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 Annexure-III based on site/design requirement.

(iv) 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 15+945 to km 33+396i.e. Keithelmanbi Village to Kharam 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	15+940	16+025	9.6	20	
2	16+025	16+125	13.4		
3	16+125	16+225	11.8		
4	16+225	16+325	9.4		
5	16+325	16+425	14.2	15	
6	16+425	16+525	13.0		
7	16+525	16+625	15.9		
8	16+625	16+725	11.3		
9	16+725	16+825	9.5		
10	16+825	16+925	12.2		
11	16+925	17+025	14.3		
12	17+025	17+125	8.9		
13	17+125	17+225	8.9		
14	17+225	17+325	9.3		
15	17+325	17+425	9.8		
16	17+425	17+525	10.2		
17	17+525	17+625	10.0	20	
18	17+625	17+725	13.0		
19	17+725	17+825	9.5		
20	17+825	17+925	11.0		
21	17+925	18+025	11.2		
22	18+025	18+125	13.0		
23	18+125	18+225	10.6		
24	18+225	18+325	11.5		
25	18+325	18+425	17.6		
26	18+425	18+525	13.2		
27	18+525	18+625	20.0		
28	18+625	18+725	13.7		

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
29	18+725	18+825	10.7		
30	18+825	18+925	15.8		
31	18+925	19+025	16.3		
32	19+025	19+125	9.6		
33	19+125	19+225	10.6	24	
34	19+225	19+325	13.5		
35	19+325	19+425	15.9		
36	19+425	19+525	17.9		
37	19+525	19+625	13.0		
38	19+625	19+725	20.3		
39	19+725	19+825	16.1		
40	19+825	19+925	14.0		
41	19+925	20+025	14.2		
42	20+025	20+125	15.1		
43	20+125	20+225	18.3		
44	20+225	20+325	19.4		
45	20+325	20+425	14.3		
46	20+425	20+525	12.6		
47	20+525	20+625	15.7	24	
48	20+625	20+725	10.8		
49	20+725	20+825	13.4		
50	20+825	20+925	15.6		
51	20+925	21+025	13.6		
52	21+025	21+125	10.8		
53	21+125	21+225	15.3		
54	21+225	21+325	13.0		
55	21+325	21+425	26.8		
56	21+425	21+525	38.8		
57	21+525	21+625	12.9		
58	21+625	21+725	28.2		
59	21+725	21+825	12.6		
60	21+825	22+025	19.7		
61	22+025	22+025	43.1		
62	22+025	22+125	25.4		
63	22+125	22+225	20.7	20	
64	22+225	22+325	12.2		
65	22+325	22+425	20.5		
66	22+425	22+525	11.0		
67	22+525	22+625	15.1		
68	22+625	22+725	13.1		
69	22+725	22+825	10.5		
70	22+825	22+925	14.1		
71	22+925	23+025	12.5		
72	23+025	23+125	13.5	24	
73	23+125	23+225	17.0		
74	23+225	23+325	13.6		
75	23+325	23+425	15.2		
76	23+425	23+525	11.2		
77	23+525	23+625	11.6		
78	23+625	23+725	13.5		
79	23+725	23+825	15.6	20	

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
80	23+825	23+925	15.9		
81	23+925	24+025	9.6		
82	24+025	24+125	12.0		
83	24+125	24+225	11.0		
84	24+225	24+325	15.7		
85	24+325	24+425	13.6		
86	24+425	24+525	14.1		
87	24+525	24+625	11.4		
88	24+625	24+725	13.2		
89	24+725	24+825	16.4		
90	24+825	24+925	15.2		
91	24+925	25+025	16.2		
92	25+025	25+125	14.6		
93	25+125	25+225	14.8		
94	25+225	25+325	13.4	24	
95	25+325	25+425	11.4		
96	25+425	25+525	14.8		
97	25+525	25+625	13.4		
98	25+625	25+725	12.5		
99	25+725	25+825	11.6		
100	25+825	25+925	10.4	20	
101	25+925	26+025	10.8		
102	26+025	26+125	9.4		
103	26+125	26+225	18.6		
104	26+225	26+325	17.1		
105	26+325	26+425	12.5		
106	26+425	26+525	10.2		
107	26+525	26+625	16.9		
108	26+625	26+725	27.5		
109	26+725	26+825	12.1		
110	26+825	26+925	13.6		
111	26+925	27+025	10.2		
112	27+025	27+125	12.7	24	
113	27+125	27+225	15.3		
114	27+225	27+325	13.4		
115	27+325	27+425	15.2		
116	27+425	27+525	13.2		
117	27+525	27+625	14.9		
118	27+625	27+725	11.9		
119	27+725	27+825	13.5		
120	27+825	27+925	12.2		
121	27+925	28+025	15.5		
122	28+025	28+125	19.4		
123	28+125	28+225	13.5	20	
124	28+225	28+325	10.8		
125	28+325	28+425	11.6		
126	28+425	28+525	11.6		
127	28+525	28+625	9.4		
128	28+625	28+725	9.4		
129	28+725	28+825	12.3		
130	28+825	28+925	12.3		

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
131	28+925	29+025	14.3		
132	29+025	29+125	16.6	24	
133	29+125	29+225	16.8		
134	29+225	29+325	15.3	20	
135	29+325	29+425	14.1		
136	29+425	29+525	17.4		
137	29+525	29+625	10.4		
138	29+625	29+725	11.3		
139	29+725	29+825	9.0		
140	29+825	29+925	11.6		
141	29+925	30+025	10.6		
142	30+025	30+125	11.2		
143	30+125	30+225	16.5	24	
144	30+225	30+325	8.5		
145	30+325	30+425	9.6		
146	30+425	30+525	10.2		
147	30+525	30+625	11.5		
148	30+625	30+725	14.6	20	
149	30+725	30+825	13.0		
150	30+825	30+925	13.8		
151	30+925	31+025	12.0		
152	31+025	31+125	12.0		
153	31+125	31+225	12.4		
154	31+225	31+325	10.6		
155	31+325	31+425	14.1		
156	31+425	31+525	13.3		
157	31+525	31+625	14.9		
158	31+625	31+725	19		
159	31+725	31+825	9.3		
160	31+825	31+925	9.5	24	
161	31+925	32+025	10.7		
162	32+025	32+125	11.7		
163	32+125	32+225	14.9		
164	32+225	32+325	11.9		
165	32+325	32+425	14.9		
166	32+425	32+525	12.8		
167	32+525	32+625	11.8		
168	32+625	32+725	13.4		
169	32+725	32+825	12.7		
170	32+825	32+925	15.8		
171	32+925	33+025	14.2		
172	33+025	33+125	10.4		
173	33+125	33+225	8.9		
174	33+225	33+325	8.4		
175	33+325	33+396	8.7		

3. Carriageway

The present carriage way of the Project Highway is Two Lane from km 15+945 to km 33+396. 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		
Nil						

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

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

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

6. Gradeseparators

The Site includes the followinggrade separators:

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

7. Minor bridges

The Site includes 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	25.490	Open	Wall	RCC Box Bridge	1x10.7M	10.6
2	33.360	Open	Wall	RCC Slab Bridge	1x8.5M	6.8

8. Railway level crossings

The Site includes the following railway level crossings:

S. No.	Location(km)	Remarks
Nil		

9. Underpasses(vehicular,non-vehicular)

The Site includes the followingunderpasses:

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)

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
1	16.125	R.C.C SLAB	1X4.50	12.5
2	16.536	R.C.C SLAB	1X1.00	12.4
3	17.023	HP (Skew)	1 X 1.00 Dia	18.6
4	17.255	HP (Skew)	1 X 1.00 Dia	16.6
5	18.048	HP	1 X 1.00 Dia	11.3
6	18.158	HP	1 X 1.00 Dia	8.83
7	18.341	HP	1 X 1.00 Dia	10.1
8	18.586	HP	1 X 0.90 Dia	11.55
9	18.672	R.C.C SLAB	1x1.70	10
10	18.786	R.C.C SLAB	1x1.70	7.5
11	19.033	R.C.C SLAB	1x2.00	8.9
12	19.292	Chocked (Remarks: After Excavation It has found a Single Row HP of 0.90M Dia)	1 X 0.90 Dia	9.3
13	19.516	HP	1 X 1.20 Dia	15
14	19.638	HP	1 X 1.00 Dia	11.6
15	19.915	HP	1 X 1.00 Dia	12
16	19.990	HP	1 X 1.00 Dia	9.6
17	20.155	Not Clearly Visible (Remarks: After Excavation It has found a Single Row HP of 1.00M Dia)	1 X 1.00 Dia	10
18	20.298	Not Clearly Visible (Remarks: After Excavation It has found a Single Row HP of 1.00M Dia)	1 X 1.00 Dia	13
19	20.679	HP	1 X 1.20 Dia	12.4
20	20.912			
21	21.322	HP	1 X 1.20 Dia	11.3
22	21.606	HP	1 X 1.00 Dia	15.2
23	21.664	HP	1 X 1.20 Dia	15
24	21.770	HP	1 X 1.00 Dia	10
25	21.900	HP	1 X 1.00 Dia	12
26	22.184	HP	1 X 1.00 Dia	13
27	22.408	Chocked (Remarks: After Excavation It has found a Single Row HP of 1.00M Dia)	1 X 1.00 Dia	14
28	22.449	HP	1 X 1.00 Dia	11.3
29	22.524	HP	1 X 1.00 Dia	9.7
30	22.667	HP	1 X 1.00 Dia	10.8
31	22.885	HP	1 X 1.00 Dia	12
32	23.034	HP	1 X 1.00 Dia	15.8
33	23.351	HP	1 X 1.00 Dia	12.8
34	23.565	HP	2 X 1.00 Dia	13.7
35	24.672	R.C.C SLAB	1X1.70	8
36	24.999	R.C.C SLAB	1X3.00	12.5
37	25.545	HP	1 X 1.00 Dia	14.5

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
38	25.813	HP	1 X 0.90 Dia	9
39	26.251	HP	1 X 1.00 Dia	10
40	26.603	HP	1 X 1.00 Dia	10.7
41	26.847	HP	1 X 1.00 Dia	11.5
42	27.025	HP	1 X 1.00 Dia	14
43	26.102	HP	1 X 1.00 Dia	12
44	27.300	HP	1 X 0.90 Dia	15
45	27.351	HP	1 X 1.00 Dia	9.5
46	27.500	HP	1 X 0.60 Dia	10
47	27.700	Chocked (Remarks: After Excavation It has found a Single Row HP of 1.00M Dia)	1 X 1.00 Dia	8.8
48	27.745	HP	1 X 0.60 Dia	9.3
49	27.903	HP	1 X 0.90 Dia	10
50	28.117	HP	1 X 1.00 Dia	10.8
51	28.226	Slab	1x2.71	
52	28.392	R.C.C SLAB	1x1.50	10
53	28.884	HP	1 X 0.90 Dia	
54	29.115	Chocked (Remarks: After Excavation It has found a Slab Culvert of 1x1.00M Span)	1 X 1.00 Dia	10.5
55	29.185	R.C.C SLAB	1x3.00	12.3
56	29.740	R.C.C SLAB	1x3.20	12.7
57	29.848	HP	1 X 1.20 Dia	16
58	30.272	R.C.C SLAB	1x1.80	9.8
59	31.025	Chocked (Remarks: After Excavation It has found a Slab Culvert of 1x1.50M Span)	1 X 1.50 Dia	9.5
60	31.232		1 X 0.30 Dia	
61	31.367	HP	1 X 0.90 Dia	10
62	31.703	R.C.C SLAB	1x3.00	9.7
63	31.897	HP	1 X 1.00 Dia	12.1
64	32.269	R.C.C SLAB	1x1.60	10.5
65	32.721	R.C.C SLAB	1x1.50	10.8
66	33.102	R.C.C SLAB	1x3.00	12.4

11. Busbays

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. Road side drains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
1	16.650	16.890		Kachha (Single Side)
2	16.890	17.000	Pucca (Single Side)	
3	17.000	17.015		Kachha (Single Side)
4	17.075	17.225		Kachha (Single Side)
5	17.250	17.720		Kachha (Single Side)
6	17.920	17.950	Pucca (Single Side)	
7	18.050	18.075		Kachha (Single Side)
8	18.100	18.340		Kachha (Single Side)
9	18.775	18.855		Kachha (Single Side)
10	19.000	19.425		Kachha (Single Side)
11	19.615	19.750		Kachha (Single Side)
12	20.675	20.800		Kachha (Single Side)
13	20.800	20.815	Pucca (Single Side)	
14	20.815	20.860		Kachha (Single Side)
15	20.920	20.940		Kachha (Single Side)
16	20.940	21.050	Pucca (Single Side)	
17	21.050	21.210		Kachha (Single Side)
18	22.185	22.780		Kachha (Single Side)
19	23.485	24.710		Kachha (Single Side)
20	25.000	25.175		Kachha (Single Side)
21	25.300	25.375		Kachha (Single Side)
22	25.400	25.475		Kachha (Single Side)
23	25.550	25.650		Kachha (Single Side)
24	25.650	25.700	Pucca (Single Side)	
25	25.700	25.875		Kachha (Single Side)
26	25.875	25.980	Pucca (Single Side)	
27	25.980	26.150		Kachha (Single Side)
28	26.200	26.980		Kachha (Single Side)
29	27.331	28.300		Kachha (Single Side)
30	28.350	28.560		Kachha (Single Side)
31	28.700	28.725		Kachha (Single Side)
32	28.815	28.880		Kachha (Single Side)
33	28.935	29.110		Kachha (Single Side)
34	30.480	31.250		Kachha (Single Side)
35	31.380	31.450		Kachha (Single Side)
36	31.450	31.660	Pucca (Single Side)	
37	31.660	31.720		Kachha (Single Side)
38	32.000	32.615		Kachha (Single Side)
39	32.715	33.190		Kachha (Single Side)

14. Major junctions

The details of major 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	Type of Junction	Cross Road
1	16+110		T	3-Legged
2	16+290		T	3-Legged
3	16+435		T	3-Legged
4	17+020		T	3-Legged
5	17+125		T	3-Legged
6	17+925		T	3-Legged
7	18+020		Y	3-Legged
8	18+570		T	3-Legged
9	19+605		Y	3-Legged
10	19+800		Y	3-Legged
11	20+165		Y	3-Legged
12	20+300		Y	3-Legged
13	24+055		Y	3-Legged
14	24+105		Y	3-Legged
15	25+900		T	3-Legged
16	26+885		Y	3-Legged
16	28+675		Y	3-Legged

6. 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.]

Annex – II

(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 are 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 –A.

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 on site/design requirement.

(ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per 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] hard 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	Keithelmanbi	16+300	16+820	7	As per attached TCS drawing	7 m Carriageway
2	T. Nangjol	16+900	18+000	7	As per attached TCS drawing	7 m Carriageway
3	Kotlen	28+380	28+850	7	As per attached TCS drawing	7 m Carriageway
4	Kharam	30+850	31+050	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 Genera lFeatures

(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 40 kmph are summarized below:

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
1	16+991 to 17+009	Sharp Bend	Design Speed = 20 Kmph
2	17+205 to 17+242	Sharp Bend	Design Speed = 30 Kmph
3	17+357 to 17+398	Sharp Bend	Design Speed = 20 Kmph
4	17+676 to 17+784	Sharp Bend	Design Speed = 30 Kmph
5	17+902 to 17+919	Sharp Bend	Design Speed = 30 Kmph
6	18+037 to 18+047	Sharp Bend	Design Speed = 30 Kmph
7	18+416 to 18+455	Sharp Bend	Design Speed = 30 Kmph
8	18+744 to 18+758	Sharp Bend	Design Speed = 20 Kmph
9	18+810 to 18+897	Sharp Bend	Design Speed = 30 Kmph
10	18+937 to 18+946	Sharp Bend	Design Speed = 30 Kmph
11	18+994 to 19+033	Sharp Bend	Design Speed = 20 Kmph
12	19+372 to 19+400	Sharp Bend	Design Speed = 30 Kmph
13	19+445 to 19+492	Sharp Bend	Design Speed = 30 Kmph
14	19+527 to 19+551	Sharp Bend	Design Speed = 30 Kmph
15	19+595 to 19+635	Sharp Bend	Design Speed = 20 Kmph
16	19+688 to 19+728	Sharp Bend	Design Speed = 30 Kmph
17	19+839 to 19+881	Sharp Bend	Design Speed = 30 Kmph
18	19+982 to 19+997	Sharp Bend	Design Speed = 30 Kmph
19	20+110 to 20+114	Sharp Bend	Design Speed = 30 Kmph
20	20+155 to 20+201	Sharp Bend	Design Speed = 20 Kmph
21	20+237 to 20+253	Sharp Bend	Design Speed = 20 Kmph
22	20+287 to 20+474	Sharp Bend	Design Speed = 30 Kmph
23	20+599 to 20+636	Sharp Bend	Design Speed = 30 Kmph
24	20+834 to 20+868	Sharp Bend	Design Speed = 20 Kmph
25	20+941 to 20+983	Sharp Bend	Design Speed = 30 Kmph
26	21+253 to 21+264	Sharp Bend	Design Speed = 20 Kmph
27	21+295 to 21+334	Sharp Bend	Design Speed = 20 Kmph
28	21+506 to 21+545	Sharp Bend	Design Speed = 20 Kmph
29	21+611 to 21+628	Sharp Bend	Design Speed = 20 Kmph
30	21+673 to 21+695	Sharp Bend	Design Speed = 20 Kmph
31	21+778 to 21+819	Sharp Bend	Design Speed = 20 Kmph
32	21+949 to 21+966	Sharp Bend	Design Speed = 20 Kmph
33	22+044 to 22+048	Sharp Bend	Design Speed = 30 Kmph
34	22+094 to 22+131	Sharp Bend	Design Speed = 30 Kmph
35	22+201 to 22+211	Sharp Bend	Design Speed = 30 Kmph
36	22+271 to 22+305	Sharp Bend	Design Speed = 30 Kmph
37	22+405 to 22+458	Sharp Bend	Design Speed = 30 Kmph
38	22+507 to 22+518	Sharp Bend	Design Speed = 30 Kmph
39	22+559 to 22+641	Sharp Bend	Design Speed = 30 Kmph
40	22+881 to 22+895	Sharp Bend	Design Speed = 30 Kmph
41	23+188 to 23+219	Sharp Bend	Design Speed = 20 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
42	23+257 to 23+344	Sharp Bend	Design Speed = 30 Kmph
43	23+390 to 23+416	Sharp Bend	Design Speed = 20 Kmph
44	23+462 to 23+573	Sharp Bend	Design Speed = 30 Kmph
45	23+606 to 23+702	Sharp Bend	Design Speed = 30 Kmph
46	23+744 to 23+748	Sharp Bend	Design Speed = 30 Kmph
47	24+330 to 24+344	Sharp Bend	Design Speed = 30 Kmph
48	25+053 to 25+059	Sharp Bend	Design Speed = 30 Kmph
49	25+264 to 25+287	Sharp Bend	Design Speed = 30 Kmph
50	25+341 to 25+374	Sharp Bend	Design Speed = 20 Kmph
51	25+492 to 25+525	Sharp Bend	Design Speed = 30 Kmph
52	25+671 to 25+693	Sharp Bend	Design Speed = 30 Kmph
53	26+012 to 26+034	Sharp Bend	Design Speed = 20 Kmph
54	26+075 to 26+084	Sharp Bend	Design Speed = 20 Kmph
55	26+133 to 26+166	Sharp Bend	Design Speed = 30 Kmph
56	26+230 to 26+237	Sharp Bend	Design Speed = 30 Kmph
57	26+276 to 26+293	Sharp Bend	Design Speed = 30 Kmph
58	26+499 to 26+527	Sharp Bend	Design Speed = 20 Kmph
59	26+547 to 26+582	Sharp Bend	Design Speed = 20 Kmph
60	26+652 to 26+672	Sharp Bend	Design Speed = 20 Kmph
61	26+692 to 26+746	Sharp Bend	Design Speed = 20 Kmph
62	26+785 to 26+788	Sharp Bend	Design Speed = 30 Kmph
63	26+840 to 26+853	Sharp Bend	Design Speed = 30 Kmph
64	26+889 to 26+947	Sharp Bend	Design Speed = 30 Kmph
65	26+996 to 27+029	Sharp Bend	Design Speed = 30 Kmph
66	27+089 to 27+154	Sharp Bend	Design Speed = 30 Kmph
67	27+202 to 27+215	Sharp Bend	Design Speed = 20 Kmph
68	27+277 to 27+287	Sharp Bend	Design Speed = 30 Kmph
69	27+420 to 27+445	Sharp Bend	Design Speed = 30 Kmph
70	27+498 to 27+536	Sharp Bend	Design Speed = 30 Kmph
71	27+586 to 27+631	Sharp Bend	Design Speed = 30 Kmph
72	27+676 to 27+704	Sharp Bend	Design Speed = 30 Kmph
73	27+799 to 27+837	Sharp Bend	Design Speed = 30 Kmph
74	28+160 to 28+168	Sharp Bend	Design Speed = 20 Kmph
75	28+199 to 28+229	Sharp Bend	Design Speed = 20 Kmph
76	28+289 to 28+417	Sharp Bend	Design Speed = 20 Kmph
77	28+443 to 28+455	Sharp Bend	Design Speed = 20 Kmph
78	28+510 to 28+539	Sharp Bend	Design Speed = 30 Kmph
79	28+577 to 28+586	Sharp Bend	Design Speed = 30 Kmph
80	28+820 to 28+827	Sharp Bend	Design Speed = 30 Kmph
81	28+879 to 28+897	Sharp Bend	Design Speed = 30 Kmph
82	29+163 to 29+182	Sharp Bend	Design Speed = 30 Kmph
83	29+493 to 29+513	Sharp Bend	Design Speed = 30 Kmph
84	30+023 to 30+075	Sharp Bend	Design Speed = 30 Kmph
85	30+118 to 30+130	Sharp Bend	Design Speed = 30 Kmph
86	30+265 to 30+284	Sharp Bend	Design Speed = 30 Kmph
87	30+300 to 30+333	Sharp Bend	Design Speed = 30 Kmph
88	30+444 to 30+457	Sharp Bend	Design Speed = 30 Kmph
89	30+500 to 30+533	Sharp Bend	Design Speed = 20 Kmph
90	31+097 to 31+131	Sharp Bend	Design Speed = 20 Kmph
91	31+207 to 31+230	Sharp Bend	Design Speed = 30 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
92	31+271 to 31+305	Sharp Bend	Design Speed = 30 Kmph
93	31+640 to 31+674	Sharp Bend	Design Speed = 20 Kmph
94	32+021 to 32+030	Sharp Bend	Design Speed = 30 Kmph
95	32+873 to 32+884	Sharp Bend	Design Speed = 30 Kmph
96	32+919 to 32+940	Sharp Bend	Design Speed = 30 Kmph
97	32+988 to 32+996	Sharp Bend	Design Speed = 30 Kmph
98	33+054 to 33+088	Sharp Bend	Design Speed = 20 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

[Refer to provision of relevant manual]. 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	16+300 to 16+850	2X2.5 m paved shoulder & 2X1.75 m footpath	TCS-1
2	16+970 to 17+200	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
3	23+850 to 24+000	2X1.5 m paved shoulder &1X1.0 m footpath	TCS-7
4	25+750 to 25+850	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
5	28+370 to 28+850	2X1.5 m paved shoulder & 1X1.0 m footpath	TCS-7
6	30+850 to 31+050	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 requirement specified in the relevant Manual.

(vi) Lateral and vertical clearances 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 under passes 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 ofservice road(fromkmtokm)	Righthandside(RHS)/Lefthand side(LHS)/orBothsides	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 andlengthofspans	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 Type	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	0.550
TCS-2	Typical Cross Section of Two-Lane Carriageway with Paved Shoulder in Rural area in Plain Terrain (Reconstruction)	0.480
TCS-2A	Typical Cross Section of Two-Lane Carriageway with Paved Shoulder in Rural area in Hilly	0.365

TCS Type	Description	Length (Km)
	Terrain (Reconstruction)	
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)	10.320
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)	0.260
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)	1.050
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)	2.925
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)	0.230
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)	0.930
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)	0.070
	Total Proposed Length of Project Road = 17.810 Km	

Design Chainage (m)		Length of CD (m)	Net Length (m)	TCS No.
From	To			
15940	16300	6.14	353.86	TCS-2
16300	16850	3.96	546.04	TCS-1
16850	16970		120	TCS-2
16970	17200	2.7	227.3	TCS-6
17200	17270	3.96	66.04	TCS-8
17270	17320		50	TCS-5
17320	17475		155	TCS-2A
17475	17525		50	TCS-4
17525	18225	7.9	692.1	TCS-3
18225	18275		50	TCS-4
18275	18350		75	TCS-5
18350	18410	2.6	57.4	TCS-4
18410	18590	3.96	176.04	TCS-3
18590	18670	2.7	77.3	TCS-4
18670	18750		80	TCS-3
18750	18825	2.7	72.3	TCS-2A
18825	19385	5.3	554.7	TCS-3
19385	19435		50	TCS-4
19435	19625	9.22	180.78	TCS-3
19625	19675		50	TCS-4
19675	20030	9.22	345.78	TCS-3
20030	20090		60	TCS-3A
20090	20225	2.6	132.4	TCS-2A
20225	20300	3.96	71.04	TCS-3
20300	23100	44.7	2755.3	TCS-5
23100	23850	7.92	742.08	TCS-3
23850	24000	2.6	147.4	TCS-7
24000	25750	28.52	1721.48	TCS-3
25750	25850		100	TCS-7
25850	25960		110	TCS-3

Design Chainage (m)		Length of CD (m)	Net Length (m)	TCS No.
From	To			
25960	26010		50	TCS-4
26010	26850	12.06	827.94	TCS-3
26850	27050	2.6	197.4	TCS-3A
27050	28370	26.22	1293.78	TCS-3
28370	28850	2.6	477.4	TCS-7
28850	29310	9.04	450.96	TCS-3
29310	29360		50	TCS-4
29360	29425		65	TCS-3
29425	29510	3.96	81.04	TCS-4
29510	30075	5.3	559.7	TCS-3
30075	30215		140	TCS-4
30215	30850	5.3	629.7	TCS-3
30850	31050	2.7	197.3	TCS-7
31050	31800	14.36	735.64	TCS-3
31800	31925		125	TCS-4
31925	31975		50	TCS-3
31975	32060		85	TCS-4
32060	32350	2.7	287.3	TCS-3
32350	32415		65	TCS-4
32415	32530	2.7	112.3	TCS-3
32530	32580		50	TCS-4
32580	32775		195	TCS-3
32775	32835	3.84	56.16	TCS-4
32835	33120	8	277	TCS-3
Total Length =		**252**	**16928**	

3.Intersections and GradeSeparators

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	16+110	T-Type	3-Legged
2	16+290	T-Type	3-Legged
3	16+435	T-Type	3-Legged
4	17+010	T-Type	3-Legged
5	17+710	T-Type	3-Legged

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
6	17+910	T-Type	3-Legged
7	17+990	Y-Type	3-Legged
8	18+545	T-Type	3-Legged
9	19+590	Y-Type	3-Legged
10	19+765	Y-Type	3-Legged
11	20+120	Y-Type	3-Legged
12	20+260	Y-Type	3-Legged
13	23+900	Y-Type	3-Legged
14	23+950	Y-Type	3-Legged
15	25+750	T-Type	3-Legged
16	26+710	Y-Type	3-Legged
17	28+450	Y-Type	3-Legged

(ii) Grade separatedintersection with/without ramps

Sl. No.	Location	Salient features	Minimumlengthof viaduct tobe provided	Roadtobecarried over/underthe 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	15+940 to 16+300	Reconstruction	TCS-2
2	16+300 to 16+850	Reconstruction	TCS-1
3	16+850 to 16+970	Reconstruction	TCS-2
4	16+970 to 17+200	Reconstruction	TCS-6
5	17+200 to 17+270	Reconstruction	TCS-8
6	17+270 to 17+320	Reconstruction	TCS-5
7	17+320 to 17+475	Reconstruction	TCS-2A
8	17+475 to 17+525	Reconstruction	TCS-4
9	17+525 to 18+225	Reconstruction	TCS-3
10	18+225 to 18+275	Reconstruction	TCS-4
11	18+275 to 18+350	Reconstruction	TCS-5
12	18+350 to 18+410	Reconstruction	TCS-4
13	18+410 to 18+590	Reconstruction	TCS-3
14	18+590 to 18+670	Reconstruction	TCS-4
15	18+670 to 18+750	Reconstruction	TCS-3
16	18+750 to 18+825	Reconstruction	TCS-2A
17	18+825 to 19+385	Reconstruction	TCS-3
18	19+385 to 19+435	Reconstruction	TCS-4
19	19+435 to 19+625	Reconstruction	TCS-3
20	19+625 to 19+675	Reconstruction	TCS-4
21	19+675 to 20+030	Reconstruction	TCS-3
22	20+090 to 20+225	Reconstruction	TCS-2A
23	20+225 to 20+300	Reconstruction	TCS-3
24	20+300 to 23+100	Reconstruction	TCS-5
25	23+100 to 23+850	Reconstruction	TCS-3
26	23+850 to 24+000	Reconstruction	TCS-7
27	24+000 to 25+750	Reconstruction	TCS-3
28	25+750 to 25+850	Reconstruction	TCS-7
29	25+850 to 25+960	Reconstruction	TCS-3
30	25+960 to 26+010	Reconstruction	TCS-4
31	26+010 to 26+850	Reconstruction	TCS-3
32	27+050 to 28+370	Reconstruction	TCS-3
33	28+370 to 28+850	Reconstruction	TCS-7
34	28+850 to 29+310	Reconstruction	TCS-3
35	29+310 to 29+360	Reconstruction	TCS-4

SL NO.	Stretch from Km to Km	Remarks	TCS Type
36	29+360 to 29+425	Reconstruction	TCS-3
37	29+425 to 29+510	Reconstruction	TCS-4
38	29+510 to 30+075	Reconstruction	TCS-3
39	30+075 to 30+215	Reconstruction	TCS-4
40	30+215 to 30+850	Reconstruction	TCS-3
41	30+850 to 31+050	Reconstruction	TCS-7
42	31+050 to 31+800	Reconstruction	TCS-3
43	31+800 to 31+925	Reconstruction	TCS-4
44	31+925 to 31+975	Reconstruction	TCS-3
45	31+975 to 32+060	Reconstruction	TCS-4
46	32+060 to 32+350	Reconstruction	TCS-3
47	32+350 to 32+415	Reconstruction	TCS-4
48	32+415 to 32+530	Reconstruction	TCS-3
49	32+530 to 32+580	Reconstruction	TCS-4
50	32+580 to 32+775	Reconstruction	TCS-3
51	32+775 to 32+835	Reconstruction	TCS-4
52	32+835 to 33+120	Reconstruction	TCS-3

6. Road side 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				
16300	16850	3.96	1092.1	TCS-1	Both
16970	17200	2.7	454.6	TCS-6	Both
23850	24000	2.6	147.4	TCS-7	Valley
25750	25850	0	100.0	TCS-7	Valley
28370	28850	2.6	477.4	TCS-7	Valley
30850	31050	2.7	197.3	TCS-7	Valley
Total =			**2469**		

RR Masonry Trapezoidal Drain

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side
From	To				
17475	17525	0	50.0	TCS-4	Hill
17525	18225	7.9	692.1	TCS-3	Hill
18225	18275	0	50.0	TCS-4	Hill
18350	18410	2.6	57.4	TCS-4	Hill
18410	18590	3.96	176.0	TCS-3	Hill
18590	18670	2.7	77.3	TCS-4	Hill
18670	18750	0	80.0	TCS-3	Hill
18825	19385	5.3	554.7	TCS-3	Hill
19385	19435	0	50.0	TCS-4	Hill
19435	19625	9.22	180.8	TCS-3	Hill
19625	19675	0	50.0	TCS-4	Hill
19675	20030	9.22	345.8	TCS-3	Hill
20030	20090	0	60.0	TCS-3A	Hill
20225	20300	3.96	71.0	TCS-3	Hill

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side
From	To				
23100	23850	7.92	742.1	TCS-3	Hill
24000	25750	28.52	1721.5	TCS-3	Hill
25850	25960	0	110.0	TCS-3	Hill
25960	26010	0	50.0	TCS-4	Hill
26010	26850	12.06	827.9	TCS-3	Hill
26850	27050	2.6	197.4	TCS-3A	Hill
27050	28370	26.22	1293.8	TCS-3	Hill
28850	29310	9.04	451.0	TCS-3	Hill
29310	29360	0	50.0	TCS-4	Hill
29360	29425	0	65.0	TCS-3	Hill
29425	29510	3.96	81.0	TCS-4	Hill
29510	30075	5.3	559.7	TCS-3	Hill
30075	30215	0	140.0	TCS-4	Hill
30215	30850	5.3	629.7	TCS-3	Hill
31050	31800	14.36	735.6	TCS-3	Hill
31800	31925	0	125.0	TCS-4	Hill
31925	31975	0	50.0	TCS-3	Hill
31975	32060	0	85.0	TCS-4	Hill
32060	32350	2.7	287.3	TCS-3	Hill
32350	32415	0	65.0	TCS-4	Hill
32415	32530	2.7	112.3	TCS-3	Hill
32530	32580	0	50.0	TCS-4	Hill
32580	32775	0	195.0	TCS-3	Hill
32775	32835	3.84	56.2	TCS-4	Hill
32835	33120	8	277.0	TCS-3	Hill
Total =			**11453**		

Catch water Drain

Chainage (m)		Length of CD	Net Length (m)	Side
From	To			
17270	17320	0	50.0	Hill
18275	18350	0	75.0	Hill
20300	23100	44.7	2755.3	Hill
23850	24000	2.6	147.4	Hill
25750	25850	0	100.0	Hill
28370	28850	2.6	477.4	Hill
30850	31050	2.7	197.3	Hill
Total =			**3605**	

Catch water drain= 3605 m

Total No of Trapezoidal Drain= 15058 m

Chute Drain(of avg 8 m height @ 50m Interval) = 577 m

7. Design ofStructures

(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 carriageway 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 carriage way 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	25.348	**Carriageway Width = 11.0m** **Width of Railings = 1.0m (2x0.50m)** **Overall width =12 m**
2	33.080	

(c) The following structures shall be provided with footpaths:

[Refer to provision of the relevant Manual and provide details of new Structures with footpath]

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

(d) All bridges shall be high-level bridges.

[Refer to provision of the relevant Manual and state if there is any exception]

(e) The following structures shall be designed to carry utility services specified in Table below:

[Refer to provision of the relevant Manualand provide details]

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

(f) Cross-section of the new culverts and bridges at deck level for the Project Highway shall conform to the typical cross-sections given in the provision of the relevant Manual.

(ii) Culverts

(a) Overall width of all culverts shall be equal to the roadway width of the approaches.

(b) Reconstruction of existing culverts:

Theexistingculvertsatthefollowinglocationsshallbere-constructedasnew culverts:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	16.119	5.0 X 3.0	Single Span
2	16.530	3.0 X 4.0	Single Span
3	17.016	2.0 X 3.0	Single Span
4	17.248	3.0 X 4.0	Single Span
5	18.029	2.0 X 3.0	Single Span
6	18.141	2.0 X 2.0	Single Span
7	18.393	2.0 X 2.0	Single Span
8	18.564	3.0 X 4.0	Single Span
9	18.650	2.0 X 3.0	Single Span
10	18.762	2.0 X 3.0	Single Span
11	19.010	2.0 X 2.0	Single Span
12	19.267	2.0 X 3.0	Single Span

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
13	19.490	4.0 X 5.0	Single Span
14	19.619	3.0 X 4.0	Single Span
15	19.883	4.0 X 5.0	Single Span
16	19.955	3.0 X 4.0	Single Span
17	20.106	2.0 X 2.0	Single Span
18	20.254	3.0 X 4.0	Single Span
19	20.615	4.0 X 5.0	Single Span
20	20.849	4.0 X 3.0	Single Span
21	21.260	2.0 X 3.0	Single Span
22	21.562	3.0 X 4.0	Single Span
23	21.648	2.0 X 3.0	Single Span
24	21.755	2.0 X 2.0	Single Span
25	22.039	3.0 X 4.0	Single Span
26	22.257	3.0 X 4.0	Single Span
27	22.299	2.0 X 3.0	Single Span
28	22.376	2.0 X 3.0	Single Span
29	22.516	3.0 X 4.0	Single Span
30	22.728	2.0 X 2.0	Single Span
31	22.874	2.0 X 2.0	Single Span
32	23.195	3.0 X 4.0	Single Span
33	23.411	3.0 X 4.0	Single Span
34	24.510	2.0 X 2.0	Single Span
35	24.836	3.0 X 4.0	Single Span
36	25.381	3.0 X 4.0	Single Span
37	25.643	2.0 X 3.0	Single Span
38	26.074	3.0 X 4.0	Single Span
39	26.430	2.0 X 3.0	Single Span
40	26.666	2.0 X 3.0	Single Span
41	26.840	2.0 X 3.0	Single Span
42	26.916	2.0 X 2.0	Single Span
43	27.096	2.0 X 2.0	Single Span
44	27.150	3.0 X 4.0	Single Span
45	27.284	2.0 X 2.0	Single Span
46	27.481	2.0 X 2.0	Single Span
47	27.529	2.0 X 3.0	Single Span
48	27.684	2.0 X 2.0	Single Span
49	27.893	3.0 X 4.0	Single Span
50	28.002	2.0 X 2.0	Single Span
51	28.167	2.0 X 2.0	Single Span
52	28.655	2.0 X 2.0	Single Span
53	28.879	2.0 X 2.0	Single Span
54	28.949	3.0 X 3.0	Single Span
55	29.501	3.0 X 4.0	Single Span
56	29.610	2.0 X 3.0	Single Span
57	30.033	2.0 X 2.0	Single Span
58	30.775	2.0 X 3.0	Single Span
59	30.982	2.0 X 3.0	Single Span
60	31.117	4.0 X 5.0	Single Span
61	31.450	3.0 X 3.0	Single Span
62	31.646	4.0 X 5.0	Single Span
63	32.060	2.0 X 3.0	Single Span

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
64	32.460	2.0 X 3.0	Single Span
65	32.832	3.0 X 3.0	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 width of existing culvert(m)	Repairs to be carried out [specify]
Nil			

(d) Additionalnewculvertsshallbeconstructedasperparticularsgiveninthe table below:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	17.532	2.0 X 2.0	Single Span
2	23.870	2.0 X 2.0	Single Span
3	24.164	2.0 X 3.0	Single Span
4	25.130	2.0 X 2.0	Single Span
5	29.220	2.0 X 2.0	Single Span
6	30.415	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	Type of repair required
Nil		

(f) Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

(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]

[Refer provision of the relevant Manualand provide details]

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	25+348	RCC SLAB	1x10.7M	Insufficient width and not conform to IRC Loading	Proposed as RCC SLAB (1 X 10m)
2	33+080	RCC SLAB	1x8.5M	Insufficient width and not conform to IRC Loading	Proposed as RCC SLAB (1 X 8m)

(ii) The following narrow bridges shall bewidened:

Sl. No.	Location (km)	Existing width(m)	Extent of widening(m)	Cross-sectionatdeck 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
Nil			

(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 at km	Remarks
Nil		

(d) Repairs/replacements of railing/parapets of the existing bridges shall be undertaken as follows:

[Refer to provision of the relevant Manualand provide details]

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

(e) Drainage system for bridge decks

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

(f) Structures in marine environment

[Refer to provision of the relevant Manual and specify the necessary measures/ treatments for protecting structures in marine environment. Where applicable]

(v) Rail-road bridges

(a) DesignconstructionanddetailingofROB/RUBshallbeasspecifiedinprovisionofthe relevant Manual [Refer to provision of the relevant Manual and specify modification, if any]

(b) Road over-bridges

Road over-bridges (road over rail) shall be provided at the following level crossings. As per GAD drawings attached:

Sl. No.	Location of Level crossing (Chainage km)	Length of bridge (m)
Nil		

(c)Road under-bridges

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

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

(v) Grade separated structures

[Refer provision of the relevant Manual]

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

(vi) Repairs and strengthening of bridges and structures

[Refer to provision of the relevant Manual and provide details]

The existing bridges and structures to be repaired/strengthened and the nature and extent of repairs /strengthening required 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)	Nature and extent of repairs/strengthening to be carried out
Nil		

(c) Overpasses/Underpasses and other structures

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

(vii) List of Major Bridges and Structures

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

Sl. No.	Location (Km)
Nil	

8. Traffic Control Devices and Road Safety Works

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

Sl. No	Traffic Signages, Road Marking and other appurtenances	unit	Quantity
1	Total Nos. of Street Light=	Nos	53
2	Kilometre stones=	Nos	14
3	5th Kilometre stones=	Nos	3
4	Boundary Stones=	Nos	174
5	Delineators (100 cm long and circular shaped) +Hazard marker =	Nos	2005
6	Road Stud=	Nos	9726
7	900 mm Octagonal	Nos	17

Sl. No	Traffic Signages, Road Marking and other appurtenances	unit	Quantity
8	600 mm circular	Nos	66
9	900 mm Triangular	Nos	274
10	800 mm x 600 mm rectangular	Nos	6
11	Convex Mirror for Blind Curve	Nos	36
12	Rumble Strip=	sqm	580

(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 traffic signs: location and size

Sl. No.	Location (Km)	Size
Nil		

10. Compulsory Afforestation

[Refer to provision of relevant Manual and specify the number of trees which are required to be planted by the Contractor as compensatory a forestation.]

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					
17200	17270	3.96	66.0	TCS-8	Valley	2
17475	17525	0	50.0	TCS-4	Valley	2
18225	18275	0	50.0	TCS-4	Valley	2
18350	18410	2.6	57.4	TCS-4	Valley	2
18590	18670	2.7	77.3	TCS-4	Valley	2
19385	19435	0	50.0	TCS-4	Valley	2
19625	19675	0	50.0	TCS-4	Valley	2
25960	26010	0	50.0	TCS-4	Valley	2
29310	29360	0	50.0	TCS-4	Valley	2
29425	29510	3.96	81.0	TCS-4	Valley	2
30075	30215	0	140.0	TCS-4	Valley	2
31800	31925	0	125.0	TCS-4	Valley	2
31975	32060	0	85.0	TCS-4	Valley	2
32350	32415	0	65.0	TCS-4	Valley	2
32530	32580	0	50.0	TCS-4	Valley	2
32775	32835	3.84	56.2	TCS-4	Valley	2
Total =			**1103**			

b) Breast Wall

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side
From	To				
17270	17320	0	50.0	TCS-5	Hill
18275	18350	0	75.0	TCS-5	Hill

20300	23100	44.7	2755.3	TCS-5	Hill
23850	24000	2.6	147.4	TCS-7	Hill
25750	25850	0	100.0	TCS-7	Hill
28370	28850	2.6	477.4	TCS-7	Hill
30850	31050	2.7	197.3	TCS-7	Hill
Total =			**3802**		

c) Metal Beam Crash Barrier

Chainage (m)		**Net Length (m)**	**Side**
From	**To**		
20300	20500	200.0	Valley
21500	21750	250.0	Valley
22050	22250	200.0	Valley
22380	22625	245.0	Valley
23550	23750	200.0	Valley
24120	24220	100.0	Valley
24850	25100	250.0	Valley
25560	25660	100.0	Valley
26100	26200	100.0	Valley
26480	26630	150.0	Valley
26950	27250	300.0	Valley
27150	27250	100.0	Valley
27550	27650	100.0	Valley
28150	28300	150.0	Valley
28950	29300	350.0	Valley
30480	30580	100.0	Valley
31320	31420	100.0	Valley
31925	31975	50.0	Valley
32130	32280	150.0	Valley
32730	32880	150.0	Valley
Total =		**3345.0**	

Total no. of Bridges on the project=	2 nos.
Approach length on valley side for each bridge (25 m on both side)	50m
Hence, Crash barrier length for 2 bridges =	200m
Therefore, total length of crash barrier = (3345+200) m =	**3545m**

d) Railing

Chainage (m)		**Length of CD**	**Net Length (m)**	**TCS No.**	**Side**
From	**To**				
16300	16850	3.96	1092.1	TCS-1	Both
Total =			**1092**		

12. Special Requirement for Hill Roads

[Refer to the provision of relevant Manual and provide details where relevant and required.]

13. Change of Scope

The length of Structures and bridges specified hereinabove shall be treated as an

approximate assessment. The actual lengths as required based on 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.

(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) Road side 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	16+945 (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	25+755 (Both side)		
3	Bus Bay & Passenger shelter	28+075 (Both side)		

f) Rest Areas

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

g) Others to be specified

Street Lighting:
Total 53 Nos. Street lighting shall be provided in built-up areas, 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>Provision as per Manual</th><th>Modified Provision</th></tr>
<tr><td rowspan="4">Shoulder</td><td rowspan="4">2.6</td><td><u>Mountainous Terrain</u>
<table>
<tr><th>Type of Section</th><th>Side</th><th>Width of Shoulder (m)</th><th></th><th></th></tr>
<tr><th></th><th></th><th>Paved</th><th>Earthen</th><th>Total</th></tr>
<tr><td rowspan="2">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></tr>
<tr><td rowspan="2">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></tr>
<tr><td>Valley Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td></tr>
</table></td><td><u>Mountainous Terrain</u>
<table>
<tr><th>Type of Section</th><th>Side</th><th>Width of Shoulder (m)</th><th></th><th></th></tr>
<tr><th></th><th></th><th>Paved</th><th>Earthen</th><th>Total</th></tr>
<tr><td rowspan="2">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>1.0 m</td><td>2.5</td></tr>
<tr><td rowspan="2">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>Valley Side</td><td>1.5</td><td>-</td><td>1.5</td></tr>
</table></td></tr>
<tr><td>Design Speed</td><td>2.2</td><td><u>Mountainous Terrain:</u>
Ruling : 60 Kmph
Minimum : 40 Kmph</td><td><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>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>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 than40 kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
1	16+991 to 17+009	Sharp Bend	Design Speed = 20 Kmph
2	17+205 to 17+242	Sharp Bend	Design Speed = 30 Kmph
3	17+357 to 17+398	Sharp Bend	Design Speed = 20 Kmph
4	17+676 to 17+784	Sharp Bend	Design Speed = 30 Kmph
5	17+902 to 17+919	Sharp Bend	Design Speed = 30 Kmph
6	18+037 to 18+047	Sharp Bend	Design Speed = 30 Kmph
7	18+416 to 18+455	Sharp Bend	Design Speed = 30 Kmph
8	18+744 to 18+758	Sharp Bend	Design Speed = 20 Kmph
9	18+810 to 18+897	Sharp Bend	Design Speed = 30 Kmph
10	18+937 to 18+946	Sharp Bend	Design Speed = 30 Kmph
11	18+994 to 19+033	Sharp Bend	Design Speed = 20 Kmph
12	19+372 to 19+400	Sharp Bend	Design Speed = 30 Kmph
13	19+445 to 19+492	Sharp Bend	Design Speed = 30 Kmph
14	19+527 to 19+551	Sharp Bend	Design Speed = 30 Kmph
15	19+595 to 19+635	Sharp Bend	Design Speed = 20 Kmph
16	19+688 to 19+728	Sharp Bend	Design Speed = 30 Kmph
17	19+839 to 19+881	Sharp Bend	Design Speed = 30 Kmph
18	19+982 to 19+997	Sharp Bend	Design Speed = 30 Kmph
19	20+110 to 20+114	Sharp Bend	Design Speed = 30 Kmph
20	20+155 to 20+201	Sharp Bend	Design Speed = 20 Kmph
21	20+237 to 20+253	Sharp Bend	Design Speed = 20 Kmph
22	20+287 to 20+474	Sharp Bend	Design Speed = 30 Kmph
23	20+599 to 20+636	Sharp Bend	Design Speed = 30 Kmph
24	20+834 to 20+868	Sharp Bend	Design Speed = 20 Kmph
25	20+941 to 20+983	Sharp Bend	Design Speed = 30 Kmph
26	21+253 to 21+264	Sharp Bend	Design Speed = 20 Kmph
27	21+295 to 21+334	Sharp Bend	Design Speed = 20 Kmph
28	21+506 to 21+545	Sharp Bend	Design Speed = 20 Kmph
29	21+611 to 21+628	Sharp Bend	Design Speed = 20 Kmph
30	21+673 to 21+695	Sharp Bend	Design Speed = 20 Kmph
31	21+778 to 21+819	Sharp Bend	Design Speed = 20 Kmph
32	21+949 to 21+966	Sharp Bend	Design Speed = 20 Kmph
33	22+044 to 22+048	Sharp Bend	Design Speed = 30 Kmph
34	22+094 to 22+131	Sharp Bend	Design Speed = 30 Kmph
35	22+201 to 22+211	Sharp Bend	Design Speed = 30 Kmph
36	22+271 to 22+305	Sharp Bend	Design Speed = 30 Kmph
37	22+405 to 22+458	Sharp Bend	Design Speed = 30 Kmph
38	22+507 to 22+518	Sharp Bend	Design Speed = 30 Kmph
39	22+559 to 22+641	Sharp Bend	Design Speed = 30 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
40	22+881 to 22+895	Sharp Bend	Design Speed = 30 Kmph
41	23+188 to 23+219	Sharp Bend	Design Speed = 20 Kmph
42	23+257 to 23+344	Sharp Bend	Design Speed = 30 Kmph
43	23+390 to 23+416	Sharp Bend	Design Speed = 20 Kmph
44	23+462 to 23+573	Sharp Bend	Design Speed = 30 Kmph
45	23+606 to 23+702	Sharp Bend	Design Speed = 30 Kmph
46	23+744 to 23+748	Sharp Bend	Design Speed = 30 Kmph
47	24+330 to 24+344	Sharp Bend	Design Speed = 30 Kmph
48	25+053 to 25+059	Sharp Bend	Design Speed = 30 Kmph
49	25+264 to 25+287	Sharp Bend	Design Speed = 30 Kmph
50	25+341 to 25+374	Sharp Bend	Design Speed = 20 Kmph
51	25+492 to 25+525	Sharp Bend	Design Speed = 30 Kmph
52	25+671 to 25+693	Sharp Bend	Design Speed = 30 Kmph
53	26+012 to 26+034	Sharp Bend	Design Speed = 20 Kmph
54	26+075 to 26+084	Sharp Bend	Design Speed = 20 Kmph
55	26+133 to 26+166	Sharp Bend	Design Speed = 30 Kmph
56	26+230 to 26+237	Sharp Bend	Design Speed = 30 Kmph
57	26+276 to 26+293	Sharp Bend	Design Speed = 30 Kmph
58	26+499 to 26+527	Sharp Bend	Design Speed = 20 Kmph
59	26+547 to 26+582	Sharp Bend	Design Speed = 20 Kmph
60	26+652 to 26+672	Sharp Bend	Design Speed = 20 Kmph
61	26+692 to 26+746	Sharp Bend	Design Speed = 20 Kmph
62	26+785 to 26+788	Sharp Bend	Design Speed = 30 Kmph
63	26+840 to 26+853	Sharp Bend	Design Speed = 30 Kmph
64	26+889 to 26+947	Sharp Bend	Design Speed = 30 Kmph
65	26+996 to 27+029	Sharp Bend	Design Speed = 30 Kmph
66	27+089 to 27+154	Sharp Bend	Design Speed = 30 Kmph
67	27+202 to 27+215	Sharp Bend	Design Speed = 20 Kmph
68	27+277 to 27+287	Sharp Bend	Design Speed = 30 Kmph
69	27+420 to 27+445	Sharp Bend	Design Speed = 30 Kmph
70	27+498 to 27+536	Sharp Bend	Design Speed = 30 Kmph
71	27+586 to 27+631	Sharp Bend	Design Speed = 30 Kmph
72	27+676 to 27+704	Sharp Bend	Design Speed = 30 Kmph
73	27+799 to 27+837	Sharp Bend	Design Speed = 30 Kmph
74	28+160 to 28+168	Sharp Bend	Design Speed = 20 Kmph
75	28+199 to 28+229	Sharp Bend	Design Speed = 20 Kmph
76	28+289 to 28+417	Sharp Bend	Design Speed = 20 Kmph
77	28+443 to 28+455	Sharp Bend	Design Speed = 20 Kmph
78	28+510 to 28+539	Sharp Bend	Design Speed = 30 Kmph
79	28+577 to 28+586	Sharp Bend	Design Speed = 30 Kmph
80	28+820 to 28+827	Sharp Bend	Design Speed = 30 Kmph
81	28+879 to 28+897	Sharp Bend	Design Speed = 30 Kmph
82	29+163 to 29+182	Sharp Bend	Design Speed = 30 Kmph
83	29+493 to 29+513	Sharp Bend	Design Speed = 30 Kmph
84	30+023 to 30+075	Sharp Bend	Design Speed = 30 Kmph
85	30+118 to 30+130	Sharp Bend	Design Speed = 30 Kmph
86	30+265 to 30+284	Sharp Bend	Design Speed = 30 Kmph
87	30+300 to 30+333	Sharp Bend	Design Speed = 30 Kmph
88	30+444 to 30+457	Sharp Bend	Design Speed = 30 Kmph
89	30+500 to 30+533	Sharp Bend	Design Speed = 20 Kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks
90	31+097 to 31+131	Sharp Bend	Design Speed = 20 Kmph
91	31+207 to 31+230	Sharp Bend	Design Speed = 30 Kmph
92	31+271 to 31+305	Sharp Bend	Design Speed = 30 Kmph
93	31+640 to 31+674	Sharp Bend	Design Speed = 20 Kmph
94	32+021 to 32+030	Sharp Bend	Design Speed = 30 Kmph
95	32+873 to 32+884	Sharp Bend	Design Speed = 30 Kmph
96	32+919 to 32+940	Sharp Bend	Design Speed = 30 Kmph
97	32+988 to 32+996	Sharp Bend	Design Speed = 30 Kmph
98	33+054 to 33+088	Sharp Bend	Design Speed = 20 Kmph

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

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
1	56	16.879	16.884	60
2	57	16.991	17.009	20
3	58	17.071	17.117	50
4	59	17.205	17.242	35
5	60	17.357	17.398	20
6	61	17.460	17.474	70
7	62	17.589	17.599	60
8	63	17.676	17.784	45
9	64	17.902	17.919	30
10	65	18.037	18.047	30
11	68	18.416	18.455	40
12	71	18.744	18.758	20
13	73	18.937	18.946	40
14	74	18.994	19.033	20
15	75	19.120	19.171	60
16	76	19.265	19.317	70
17	77	19.372	19.400	60
18	78	19.445	19.492	60
19	79	19.527	19.551	70
20	80	19.595	19.635	20
21	81	19.688	19.728	30
22	82	19.839	19.881	40
23	83	19.982	19.997	50
24	84	20.110	20.114	45
25	85	20.155	20.201	35
26	86	20.237	20.253	30
27	88	20.599	20.636	40
28	89	20.834	20.868	20
29	90	20.941	20.983	50
30	93	21.253	21.264	30
31	94	21.295	21.334	30
32	95	21.506	21.545	30
33	96	21.611	21.628	25
34	97	21.673	21.695	30
35	98	21.778	21.819	20
36	99	21.949	21.966	20
37	100	22.044	22.048	60

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
38	101	22.094	22.131	50
39	102	22.201	22.211	30
40	103	22.271	22.305	30
41	104	22.405	22.458	45
42	105	22.507	22.518	50
43	106	22.559	22.641	50
44	108	22.881	22.895	40
45	111	23.188	23.219	20
46	112	23.257	23.344	65
47	113	23.390	23.416	20
48	115	23.606	23.702	70
49	119	24.144	24.204	70
50	120	24.330	24.344	50
51	121	24.469	24.483	60
52	122	24.550	24.557	70
53	125	24.890	24.933	70
54	126	25.053	25.059	40
55	128	25.264	25.287	50
56	129	25.341	25.374	20
57	130	25.492	25.525	40
58	131	25.671	25.693	50
59	132	25.821	25.834	70
60	134	26.012	26.034	20
61	135	26.075	26.084	20
62	136	26.133	26.166	40
63	137	26.230	26.237	60
64	138	26.276	26.293	50
65	139	26.388	26.452	60
66	141	26.547	26.582	25
67	142	26.652	26.672	20
68	144	26.785	26.788	40
69	145	26.840	26.853	40
70	147	26.996	27.029	40
71	148	27.089	27.154	40
72	149	27.202	27.215	20
73	150	27.277	27.287	50
74	151	27.420	27.445	50
75	152	27.498	27.536	30
76	153	27.586	27.631	50
77	154	27.676	27.704	40
78	155	27.799	27.837	40
79	157	28.160	28.168	30
80	158	28.199	28.229	30
81	160	28.443	28.455	20
82	161	28.510	28.539	60
83	162	28.577	28.586	60
84	163	28.658	28.658	70
85	165	28.820	28.827	50
86	166	28.879	28.897	30
87	169	29.280	29.283	50

Sl. No.	HIP NO.	CHAINAGE (KM)		RADIUS
		From	To	
88	171	29.493	29.513	50
89	178	30.118	30.130	40
90	180	30.265	30.284	60
91	183	30.500	30.533	20
92	185	30.916	30.939	55
93	186	31.097	31.131	25
94	187	31.207	31.230	50
95	188	31.271	31.305	50
96	189	31.364	31.408	70
97	191	31.640	31.674	25
98	195	31.962	31.970	60
99	198	32.188	32.217	60
100	202	32.555	32.562	50
101	203	32.637	32.698	60
102	204	32.792	32.812	50
103	205	32.873	32.884	60
104	206	32.919	32.940	50
105	207	32.988	32.996	50
106	208	33.054	33.088	20

(iii) [Note1: Deviations from the aforesaid Specifications and Standards shall be listed out here. Such deviations shall be specified only if they are considered essential in view of 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	71.92 %	**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	11.12%
		(2) Sub-base Course	15.6%
		(3) Non bituminous Base course	19.58%
		(4) Bituminous Basecourse	19.85%
		(5) Wearing Coat	10.12%
		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]

Item	Weightage in % of CP	Stage for Payment	Percentage
		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]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		D- Reconstruction & New Culverts on existing road, realignments, bypasses Culverts (length <6m)	23.72%
Minor bridge/ Underpasses/ Overpasses	2.92%	**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.	72.39%
		(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.	24.75%
		(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	2.86%
		(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	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
		respect and fit for use.	
Major bridge(length>60 m) works and ROB/RUB/elevated sections/flyovers including viaducts, if any	0.000 %	**A.1- Widening and repairs of Major Bridges**	
		(1)Foundation	[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)Guide Bunds,River Training works etc.	[Nil]
		(8)Approaches(including Retaining walls, stone pitching and protection works)	[Nil]
		A.2-NewMajorBridges	
		(1)Foundation	[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)Guide Bunds, River Training works etc.	[Nil]
		(8)Approaches(including Retaining walls, stone pitching and protection works)	[Nil]
		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	[Nil]

Item	Weightage in % of CP	Stage for Payment	Percentage
		walls/Reinforced Earth wall, stone pitching and protection works)	
		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	25.16 %	(i) Toll Plaza	[Nil]
		(ii) Road side drains	32.89%
		(iii) Road signs, markings, km stones, safety devices etc	6.16%
		(iv) Project facilities	
		a) Bus Bays	2.59%
		b) Truck Lay-byes	[Nil]
		c) Passenger Shelter	0.35%
		d) Rest Area	[Nil]
		e) Diversion Works	2.82%
		(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	37.16%
		(ix) Toe Wall	[Nil]
		(x) Retaining Wall	8.56%

Item	Weightage in % of CP	Stage for Payment	Percentage
		(xi) Crash Barrier	3.35%
		(xi) Boundary wall	[Nil]
		(xii) Site Clearance & Dismantling	6.13%
		(xiii) Protection Works	[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	11.12%	
(2) Sub-base Course	15.6%	
(3) Non bituminous Base course	19.58%	
(4) Bituminous Base course	19.85%	
(5) Wearing Coat	10.12%	
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)	23.72%	

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.	72.39%	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.	24.75%	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	2.86%	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	[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

Stage of Payment	Weightage	Payment Procedure
		lessthan25% 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. 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.
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

Stage of Payment	Weightage	Payment Procedure
		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, 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.

Stage of Payment	Weightage	Payment Procedure
		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 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	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road

Stage of Payment	Weightage	Payment Procedure
markings etc.		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]	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	32.89%	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.	6.16%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus Bays	2.59%	
b) Truck Lay-byes	[Nil]	
c) Passenger Shelter	0.35%	
d) Rest Area	[Nil]	
e) Diversion Works	2.82%	
(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.

Stage of Payment	Weightage	Payment Procedure
(8) Protection Works		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.
(a) Breast Wall	37.16%	
(b) Toe Wall	[Nil]	
(c)Retaining Wall	8.56%	
(c) Crash Barrier	3.35%	
(9) Site Clearance & Dismantling	6.13%	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	[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.