = 30 Kmph
60	63+430 to 63+453	Sharp Bend	Design Speed = 30 Kmph
61	63+575 to 63+718	Sharp Bend	Design Speed = 30 Kmph
62	63+788 to 63+827	Sharp Bend	Design Speed = 30 Kmph
63	63+886 to 63+951	Sharp Bend	Design Speed = 30 Kmph
64	64+565 to 64+584	Sharp Bend	Design Speed = 30 Kmph
65	64+635 to 64+642	Sharp Bend	Design Speed = 30 Kmph
66	65+141 to 65+151	Sharp Bend	Design Speed = 30 Kmph
67	65+213 to 65+242	Sharp Bend	Design Speed = 30 Kmph
68	65+304 to 65+353	Sharp Bend	Design Speed = 30 Kmph
69	65+794 to 65+826	Sharp Bend	Design Speed = 30 Kmph

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

(iv) Right of Way

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

(v) Type of shoulders

[Refer to provision of relevant Manual and specify]

(a) Inbuilt-up sections. footpaths/fully paved shoulders shall be provided in the following stretches:

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/footpaths	Reference to cross section
1	48+970 to 49+300	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
2	50+330 to 50+650	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
3	53+950 to 54+250	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
4	59+000 to 59+100	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
5	59+700 to 60+000	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
6	60+150 to 60+350	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
7	60+450 to 60+650	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
8	60+850 to 61+030	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
9	61+030 to 61+820	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
10	62+470 to 62+530	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
11	63+640 to 63+930	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
12	64+000 to 64+300	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7

(b) Earthen shoulders of 1.0 m width shall be provided with selected earth wherever applicable as per TCS drawing.

(c) Design and specifications of paved shoulders and granular material shall conform to the requirements specified in the relevant Manual.

(vi) Lateral and verticalclearances at underpasses

(a) Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per requirements specified in the relevant Manual.

(b) Lateral clearance: The width of the opening at the underpasses shall be as follows:

Sl.No.	Location (Chainage) (from km to km)	Span/ opening(m)	Remarks
Nil			

(vii) Lateral and vertical clearances at overpasses

(a) Lateralandverticalclearancesatoverpassesshallbeasperrequirementsspecifiedinthe relevant Manual.

(b) Lateralclearance:Thewidthoftheopeningattheoverpasses shallbeas follows:

Sl. No.	Location (Chainage) (from km to km)	Span/Opening(m)	Remarks
Nil			

(viii) Service roads

Serviceroadsshallbeconstructedatthelocationsandforthelengthsindicatedbelow: [Refer requirementsspecifiedinthe relevant Manual]

Sl. No.	Location of service road(fromkmto km)	Righthand side (RHS)/Left hand side(LHS)/orBoth sides	Length(km)of service road
Nil			

(ix) Grade separatedstructures

(a) Gradeseparatedstructuresshallbeprovidedasperprovisionofthe Manual. The requisite isgivenbelow:

[Refer to requirementsspecifiedinthe relevant Manual]

Sl. No.	Location of Structure (VUP)	Length (m)	Number andlength of spans	Approach gradient	Remarks. if any
Nil					

(b) In thecase ofgradeseparated structuresthe type ofstructure andthe level of theProjectHighwayandthecross-roads shallbeasfollows:[Referto provisionofthe Manual andspecifythetypeofvehicularunderpass/ overpassstructureandwhetherthecrossroadistobecarriedattheexisting Level.raisedorlowered]

Sl. No.	Location	Type of structure Length(m)	Cross road at			Remarks.if any
			Existing Level	Raised Level	Lowered Level	
Nil						

(x) Cattle and pedestrian underpass /overpass

Cattle andpedestrian underpass/overpass shall be constructed as follows: [Refer to provision of the relevant Manualand specify the requirements of cattleand pedestrian underpass/overpass]

Sl.No.	Location	Typeofcrossing
Nil		

(xi) Typical cross-sections of the Project Highway

[Give typical cross-sections of the Project Highway by reference to the Manual]As per attached Drawings.

TCS Number	TCS Description	Length (km)
TCS-1	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Built up area with Both side covered drain cum footpath in plain terrain (Reconstruction)	0.000
TCS-2	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area in Plain Terrain (Reconstruction)	0.000
TCS-2A	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area in Hilly Terrain (Reconstruction)	0.000
TCS-3	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area with trapezoidal open drain on hill side and earthen shoulder on valley side (Reconstruction)	12.945
TCS-3A	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area with trapezoidal open drain on hill side and earthen shoulder on valley side (New Construction)	0.200
TCS-4	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on Valley Side And Trapezoidal Open drain on Hill side (Reconstruction)	0.225
TCS-4A	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on Valley Side And Trapezoidal Open drain on Hill side (New Construction)	0.000
TCS-5	Typical Cross Section of Two Lane Carriageway In Rural Area With Breast Wall on Hill Side And Earthen Shoulder on Valley side (Reconstruction)	0.250
TCS-6	Typical Cross Section of Two Lane Carriageway In Built Up Area With Both Side Footpath Cum RCC Rectangular Covered Drain in Hilly Terrain (Reconstruction)	1.410
TCS-7	Typical Cross Section of Two Lane Carriageway In Built-Up Area With Breast Wall on Hill Side And Footpath Cum RCC Rectangular Covered Drain on Valley side (Reconstruction)	1.960
TCS-8	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on One Side And Earthen Shoulder on other side (Reconstruction)	0.000

TCS-9A	Typical Cross Section of Two Lane Carriageway In Rural Area With Breast Wall on both sides (New Construction)	0.000
TCS-10	Typical Cross Section of Two Lane Carriageway In Rural Area With Cut and Cover Tunnel and Retaining Wall on Valley side (New Construction)	0.000
TCS-11	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on Valley Side And Breast Wall on Hill side (Reconstruction)	0.150
Total =		**17.140**

Design Chainage (m)		**Length of CD (m)**	**Net Length (m)**	**TCS No.**
From	**To**			
48970	49300	3.96	326.04	TCS-7
49300	50330	18.12	1011.88	TCS-3
50330	50650	60.84	259.16	TCS-6
50650	52625	43.16	1931.84	TCS-3
52625	52675		50	TCS-11
52675	53950	26.3	1248.7	TCS-3
53950	54250	10	290	TCS-7
54250	55925	29.32	1645.68	TCS-3
55925	55975		50	TCS-4
55975	59000	50.94	2974.06	TCS-3
59000	59100		100	TCS-7
59100	59700	13.1	586.9	TCS-3
59700	60000	12.72	287.28	TCS-6
60000	60150	8	142	TCS-3
60150	60350	13.2	186.8	TCS-7
60350	60450		100	TCS-3
60450	60650	5.3	194.7	TCS-7
60650	60850	2.6	197.4	TCS-3
60850	61030		180	TCS-7
61030	61820	89.84	700.16	TCS-6
61820	62020	2.6	197.4	TCS-3
62020	62070		50	TCS-4
62070	62470	10.1	389.9	TCS-3
62470	62530		60	TCS-7
62530	62650		120	TCS-3
62650	62700		50	TCS-11
62700	63220	5.2	514.8	TCS-3
63220	63270		50	TCS-3A
63270	63640	11.06	358.94	TCS-3
63640	63930	12.84	277.16	TCS-7
63930	64000		70	TCS-4
64000	64300	13.74	286.26	TCS-7
64300	64350		50	TCS-3A
64350	64450	10.12	89.88	TCS-3
64450	64600		150	TCS-5
64600	64650		50	TCS-3A
64650	64700	2.6	47.4	TCS-5
64700	65415	19.64	695.36	TCS-3
65415	65465		50	TCS-3A
65465	65520	2.7	52.3	TCS-3
65520	65570		50	TCS-11
65570	65620	2.6	47.4	TCS-5
65620	65675		55	TCS-4
65675	66110	14.34	420.66	TCS-3

Design Chainage (m)		Length of CD (m)	Net Length (m)	TCS No.
From	To			
Total Length =		**495**	**16645**	

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.

[Refer to the provision of the Manual and specify the requirements. Explain where necessary with drawings/sketches/general arrangement]

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

(i) At-grade intersections

Major Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features	Remarks
Nil				

Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	50.398	Y-Type	3-Legged
2	50.500	Y-Type	3-Legged
3	50.517	T-Type	3-Legged
4	51.375	Y-Type	3-Legged
5	54.968	Y-Type	3-Legged
6	56.180	Y-Type	3-Legged
7	56.979	T-Type	3-Legged
8	57.727	Y-Type	3-Legged
9	59.708	Y-Type	3-Legged
10	60.270	Y-Type	3-Legged
11	60.294	Y-Type	3-Legged
12	60.540	T-Type	3-Legged
13	60.992	Y-Type	3-Legged
14	61.084	X-Type	4-Legged
15	61.354	Y-Type	3-Legged
16	61.404	Y-Type	3-Legged
17	61.567	Y-Type	3-Legged
18	61.777	Y-Type	3-Legged
19	62.110	Y-Type	3-Legged
20	62.181	Y-Type	3-Legged
21	62.212	Y-Type	3-Legged
22	63.566	T-Type	3-Legged
23	63.640	T-Type	3-Legged
24	63.730	Y-Type	3-Legged

(ii) Grade separatedintersection with/without ramps

Sl. No.	Location	Salient features	Minimum length of viaduct to be provided	Road to be carried over/under the structures
Nil				

4. Road Embankment and Cut Section

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

(ii) Raising of the existing road[Refer to provision of the relevant Manual and specify sections to be raised]

The existing road shall be raised in the following sections:

Sl. No.	Section (from km to km)	Length (km)	Extent of raising [Top of finished road level]
Nil			

5. Pavement Design

(i) Pavement design shall be carried out in accordance with provision of the relevant manual.

(ii) Type of pavement

Flexible Pavement

(iii) Design requirements

[Refer to provision of the relevant Manual and specify design requirements and strategy]

(a) 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 of20 years. Stage construction shall not be permitted.

(b) Design Traffic

Notwithstanding anything to the contrary contained in this Agreement or the Manual. The Contractor shall design the pavement for design traffic of 20msa.

(iv) Reconstruction of stretches.

[Refer to provision of the relevant Manual and specify the stretches if any to be reconstructed.]

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

SL NO.	Stretch from Km to Km	Remarks	TCS Type
1	48+970 to 49+300	Reconstruction	TCS-7
2	49+300 to 50+330	Reconstruction	TCS-3
3	50+330 to 50+650	Reconstruction	TCS-6
4	50+650 to 52+625	Reconstruction	TCS-3
5	52+625 to 52+675	Reconstruction	TCS-11
6	52+675 to 53+950	Reconstruction	TCS-3
7	53+950 to 54+250	Reconstruction	TCS-7
8	54+250 to 55+925	Reconstruction	TCS-3

SL NO.	Stretch from Km to Km	Remarks	TCS Type
9	55+925 to 55+975	Reconstruction	TCS-4
10	55+975 to 59+000	Reconstruction	TCS-3
11	59+000 to 59+100	Reconstruction	TCS-7
12	59+100 to 59+700	Reconstruction	TCS-3
13	59+700 to 60+000	Reconstruction	TCS-6
14	60+000 to 60+150	Reconstruction	TCS-3
15	60+150 to 60+350	Reconstruction	TCS-7
16	60+350 to 60+450	Reconstruction	TCS-3
17	60+450 to 60+650	Reconstruction	TCS-7
18	60+650 to 60+850	Reconstruction	TCS-3
19	60+850 to 61+030	Reconstruction	TCS-7
20	61+030 to 61+820	Reconstruction	TCS-6
21	61+820 to 62+020	Reconstruction	TCS-3
22	62+020 to 62+070	Reconstruction	TCS-4
23	62+070 to 62+470	Reconstruction	TCS-3
24	62+470 to 62+530	Reconstruction	TCS-7
25	62+530 to 62+650	Reconstruction	TCS-3
26	62+650 to 62+700	Reconstruction	TCS-11
27	62+700 to 63+220	Reconstruction	TCS-3
28	63+270 to 63+640	Reconstruction	TCS-3
29	63+640 to 63+930	Reconstruction	TCS-7
30	63+930 to 64+000	Reconstruction	TCS-4
31	64+000 to 64+300	Reconstruction	TCS-7
32	64+350 to 64+450	Reconstruction	TCS-3
33	64+450 to 64+600	Reconstruction	TCS-5
34	64+650 to 64+700	Reconstruction	TCS-5
35	64+700 to 65+415	Reconstruction	TCS-3
36	65+465 to 65+520	Reconstruction	TCS-3
37	65+520 to 65+570	Reconstruction	TCS-11
38	65+570 to 65+620	Reconstruction	TCS-5
39	65+620 to 65+675	Reconstruction	TCS-4
40	65+675 to 66+110	Reconstruction	TCS-3

6. Roadside Drainage

DrainagesystemincludingsurfaceandsubsurfacedrainsfortheProjectHighway has been provided in the table given below:

RCC Covered Drain

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side
From	To				
48970	49300	3.96	326.0	TCS-7	Valley
50330	50650	60.84	518.3	TCS-6	Both
53950	54250	10	290.0	TCS-7	Valley
59000	59100	0	100.0	TCS-7	Valley
59700	60000	12.72	574.6	TCS-6	Both
60150	60350	13.2	186.8	TCS-7	Valley
60450	60650	5.3	194.7	TCS-7	Valley
60850	61030	0	180.0	TCS-7	Valley
61030	61820	89.84	1400.3	TCS-6	Both
62470	62530	0	60.0	TCS-7	Valley
63640	63930	12.84	277.2	TCS-7	Valley

64000	64300	13.74	286.3	TCS-7	Valley
Total =			**4394**		

RR Masonry Trapezoidal Drain

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side
From	To				
49300	50330	18.12	1011.9	TCS-3	Hill
50650	52625	43.16	1931.8	TCS-3	Hill
52675	53950	26.3	1248.7	TCS-3	Hill
54250	55925	29.32	1645.7	TCS-3	Hill
55925	55975	0	50.0	TCS-4	Hill
55975	59000	50.94	2974.1	TCS-3	Hill
59100	59700	13.1	586.9	TCS-3	Hill
60000	60150	8	142.0	TCS-3	Hill
60350	60450	0	100.0	TCS-3	Hill
60650	60850	2.6	197.4	TCS-3	Hill
61820	62020	2.6	197.4	TCS-3	Hill
62020	62070	0	50.0	TCS-4	Hill
62070	62470	10.1	389.9	TCS-3	Hill
62530	62650	0	120.0	TCS-3	Hill
62700	63220	5.2	514.8	TCS-3	Hill
63220	63270	0	50.0	TCS-3A	Hill
63270	63640	11.06	358.9	TCS-3	Hill
63930	64000	0	70.0	TCS-4	Hill
64300	64350	0	50.0	TCS-3A	Hill
64350	64450	10.12	89.9	TCS-3	Hill
64600	64650	0	50.0	TCS-3A	Hill
64700	65415	19.64	695.4	TCS-3	Hill
65415	65465	0	50.0	TCS-3A	Hill
65465	65520	2.7	52.3	TCS-3	Hill
65620	65675	0	55.0	TCS-4	Hill
65675	66110	14.34	420.7	TCS-3	Hill
Total =			**13103**		

Catch water Drain

Chainage (m)		Length of CD	Net Length (m)
From	To		
49140	49300	3.96	156.0
53950	54250	10	290.0
59000	59100	0	100.0
60150	60350	13.2	186.8
60450	60650	5.3	194.7
60850	61030	0	180.0
62470	62530	0	60.0
63640	63930	12.84	277.2
64000	64300	13.74	286.3
64450	64600	0	150.0
64650	64700	2.6	47.4
65570	65620	2.6	47.4
Total =			**1976**

Total Length of Trapezoidal Drain = 15078m

Chute Drain (of avg. 8 m height @ 50m Interval) = 316m

7. Design of Structures

(i)General

(a) All bridges culverts and structures shall be designed and constructed in accordance with provision of the relevant Manual and shall conform to the cross- sectional features and other details specified therein.

(b) Width of the carriage way of new bridges and structures shall be as follows:

[Refer to provision of the relevant Manual and specify the width of carriageway of new bridges and structures of more than 60(sixty) metre length. If the carriageway width is different from 7.5 (seven point five) metres in the table below.]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
1	50+288	**Carriageway Width = 11.0m** **Width of Railings = 1.0m (2x0.50m)** **Overall width = 12 m**
2	52+040	
3	54+057	
4	59+887	
5	60+083	
6	61+340	
7	64+917	

(c) The following structuresshall be providedwith footpaths:

[Refer toprovisionofthe relevant Manual and provide details of newStructures with footpath]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
Nil		

(d) All bridgesshall be high-level bridges.

[Refer to provisionofthe relevant Manual and stateif there is anyexception]

(e) Thefollowingstructuresshallbedesigned tocarryutility servicesspecifiedin Table below:

[Refer to provisionofthe relevant Manualand provide details]

Sl.No.	Bridgeat km	Utilityservice to be carried	Remarks
Nil			

(f) Cross-sectionofthenewculvertsandbridgesatdecklevelfortheproject Highwayshall conformtothetypicalcross-sectionsgiveninprovisionofthe relevant Manual.

(ii) Culverts

(a) Overall width of all culverts shall beequal to the roadway width of the approaches.
(b) Reconstruction of existing culverts:

Theexistingculvertsatthefollowinglocationsshallbere-constructedasnew culverts:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	49.296	3.0 X 4.0	Single Span

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
2	49.577	4.0 X 3.0	Single Span
3	49.602	2.0 X 2.0	Single Span
4	49.714	3.0 X 4.0	Single Span
5	50.114	2.0 X 2.0	Single Span
6	50.190	3.0 X 4.0	Single Span
7	50.421	3.0 X 3.0	Single Span
8	50.657	2.0 X 3.0	Single Span
9	50.720	2.0 X 3.0	Single Span
10	50.852	2.0 X 3.0	Single Span
11	51.030	2.0 X 3.0	Single Span
12	51.132	2.0 X 3.0	Single Span
13	51.234	2.0 X 2.0	Single Span
14	51.539	3.0 X 4.0	Single Span
15	51.707	3.0 X 3.0	Single Span
16	51.900	2.0 X 3.0	Single Span
17	52.040	2.0 X 2.0	Single Span
18	52.469	3.0 X 4.0	Single Span
19	52.776	2.0 X 3.0	Single Span
20	52.842	3.0 X 4.0	Single Span
21	52.965	2.0 X 3.0	Single Span
22	53.176	3.0 X 3.0	Single Span
23	53.541	2.0 X 2.0	Single Span
24	53.670	2.0 X 2.0	Single Span
25	53.743	2.0 X 3.0	Single Span
26	53.813	2.0 X 2.0	Single Span
27	53.860	2.0 X 2.0	Single Span
28	54.302	2.0 X 3.0	Single Span
29	54.505	2.0 X 2.0	Single Span
30	54.653	2.0 X 3.0	Single Span
31	54.909	3.0 X 4.0	Single Span
32	55.089	3.0 X 4.0	Single Span
33	55.202	2.0 X 3.0	Single Span
34	55.284	2.0 X 3.0	Single Span
35	55.488	2.0 X 3.0	Single Span
36	55.645	2.0 X 3.0	Single Span
37	55.810	2.0 X 2.0	Single Span
38	56.080	2.0 X 3.0	Single Span
39	56.104	2.0 X 2.0	Single Span
40	56.599	3.0 X 4.0	Single Span
41	56.729	2.0 X 2.0	Single Span
42	57.168	2.0 X 2.0	Single Span
43	57.273	2.0 X 2.0	Single Span
44	57.408	3.0 X 3.0	Single Span
45	57.612	2.0 X 3.0	Single Span
46	57.742	2.0 X 2.0	Single Span
47	58.019	2.0 X 2.0	Single Span
48	58.154	2.0 X 2.0	Single Span
49	58.481	2.0 X 3.0	Single Span
50	58.616	2.0 X 2.0	Single Span
51	58.659	3.0 X 3.0	Single Span
52	58.740	2.0 X 2.0	Single Span
53	59.138	2.0 X 2.0	Single Span

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
54	59.210	2.0 X 2.0	Single Span
55	59.290	2.0 X 3.0	Single Span
56	59.698	2.0 X 2.0	Single Span
57	59.812	2.0 X 3.0	Single Span
58	59.897	3.0 X 4.0	Single Span
59	59.982	5.0 X 4.0	Single Span
60	60.210	2.0 X 2.0	Single Span
61	60.304	2.0 X 2.0	Single Span
62	60.491	2.0 X 2.0	Single Span
63	60.578	2.0 X 3.0	Single Span
64	60.832	2.0 X 2.0	Single Span
65	61.073	3.0 X 3.0	Single Span
66	62.170	5.0 X 3.0	Single Span
67	62.350	3.0 X 4.0	Single Span
68	62.795	2.0 X 2.0	Single Span
69	63.136	2.0 X 2.0	Single Span
70	63.290	4.0 X 3.0	Single Span
71	63.380	5.0 X 4.0	Single Span
72	63.654	5.0 X 5.0	Single Span
73	63.762	3.0 X 3.0	Single Span
74	63.855	2.0 X 2.0	Single Span
75	64.028	5.0 X 3.0	Single Span
76	64.126	2.0 X 2.0	Single Span
77	64.284	4.0 X 3.0	Single Span
78	64.353	4.0 X 3.0	Single Span
79	64.411	4.0 X 4.0	Single Span
80	64.884	2.0 X 2.0	Single Span
81	65.027	2.0 X 2.0	Single Span
82	65.098	2.0 X 2.0	Single Span
83	65.312	3.0 X 3.0	Single Span
84	65.484	2.0 X 3.0	Single Span
85	65.618	2.0 X 2.0	Single Span
86	65.692	3.0 X 3.0	Single Span
87	65.816	2.0 X 2.0	Single Span
88	66.075	2.0 X 3.0	Single Span
89	66.273	2.0 X 2.0	Single Span
90	66.326	2.0 X 2.0	Single Span

*[Specify modifications, if any, required in the road level, etc.]

(c)Widening of existing culverts:

All existing culverts which are not to be reconstructed shall be widened to the roadway width of the Project Highway as per the typical cross section given in provision of the relevant Manual. Repairs and strengthening of existing structures where required shall be carried out.

Sl. No.	Culvert location	Type,span,height,and widthofexistingculvert(m)	Repairstobe carriedout [specify]
Nil			

(d) Additional new culverts shall be constructed as per particulars given in the table below:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	56.392	2.0 X 2.0	Single Span
2	56.935	2.0 X 2.0	Single Span

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
3	58.859	2.0 X 2.0	Single Span
4	59.594	2.0 X 2.0	Single Span
5	61.825	2.0 X 2.0	Single Span
6	64.663	2.0 X 2.0	Single Span

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

[Refer provision of the relevant Manualand provide details]

Sl.No.	Location atkm	Typeofrepair required
Nil		

(e) FloorprotectionworksshallbeasspecifiedintherelevantIRCCodesandSpecifications.

(iii) Bridges

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

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

Sl. No.	Bridge location (km)	Salient details of existing bridge		Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Remarks
		Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)		
1	52+040	RCC SLAB BRIDGE	1X10.0M	Insufficient width and not conform to IRC Loading	Proposed as RCC SOLID SLAB (1X10.0 m)
2	54+057	RCC SLAB BRIDGE	1X10.0M	Insufficient width and not conform to IRC Loading	Proposed as RCC SOLID SLAB (1X10.0 m)
3	59+887	RCC SLAB BRIDGE	1X7.0M	Insufficient width and not conform to IRC Loading	Proposed as RCC SOLID SLAB (1X8.0 m)
4	60+083	RCC SLAB BRIDGE	1X7.0M	Insufficient width and not conform to IRC Loading	Proposed as RCC SOLID SLAB (1X8.0 m)
5	64+917	RCC SLAB BRIDGE	1X6.3M	Insufficient width and not conform to IRC Loading	Proposed as RCC SOLID SLAB (1X8.0 m)

(ii) The following narrow bridges shall bewidened:

Sl. No.	Location (km)	Existing width(m)	Extent of widening(m)	Cross-section at deck levelforwidening@
Nil				

(b) Additional new bridges

[Specify additional new bridges if required. And attach GAD]

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

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
1	50+288	1X8.0+1X41.0+1X8.0 m = 57.0 m	RCC SLAB+ PSC I-GIRDER
2	61+340	2X43.0 m = 86.0 m	PSC I-GIRDER

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

following locations:

[Refer provision of the relevant Manualand provide details:]

Sl.No.	Location atkm	Remarks
Nil		

(d) Repairs/replacements of railing/parapets oftheexistingbridgesshallbe undertaken as follows:

[Refer to provisionofthe relevant Manualand providedetails]

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

(e) Drainagesystem forbridge decks

Aneffectivedrainagesystemforbridgedecks shall beprovidedas specified in provisionofthe relevant Manual

(f) Structures in marine environment

[Refertoprovisionofthe relevant Manual andspecify thenecessarymeasures/ treatments for protecting structuresin marineenvironment.Where applicable]

(v) Rail-roadbridges

(a) DesignconstructionanddetailingofROB/RUBshallbeasspecifiedinprovisionofthe relevant Manual [Refer toprovisionofthe relevant Manual andspecify modification, if any]

(b) Road over-bridges

Roadover-bridges(roadoverrail)shall beprovidedatthefollowinglevel crossings.As per GAD drawings attached:

Sl. No.	Location ofLevelcrossing(Chainagekm)	Lengthofbridge (m)
Nil		

(c)Road under-bridges

Road under-bridges (road under railwayline) shall beprovided at the following level crossings as per GAD drawings attached:

Sl. No.	Location ofLevelcrossing (Chainage km)	Number andlengthof span(m)
Nil		

(v) Grade separatedstructures

[Refer provisionofthe relevant Manual]

Thegradeseparatedstructuresshallbeprovidedatthelocationsandofthetypeand length specified in paragraphs 2(ix) and3 of this Annex-I.

(vi) Repairs andstrengthening of bridges andstructures

[Refer to provisionofthe relevant Manual and provide details]

Theexistingbridgesandstructurestoberepaired/strengthenedandthenatureand extent of repairs /strengtheningrequired are given below:

(a) Bridges

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

(b)ROB / RUB

Sl. No.	Location of ROB/RUB (km)	Natureandextent ofrepairs/strengtheningtobe carriedout
Nil		

(b) Overpasses/Underpasses and other structures

Sl. No.	Location of Structure(km)	Natureandextent ofrepairs/strengtheningtobe carriedout
Nil		

(vii) List of Major Bridges and Structures

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

Sl. No.	Location (Km)
1	61+340 [Proposed as PSC I GIRDER (2X43.0 = 86.0 m)]

8. Traffic Control Devices and Road Safety Works

(i) Traffic control devices and road safety works shall be provided in accordance with provisions of relevant Manual.

Sl. No	Traffic Signages, Road Marking and other appurtenances	unit	Quantity
1	Total No of Street Light=	Nos	146
2	Kilometer stones=	Nos	14
3	5th Kilometer stones=	Nos	3
4	Boundary Stones=	Nos	174
5	Delineators (100 cm long and circular shaped)+Hazard marker =	Nos	1541
6	Road Stud=	Nos	10005
7	900 mm Octagonal	Nos	17
8	600 mm circular	Nos	66
9	900 mm Tringular	Nos	272
10	800 mm x 600 mm rectangular	Nos	4
11	Convex Mirror for Blind Curve	Nos	0
12	Rumble Strip=	sqm	29

(ii) Specifications of the reflective sheeting. [Refer to provision of relevant Manual and specify]

9. Road side Furniture

(i) Road side furniture shall be provided in accordance with article 8(i) of this schedule.

(ii) Overhead trafficsigns: location andsize

Sl. No.	Location (Km)	Size
Nil		

10. Compulsory Afforestation

[Refertoprovision of relevantManualandspecifythenumberoftreeswhichare required to be plantedby the concerned departmentas compensatoryafforestation.]

11. Hazardous Locations

The safety barriers shall also be provided at the following hazardous locations:

a) Retaining Wall

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side	Avg. Height (m)
From	To					
52625	52675	0	50.0	TCS-11	Valley	2
55925	55975	0	50.0	TCS-4	Valley	2
62020	62070	0	50.0	TCS-4	Valley	2
62650	62700	0	50.0	TCS-11	Valley	2
63930	64000	0	70.0	TCS-4	Valley	2
65520	65570	0	50.0	TCS-11	Valley	2
65620	65675	0	55.0	TCS-4	Valley	2
Total =			**375**			

b) Breast Wall

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side	Avg. Height (m)
From	To					
49140	49300	3.96	156.0	TCS-7	Hill	2
52625	52675	0	50.0	TCS-11	Hill	2
53950	54250	10	290.0	TCS-7	Hill	2
59000	59100	0	100.0	TCS-7	Hill	2
60150	60350	13.2	186.8	TCS-7	Hill	2
60450	60650	5.3	194.7	TCS-7	Hill	2
60850	61030	0	180.0	TCS-7	Hill	2
62470	62530	0	60.0	TCS-7	Hill	2
62650	62700	0	50.0	TCS-11	Hill	2
63640	63930	12.84	277.2	TCS-7	Hill	2
64000	64300	13.74	286.3	TCS-7	Hill	2
64450	64600	0	150.0	TCS-5	Hill	2
64650	64700	2.6	47.4	TCS-5	Hill	2
65520	65570	0	50.0	TCS-11	Hill	2
65570	65620	2.6	47.4	TCS-5	Hill	2
Total =			**2126**			

c) Metal Beam Crash Barrier

Chainage (m)		Net Length (m)	Side
From	To		
53050	53200	150.0	Valley
53700	53800	100.0	Valley
55100	55200	100.0	Valley
55670	55750	80.0	Valley
56620	56720	100.0	Valley
57900	58000	100.0	Valley
62700	62800	100.0	Valley
63200	63250	50.0	Valley
63450	63600	150.0	Valley
Total =		**930.0**	

Total no. of Bridges on the project=	5 nos.
Approach length on valley side for each bridge (25 m on both side)	50 m
Hence, Crash barrier length for 5 bridges =	500 m

Therefore, total length of crash barrier = 1430 m

d) Hydro seeding

Chainage (m)		Length of CD	Net Length (m)	TCS No.
From	To			
48970	49300	3.96	326.04	TCS-7
52625	52675		50	TCS-11
53950	54250	10	290	TCS-7
59000	59100		100	TCS-7
60150	60350	13.2	186.8	TCS-7
60450	60650	5.3	194.7	TCS-7
60850	61030		180	TCS-7
62470	62530		60	TCS-7
62650	62700		50	TCS-11
63220	63270		50	TCS-3A
63640	63930	12.84	277.16	TCS-7
64000	64300	13.74	286.26	TCS-7
64300	64350		50	TCS-3A
64450	64600		150	TCS-5
64600	64650		50	TCS-3A
64650	64700	2.6	47.4	TCS-5
65415	65465		50	TCS-3A
65520	65570		50	TCS-11
65570	65620	2.6	47.4	TCS-5
Total =			**2495.76**	

Avg. Height of Hydro seeding = 8 m

Area of Hydro seeding = 19966.08 sqm

12. Special Requirement for Hill Roads

Nil

13. Change of Scope

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

(Schedule-B1)

1. The shifting of utilities and felling of trees shall be carried out by the concerned department. The cost of the same shall be borne by the concerned department.

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) Toll plaza[s]

(b) Road side furniture;

(c) Pedestrian facilities;

(d) Truck Lay byes;

(e) Bus-bays and passenger shelters;

(f) Rest areas; and

(g) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza: -

Sl. No.	Design Chainage(km)	Name of the Place
Nil		

b) Roadside furniture: -

Sl. No.	Description	Location	Design Standard
1	Traffic sign & pavement marking	Entire Length (As per Schedule B)	As per Manual
2	Km Stone, 5th kilometre stone	Entire Length	As per Manual
3	Boundary Stone	Entire Length	As per Manual
4	Roadside Delineator, marker & Road Stud	As per Schedule B	As per Manual
5	Metal beam crash barrier	As per Schedule B	As per Manual

C) Pedestrian Facility:-

Pedestrian facilities in the form of foot path shall be provided in the built up area (refer typical cross – section drawing). Pedestrian facilities shall be provided at the locations of urban sections in order to ensure safety of pedestrians while crossing in consultation with NHIDCL.

d) Truck Lay bye:-

Sl. No.	Truck lay bye Chainage(Both Side)	Name of the Place
Nil		

e) Bus Bay &Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Design Requirements	Other Essential Details
1	Bus Bay & Passenger shelter	50+890 (Both side)	Bus Bays & Passenger shelter have been placed on both side of proposed roadway	Dimension of Bus Bay (L X B = 59.0 m X 3.0 m) Dimension of Passenger Shelter (L X B = 6.0 m X 2.0 m) (Refer Passenger Shelter Drawing)
2	Bus Bay & Passenger shelter	62+650 (Both side)		

f) Rest Areas

Sl. No.	Rest Area Chainage	Name of the Place
Nil		

g) Others to be specified

Street Lighting:
Total 47 Nos. Street lighting shall be provided in built-upareas, bus bays and passenger shelters locations.

Note: Provide adequate details of each Project Facility to ensure their design and completion in accordance with the project-specific requirements and the provisions of the Manual.

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 Lanning of Highways (IRC: SP: 73-2018), referred to herein as the Manual]

[Note: Specify the relevant Manual, Specifications and Standards]

Annex – I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for [Two-Lanning of Highways (IRC: SP: 73-2018)], 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 Authority's Engineer.

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:]

<table>
<tr><th>Item</th><th>Manual Clause Reference</th><th colspan="5">Provision as per Manual</th><th colspan="5">Modified Provision</th></tr>
<tr><td rowspan="4">Shoulder</td><td rowspan="4">2.6</td><td colspan="5"><u>Mountainous Terrain</u></td><td colspan="5"><u>Mountainous Terrain</u></td></tr>
<tr><td rowspan="2">Type of Section</td><td rowspan="2">Side</td><td colspan="3">Width of Shoulder (m)</td><td rowspan="2">Type of Section</td><td rowspan="2">Side</td><td colspan="3">Width of Shoulder (m)</td></tr>
<tr><td>Paved</td><td>Earthen</td><td>Total</td><td>Paved</td><td>Earthen</td><td>Total</td></tr>
<tr><td>Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>1.5</td><td>-</td><td>1.5</td><td>Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>1.5</td><td>-</td><td>1.5</td></tr>
<tr><td>Valley Side</td><td>1.5</td><td>1</td><td>2.5</td><td>Valley Side</td><td>1.5</td><td>1.0 m</td><td>2.5</td></tr>
<tr><td>Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td><td>Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>1.5</td><td>-</td><td>1.5</td></tr>
<tr><td></td><td>Valley Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td><td></td><td>Valley Side</td><td>1.5</td><td>-</td><td>1.5</td></tr>
<tr><td>Design Speed</td><td>2.2</td><td colspan="5"><u>Mountainous Terrain:</u>
Ruling: 60 Kmph
Minimum: 40 Kmph</td><td colspan="5"><u>Mountainous Terrain:</u>
Design Speed followed 40-60 kmph in general. However, design speed has been reduced to 20 kmph due to site constraints and to accommodate the proposal within EROW.
(Refer Horizontal Alignment Drawing and Table 1.1 below)</td></tr>
<tr><td>Extra Widening</td><td>2.7</td><td colspan="5">Extra Widening has been proposed as per IRC: SP: 73-2018
<table><tr><th>Radius</th><th>Extra Widening</th></tr><tr><td>75-100 m</td><td>0.9 m</td></tr><tr><td>101-300 m</td><td>0.6 m</td></tr></table></td><td colspan="5">Extra Widening has been proposed as per IRC: SP: 48-1998 (Table 6.9) of Hill Road Manual.
<table><tr><th>Radius</th><th>Extra Widening</th></tr><tr><td>21-40 m</td><td>1.5 m</td></tr><tr><td>41-60 m</td><td>1.2 m</td></tr><tr><td>61-100 m</td><td>0.9 m</td></tr></table></td></tr>
</table>

Item	Manual Clause Reference	Provision as per Manual	Modified Provision		
			75-100 m	0.9 m	
			101-300 m	0.6 m	
			Above 300 m	NIL	
Radii Of Horizontal Curve	2.9.4	**Mountainous Terrain:** Desirable Minimum Radius: 150 m Absolute Minimum Radius: 75 m	Radius below 75 m has been provided in the location listed in table 1.		

Table 1.1: Locations where Design Speed is less than40kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
1	49+009 to 49+015	Sharp Bend	Design Speed = 30 Kmph
2	49+063 to 49+073	Sharp Bend	Design Speed = 30 Kmph
3	49+141 to 49+154	Sharp Bend	Design Speed = 30 Kmph
4	49+202 to 49+216	Sharp Bend	Design Speed = 30 Kmph
5	49+264 to 49+273	Sharp Bend	Design Speed = 30 Kmph
6	49+336 to 49+370	Sharp Bend	Design Speed = 20 Kmph
7	49+403 to 49+423	Sharp Bend	Design Speed = 20 Kmph
8	49+497 to 49+513	Sharp Bend	Design Speed = 30 Kmph
9	49+563 to 49+603	Sharp Bend	Design Speed = 30 Kmph
10	49+646 to 49+685	Sharp Bend	Design Speed = 30 Kmph
11	49+860 to 49+881	Sharp Bend	Design Speed = 20 Kmph
12	49+917 to 49+931	Sharp Bend	Design Speed = 20 Kmph
13	49+962 to 49+981	Sharp Bend	Design Speed = 20 Kmph
14	50+015 to 50+027	Sharp Bend	Design Speed = 20 Kmph
15	50+148 to 50+227	Sharp Bend	Design Speed = 30 Kmph
16	50+330 to 50+354	Sharp Bend	Design Speed = 20 Kmph
17	51+923 to 51+947	Sharp Bend	Design Speed = 30 Kmph
18	52+005 to 52+031	Sharp Bend	Design Speed = 30 Kmph
19	52+080 to 52+116	Sharp Bend	Design Speed = 30 Kmph
20	52+494 to 52+532	Sharp Bend	Design Speed = 20 Kmph
21	52+576 to 52+612	Sharp Bend	Design Speed = 20 Kmph
22	52+716 to 52+725	Sharp Bend	Design Speed = 30 Kmph
23	52+771 to 52+778	Sharp Bend	Design Speed = 30 Kmph
24	53+494 to 53+517	Sharp Bend	Design Speed = 30 Kmph
25	53+563 to 53+591	Sharp Bend	Design Speed = 30 Kmph
26	53+657 to 53+663	Sharp Bend	Design Speed = 30 Kmph
27	54+701 to 54+711	Sharp Bend	Design Speed = 30 Kmph
28	54+792 to 54+811	Sharp Bend	Design Speed = 30 Kmph
29	54+851 to 54+881	Sharp Bend	Design Speed = 30 Kmph
30	55+225 to 55+235	Sharp Bend	Design Speed = 30 Kmph
31	55+272 to 55+282	Sharp Bend	Design Speed = 30 Kmph
32	55+328 to 55+336	Sharp Bend	Design Speed = 30 Kmph
33	55+433 to 55+484	Sharp Bend	Design Speed = 30 Kmph
34	55+545 to 55+568	Sharp Bend	Design Speed = 30 Kmph
35	55+888 to 55+895	Sharp Bend	Design Speed = 30 Kmph
36	55+947 to 55+956	Sharp Bend	Design Speed = 30 Kmph
37	56+229 to 56+249	Sharp Bend	Design Speed = 30 Kmph
38	56+307 to 56+321	Sharp Bend	Design Speed = 30 Kmph
39	56+392 to 56+405	Sharp Bend	Design Speed = 30 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
40	56+469 to 56+485	Sharp Bend	Design Speed = 30 Kmph
41	57+419 to 57+424	Sharp Bend	Design Speed = 30 Kmph
42	57+475 to 57+480	Sharp Bend	Design Speed = 30 Kmph
43	58+629 to 58+635	Sharp Bend	Design Speed = 30 Kmph
44	58+681 to 58+688	Sharp Bend	Design Speed = 30 Kmph
45	58+742 to 58+760	Sharp Bend	Design Speed = 30 Kmph
46	60+053 to 60+060	Sharp Bend	Design Speed = 30 Kmph
47	60+125 to 60+139	Sharp Bend	Design Speed = 30 Kmph
48	60+962 to 61+077	Sharp Bend	Design Speed = 30 Kmph
49	61+226 to 61+268	Sharp Bend	Design Speed = 30 Kmph
50	61+436 to 61+547	Sharp Bend	Design Speed = 30 Kmph
51	61+580 to 61+616	Sharp Bend	Design Speed = 30 Kmph
52	61+977 to 62+023	Sharp Bend	Design Speed = 30 Kmph
53	62+124 to 62+143	Sharp Bend	Design Speed = 30 Kmph
54	62+214 to 62+283	Sharp Bend	Design Speed = 30 Kmph
55	62+329 to 62+336	Sharp Bend	Design Speed = 30 Kmph
56	62+582 to 62+594	Sharp Bend	Design Speed = 30 Kmph
57	62+636 to 62+653	Sharp Bend	Design Speed = 30 Kmph
58	63+174 to 63+212	Sharp Bend	Design Speed = 30 Kmph
59	63+275 to 63+364	Sharp Bend	Design Speed = 30 Kmph
60	63+430 to 63+453	Sharp Bend	Design Speed = 30 Kmph
61	63+575 to 63+718	Sharp Bend	Design Speed = 30 Kmph
62	63+788 to 63+827	Sharp Bend	Design Speed = 30 Kmph
63	63+886 to 63+951	Sharp Bend	Design Speed = 30 Kmph
64	64+565 to 64+584	Sharp Bend	Design Speed = 30 Kmph
65	64+635 to 64+642	Sharp Bend	Design Speed = 30 Kmph
66	65+141 to 65+151	Sharp Bend	Design Speed = 30 Kmph
67	65+213 to 65+242	Sharp Bend	Design Speed = 30 Kmph
68	65+304 to 65+353	Sharp Bend	Design Speed = 30 Kmph
69	65+794 to 65+826	Sharp Bend	Design Speed = 30 Kmph

Table 1.2: Locations where Radii of Horizontal Curve is less than 75m.

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
1	327	49.009	49.015	50
2	328	49.063	49.073	50
3	329	49.141	49.154	40
4	330	49.202	49.216	50
5	331	49.264	49.273	50
6	332	49.336	49.370	30
7	333	49.403	49.423	30
8	334	49.497	49.513	40
9	335	49.563	49.603	60
10	336	49.646	49.685	60
11	338	49.860	49.881	30
12	339	49.917	49.931	40
13	340	49.962	49.981	40
14	341	50.015	50.027	50
15	342	50.148	50.227	70
16	343	50.330	50.354	25

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
17	353	51.923	51.947	50
18	354	52.005	52.031	30
19	355	52.080	52.116	60
20	357	52.494	52.532	25
21	358	52.576	52.612	20
22	359	52.716	52.725	50
23	360	52.771	52.778	50
24	361	52.875	52.899	70
25	366	53.333	53.354	70
26	368	53.494	53.517	50
27	369	53.563	53.591	50
28	370	53.657	53.663	35
29	371	53.781	53.800	70
30	375	54.192	54.209	70
31	376	54.300	54.314	50
32	378	54.579	54.603	70
33	379	54.701	54.711	35
34	380	54.792	54.811	50
35	381	54.851	54.881	70
36	384	55.225	55.235	50
37	385	55.272	55.282	60
38	386	55.328	55.336	35
39	387	55.433	55.484	30
40	388	55.545	55.568	30
41	391	55.888	55.895	30
42	392	55.947	55.956	50
43	393	56.008	56.032	70
44	394	56.126	56.155	70
45	395	56.229	56.249	40
46	396	56.307	56.321	50
47	397	56.392	56.405	30
48	398	56.469	56.485	30
49	399	56.601	56.619	70
50	402	56.908	56.939	70
51	405	57.193	57.211	70
52	406	57.334	57.345	70
53	407	57.419	57.424	30
54	408	57.475	57.480	50
55	409	57.538	57.552	70
56	410	57.767	57.777	70
57	412	57.967	57.990	70
58	419	58.629	58.635	50
59	420	58.681	58.688	40
60	421	58.742	58.760	40
61	426	59.338	59.389	70
62	430	59.789	59.795	70
63	433	60.053	60.060	70
64	434	60.125	60.139	35
65	443	61.226	61.268	40
66	445	61.580	61.616	50
67	447	61.847	61.860	70

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
68	448	61.977	62.023	30
69	449	62.124	62.143	30
70	450	62.214	62.283	70
71	451	62.329	62.336	30
72	453	62.582	62.594	50
73	454	62.636	62.653	50
74	457	62.984	63.002	70
75	458	63.174	63.212	30
76	459	63.275	63.364	40
77	460	63.430	63.453	30
78	462	63.788	63.827	30
79	463	63.886	63.951	40
80	464	64.058	64.157	60
81	465	64.240	64.267	70
82	467	64.565	64.584	30
83	468	64.635	64.642	50
84	469	64.875	65.003	60
85	470	65.141	65.151	30
86	471	65.213	65.242	30
87	472	65.304	65.353	30
88	476	65.652	65.687	70
89	477	65.794	65.826	30
90	478	65.886	65.944	70

(iii) [Note1: Deviations fromtheaforesaidSpecificationsand Standards shallbe listedout here. Suchdeviations shall bespecified only ifthey are considered essential in viewof project-specific requirements.]

Schedule - H

(See Clauses 10.1 (iv) and 19.3)

Contract Price Weightages

1.1 The Contract Price for this Agreement is Rs. ****

1.2 Proportions of the Contract Price for different stages of Construction of the Project Highway shall be as specified below:

Item	Weightage in % of CP	Stage for Payment	Percentage
1	2	3	4
Road Works including Culverts, widening and repair of culverts	64.27 %	**A- Widening and strengthening of existing road**	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Non bituminous Base course	[Nil]
		(4) Bituminous Basecourse	[Nil]
		(5) Wearing Coat	[Nil]
		(6) Widening and repair of culverts	[Nil]
		B.1-Reconstruction/New 2-Lane Realignment /Bypass (Flexible Pavement)	
		(1) Earthwork up to top of the sub- grade	14.97%
		(2) Sub-base Course	13.35%
		(3) Non bituminous Base course	16.82%
		(4) Bituminous Basecourse	17.96%
		(5) Wearing Coat	9.72%
		B.2-Reconstruction/New 8-Lane Realignment/ Bypass (Rigid Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Dry Lean Concrete (DLC) Course	[Nil]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		C.1-Reconstruction/ New Service Road (Flexible Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Non bituminous Base course	[Nil]
		(4) Bituminous Basecourse	[Nil]
		(5) Wearing Coat	[Nil]
		C.2- Reconstruction/New Service road (Rigid Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Dry Lean Concrete (DLC) Course	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
		(4) Pavement Quality Control (PQC) Course	[Nil]
		D- Reconstruction & New Culverts on existing road, realignments, bypasses Culverts (length <6m)	27.18%
Minor bridge/ Underpasses/ Overpasses	9.06%	**A.1-widening and repairing of Minor Bridges (length >6 m&<60m)**	
		Minor Bridges	[Nil]
		A.2- New Minor bridges (length >6 mand<60m)	
		(1) Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	62.77%
		(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 etc. complete in all respect.	32.96%
		(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	4.27%
		(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]
		B.1- Widening and repairs of underpasses/overpasses	
		Underpasses/ Overpasses	[Nil]
		B.2-NewUnderpasses/Overpasses	
		(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/pier cap.	[Nil]
		(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 etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	[Nil]
		(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]
Major bridge(length>60 m) works and	8.906 %	**A.1- Widening and repairs of Major Bridges**	
		(1)Foundation	[Nil]
		(2)Sub-structure	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
ROB/RUB/elevated sections/flyovers including viaducts, if any		(3)Super-structure(including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/return walls	[Nil]
		(7)Guide Bunds,River Training works etc.	[Nil]
		(8)Approaches(including Retaining walls, stone pitching and protection works)	[Nil]
		A.2-NewMajorBridges	
		(1)Foundation	20.45%
		(2)Sub-structure	18.17%
		(3)Super-structure(including bearings)	53.22%
		(4)Wearing Coat including expansion joints	3.3%
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	1.26%
		(6) Wing walls/return walls	[Nil]
		(7)Guide Bunds, River Training works etc.	[Nil]
		(8)Approaches(including Retaining walls, stone pitching and protection works)	3.6%
		B.1-Wideningandrepairsof (a) ROB (b) RUB	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3) Super-Structure (Including bearings)	[Nil]
		(4)Wearing Coat(a)in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) In case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7) Approaches (Including Retaining walls, Stone Pitching and protection works)	[Nil]
		B.2-NewROB/RUB	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3) Super-Structure (Including bearings)	[Nil]
		(4) Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
		C.1- Widening and repair of Elevated Section/Flyovers/Grade Separators	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3)Super-Structure(Including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]
		C.2- New Elevated Section/Flyovers/Grade Separators	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3)Super-Structure(Including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]
Other Works	17.76 %	(i) Toll Plaza	[Nil]
		(ii) Road side drains	50.57%
		(iii) Road signs, markings, km stones, safety devices etc	5.51%
		(iv) Project facilities	
		a) Bus Bays	2%
		b) Truck Lay-byes	[Nil]
		c) Passenger Shelter	0.3%
		d) Rest Area	[Nil]
		e) Diversion Works	0.86%
		(v) Road side Plantation	[Nil]
		(vi) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[Nil]
		(vii) Safety &Traffic Management during const.	[Nil]
		(viii) Breast Wall	24.84%
		(ix) Toe Wall	[Nil]
		(x) Retaining Wall	3.23%
		(xi) Crash Barrier	1.81%
		(xi) Boundary wall	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
		(xii) Site Clearance & Dismantling	8.47%
		(xiii) Protection Works	2.39%
		(xiv) Tunnel	[Nil]

1.3 Procedure of estimating the value of work done

1.3.1 Road works

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

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
A- Widening & Strengthening of road		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 5(five)percent of the total length.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Base course	[Nil]	
(5) Wearing Coat	[Nil]	
(6) Widening and repair of culverts	[Nil]	Cost of ten completed culverts shall be determined on pro-rata basis with respect to the total number of culverts.
B.1- Reconstruction/New2-Lane Realignment/Bypass(Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 0.5(half) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	14.97%	
(2) Sub-base Course	13.35%	
(3) Non bituminous Base course	16.82%	
(4) Bituminous Base course	17.96%	
(5) Wearing Coat	9.72%	
B.2- Reconstruction/New 8-Lane Realignment/Bypass (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC) Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
C.1- Reconstruction/New Service Road/ Slip Road (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Basecourse	[Nil]	
(5) Wearing Coat	[Nil]	
C.2- Reconstruction/New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC)Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
D-Reconstruction & New Culverts on existing road, realignments, bypasses		Cost of each 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
Culverts (length <6m)	27.18%	

Stage of Payment	Percentage weightage	Payment Procedure
		least one culverts

@ 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 other stages shall be worked out accordingly.

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

1.3.2 Minor Bridges and Underpasses/Overpasses.

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

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m&<60m)	Nil	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- New Minor Bridges (length > 6m & < 60m)		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	62.77%	Foundation: 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 shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of foundation 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 etc. complete in all respect.	32.96%	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of

Stage of Payment	Weightage	Payment Procedure
		stage specified as above
(3)Approaches :On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	4.27%	Approaches: 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.
(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]	Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bund sand River training Works in all respects as specified
B.1- Widening and repairs of underpasses/overpasses	[Nil]	Cost of each underpass/overpass shall be determined on pro-rata basis with respect to the total linear length of the underpasses/ overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2- New Underpasses/Overpasses		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	[Nil]	Foundation: Cost of each Underpass/ Overpass shall be determined on pro- rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. 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 each Underpasses/ Overpasses. 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 etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

1.3.3 Major Bridge works, ROB/RUB and Structures.

Procedure for estimating the value of Major Bridge works, ROB/RUB and Structures shall be as stated in table 1.3.3:

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repairs of Major Bridges		
(1) Foundation	[Nil]	Foundation: Cost of each Major Bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the Major Bridge. 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. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	[Nil]	Sub-structure: 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 major bridge.
(3)Super-structure(including bearings)	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Guide Bunds, River Training works etc.	[Nil]	Guide Bunds, River Training works: Payments 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)	[Nil]	Approaches: Payments shall be made on pro-rata basis on completion of 10% of the scope of each stage.
A.2-NewMajorBridges		
(1)Foundation	20.45%	Foundation: Cost of each Major Bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the Major Bridge. 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. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Sub-structure	18.17%	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not

Stage of Payment	Weightage	Payment Procedure
		lessthan25% of the scope of sub- structure of major bridge.
(3)Super-structure(including bearings)	53.22%	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	3.3%	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	1.26%	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Guide bunds, River Training works etc.	[Nil]	Guide Bunds, River Training works: Payments 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)	3.6%	Approaches: Payments shall be made on pro-rata basis on completion of 10% of the scope of each stage.
B.1- Widening and repairs of (a)ROB (b)RUB		
(1) Foundations	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro-rata basis with respect to the total linear length (m)of the ROB/RUB. 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 ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: 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 ROB/RUB.
(3) Super-Structure (Including bearings)	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50%ofthe stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat(a)in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (Including Retaining walls, Stone Pitching and protection works)	[Nil]	Payments shall be made on pro-rata basis on completion of 20% of the total area.
B.2-NewROB/RUB		
(1) Foundation	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro-rata basis with respect to the total linear length (m)of the ROB/RUB. 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 ROB/RUB.
(2) Sub-structure	[Nil]	Sub-structure: 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 ROB/RUB.
(3) Super-structure (including bearing)	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) In case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.1-Wideningandrepairs of Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m)of the structure. 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 structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where

Stage of Payment	Weightage	Payment Procedure
		specified.
(2) Sub-Structure	[Nil]	Sub-structure: 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 structure.
(3) Super-Structure(Including bearings)	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.2- New Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m)of the structure. 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 structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: 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 structure.
(3)Super-Structure(Including bearings)	[Nil]	Super-structure: 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. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders foreach span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all

Stage of Payment	Weightage	Payment Procedure
		respects as specified.
(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payments shall be made on pro-rata basis on completion of 20% of the total area.

Note: (1) In case of innovate Major Bridge projects like cable suspension/cable stayed/ Extra Dozed and exceptionally long span bridges, the schedule may be modified as per site requirements before bidding with due approval of Competent Authority.

(2) The Schedule for exclusive tunnel projects may be prepared as per site requirements before bidding with due approval of Competent Authority.

1.3.4 Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) Toll Plaza	[Nil]	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro-rata basis with respect to the total of all toll plaza.
(2) Roadside drains	50.57%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(3) Road signs, markings, km stones, safety devices etc.	5.51%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus Bays	2%	
b) Truck Lay-byes	[Nil]	
c) Passenger Shelter	0.3%	
d) Rest Area	[Nil]	
e) Diversion Works	0.86%	
(5) Road side Plantation including Horticulture in Wayside Amenities	[Nil]	Unit of measurement is linear length
(6) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[Nil]	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(7) Safety and traffic management during construction	[Nil]	Payment shall be made on prorate basis every six months.
(8) Protection Works		Unit of measurement is linear length. Payment shall be made
(a) Breast Wall	24.84%	

Stage of Payment	Weightage	Payment Procedure
(b) Toe Wall	[Nil]	on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(c)Retaining Wall	3.23%	
(c) Crash Barrier	1.81%	
(9) Site Clearance & Dismantling	8.47%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(10) Protection Works	2.39%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(11) Tunnel	[Nil]	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.

2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause 14.1.1.

2.2 Payment for Maintenance shall be made in quarterly instalments in accordance with the provisions of Clause 19.7.