Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

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

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

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

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

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

Annex –I

(Schedule-A)

Site

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

1. Site

The Site of the [Two-Lane] Project Highway comprises the section of NH-202 commencing from km 117/980 to km 169/400 (Design km 95.700 to km 140.180) i.e. to Marren Khullen to Jessami section 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 (sum total of land already in possession and land to be possessed) as described below:

SL NO.	EXISTING CHAINAGE (km)		DESIGN CHAINAGE (km)		Existing ROW	Remarks
	From	To	From	To		
1	117+980	169+400	95+700	140.180	5-15 m approx.	

3. Carriageway

The present carriageway of the Project Highway is single Lane from km 117/980 to km 169/400. 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. Grade separators

The Site includes the following grade separators:

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

7. Minor bridges

The Site includes the following minor bridges:

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

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 following underpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
1	118.020	SLAB	1 X 0.9
2	118.330	SLAB	1 X 0.9
3	118.885	SLAB	1 X 1.0
4	119.075	SLAB	1 X 1.3
5	119.200	SLAB	1 X 0.9
6	119.530	SLAB	1 X 1.5
7	119.715	SLAB	1 X 0.9
8	119.885	SLAB	1 X 0.9
9	120.020	SLAB	1 X 1.3

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
10	120.160	SLAB	1 X 0.9
11	120.325	SLAB	1 X 1.1
12	120.390	SLAB	1 X 0.9
13	120.570	SLAB	1 X 0.85
14	121.320	SLAB	1 X 0.9
15	121.425	SLAB	1 X 0.85
16	121.645	SLAB	1 X 0.9
17	121.755	SLAB	1 X 1.5
18	121.815	SLAB	1 X 1.5
19	121.985	SLAB	1 X 1.5
20	122.270	SLAB	1 X 1.0
21	122.600	SLAB	1 X 1.0
22	122.570	SLAB	1 X 1.0
23	122.650	SLAB	1 X 1.0
24	122.900	SLAB	1 X 1.0
25	122.980	SLAB	1 X 0.9
26	123.080	SLAB	1 X 1.0
27	123.150	SLAB	1 X 1.5
28	123.180	SLAB	1 X 1.5
29	123.350	SLAB	1 X 1.3
30	123.430	SLAB	1 X 1.0
31	123.520	SLAB	1 X 0.8
32	123.640	SLAB	1 X 0.9
33	123.885	SLAB	1 X 1.0
34	124.200	SLAB	1 X 1.0
35	124.420	SLAB	1 X 0.5
36	124.510	SLAB	1 X 0.7
37	124.635	SLAB	1 X 0.85
38	124.925	SLAB	1 X 1.0
39	125.100	SLAB	1 X 1.4
40	125.215	SLAB	1 X 1.0
41	125.345	SLAB	1 X 0.9
42	125.420	SLAB	1 X 0.7
43	125.550	SLAB	1 X 0.9
44	125.660	SLAB	1 X 0.9
45	125.720	SLAB	1 X 1.3
46	125.880	SLAB	1 X 0.8
47	125.960	SLAB	1 X 1.3
48	126.150	SLAB	1 X 0.9
49	126.345	SLAB	1 X 3.0
50	126.475	SLAB	1 X 3.0
51	126.615	SLAB	1 X 1.1
52	126.665	SLAB	1 X 0.9
53	126.900	SLAB	1 X 0.9
54	127.045	SLAB	1 X 1.1

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
55	127.275	SLAB	1 X 1.1
56	127.470	SLAB	1 X 1.1
57	127.650	SLAB	1 X 1.1
58	127.805	SLAB	1 X 1.5
59	128.000	SLAB	1 X 1.2
60	128.110	SLAB	1 X 2.1
61	128.300	SLAB	1 X 0.9
62	128.390	SLAB	1 X 0.9
63	128.670	SLAB	1 X 1.0
64	128.810	SLAB	1 X 2.9
65	128.980	SLAB	1 X 1.0
66	129.890	SLAB	1 X 1.0
67	130.050	SLAB	1 X 1.4
68	130.210	SLAB	1 X 0.9
69	130.360	SLAB	1 X 1.5
70	130.480	SLAB	1 X 0.8
71	130.550	SLAB	1 X 1.3
72	130.670	SLAB	1 X 0.9
73	130.840	SLAB	1 X 1.0
74	130.930	SLAB	1 X 1.7
75	131.130	SLAB	1 X 0.9
76	131.370	SLAB	1 X 1.3
77	131.690	SLAB	1 X 2.9
78	131.965	SLAB	1 X 1.3
79	132.440	SLAB	1 X 0.8
80	132.610	SLAB	1 X 1.3
81	132.690	SLAB	1 X 1.2
82	132.715	SLAB	1 X 1.5
83	132.790	SLAB	1 X 1.4
84	132.970	SLAB	1 X 0.9
85	133.030	SLAB	1 X 1.0
86	133.170	SLAB	1 X 0.9
87	133.570	SLAB	1 X 0.8
88	133.830	SLAB	1 X 0.6
89	134.015	SLAB	1 X 0.8
90	134.080	SLAB	1 X 0.8
91	134.235	SLAB	1 X 0.9
92	134.340	SLAB	1 X 0.8
93	134.765	SLAB	1 X 0.9
94	134.940	SLAB	1 X 0.9
95	135.100	SLAB	1 X 0.9
96	135.480	SLAB	1 X 0.9
97	135.685	SLAB	1 X 1.3
98	135.945	SLAB	1 X 0.8
99	136.320	SLAB	1 X 0.85

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
100	136.575	SLAB	1 X 0.85
101	136.740	SLAB	1 X 0.85
102	137.000	SLAB	1 X 0.8
103	137.160	SLAB	1 X 0.9
104	137.500	SLAB	1 X 0.9
105	137.835	SLAB	1 X 0.5
106	137.995	SLAB	1 X 0.9
107	138.360	SLAB	1 X 0.9
108	139.000	SLAB	1 X 1.0
109	139.310	SLAB	1 X 0.9
110	139.580	SLAB	1 X 1.0
111	140.090	SLAB	1 X 0.9
112	140.340	SLAB	1 X 0.9
113	141.575	SLAB	1 X 1.3
114	141.740	SLAB	1 X 1.6
115	141.940	SLAB	1 X 1.7
116	142.070	SLAB	1 X 0.9
117	142.520	SLAB	1 X 1.0
118	142.740	SLAB	1 X 0.8
119	142.950	SLAB	1 X 1.5
120	143.165	SLAB	1 X 0.8
121	143.600	SLAB	1 X 0.9
122	144.715	SLAB	1 X 1.4
123	144.940	SLAB	1 X 1.4
124	145.165	SLAB	1 X 1.5
125	145.235	SLAB	1 X 1.5
126	145.850	SLAB	1 X 0.9
127	145.690	SLAB	1 X 0.9
128	146.045	SLAB	1 X 0.8
129	146.330	SLAB	1 X 1.0
130	146.590	SLAB	1 X 1.3
131	146.920	SLAB	1 X 1.5
132	147.050	SLAB	1 X 1.3
133	147.795	SLAB	1 X 0.9
134	148.300	SLAB	1 X 1.2
135	149.090	SLAB	1 X 0.9
136	149.360	SLAB	1 X 1.4
137	149.515	SLAB	1 X 1.4
138	149.890	SLAB	1 X 0.9
139	150.040	SLAB	1 X 1.4
140	150.160	SLAB	1 X 0.9
141	150.250	SLAB	1 X 0.9
142	150.340	SLAB	1 X 1.4
143	150.470	SLAB	1 X 0.9
144	150.520	SLAB	1 X 1.5

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
145	150.590	SLAB	1 X 0.9
146	150.840	SLAB	1 X 0.9
147	151.300	SLAB	1 X 1.5
148	151.540	SLAB	1 X 1.2
149	151.605	SLAB	1 X 0.9
150	151.895	SLAB	1 X 1.2
151	152.090	SLAB	1 X 0.9
152	152.170	SLAB	1 X 1.2
153	152.285	SLAB	1 X 1.0
154	152.380	SLAB	1 X 0.8
155	153.010	SLAB	1 X 0.9
156	153.220	SLAB	1 X 0.9
157	153.430	SLAB	1 X 1.4
158	154.930	SLAB	1 X 1.5
159	155.220	SLAB	1 X 1.1
160	155.555	SLAB	1 X 0.75
161	156.330	SLAB	1 X 1.0
162	156.530	SLAB	1 X 1.4
163	156.730	SLAB	1 X 1.5
164	156.920	SLAB	1 X 1.2
165	157.130	SLAB	1 X 1.5
166	157.410	SLAB	1 X 1.1
167	157.420	SLAB	1 X 0.9
168	157.450	SLAB	1 X 1.1
169	158.015	SLAB	1 X 1.3
170	158.210	SLAB	1 X 1.8
171	158.305	SLAB	1 X 1.3
172	158.410	SLAB	1 X 1.0
173	158.490	SLAB	1 X 1.5
174	158.965	SLAB	1 X 1.1
175	159.550	SLAB	1 X 0.9
176	159.660	SLAB	1 X 0.9
177	159.920	SLAB	1 X 1.0
178	160.405	SLAB	1 X 1.5
179	160.790	SLAB	1 X 0.7
180	160.930	SLAB	1 X 1.4
181	161.245	SLAB	1 X 0.9
182	161.365	SLAB	1 X 1.2
183	161.570	SLAB	1 X 1.2
184	161.815	SLAB	1 X 0.9
185	162.080	SLAB	1 X 0.9
186	162.350	SLAB	1 X 1.1
187	162.690	SLAB	1 X 0.9
188	162.990	SLAB	1 X 1.5
189	163.220	SLAB	1 X 1.5

Sl. No.	Existing Chainage	Existing Structure	Span Arrangement
190	163.220	SLAB	1 X 1.5
191	163.535	SLAB	1 X 0.9
192	163.685	SLAB	1 X 1.1
193	163.745	SLAB	1 X 1.4
194	163.960	SLAB	1 X 1.2
195	164.240	SLAB	1 X 0.8
196	164.460	SLAB	1 X 1.5
197	164.765	SLAB	1 X 2.5
198	164.885	SLAB	1 X 1.5
199	165.200	SLAB	1 X 0.9
200	165.350	SLAB	1 X 1.5
201	165.390	SLAB	1 X 1.5
202	166.000	SLAB	1 X 0.9
203	166.290	SLAB	1 X 0.9
204	166.465	SLAB	1 X 0.6
205	166.630	SLAB	1 X 0.85
206	166.895	SLAB	1 X 0.8
207	167.070	SLAB	1 X 0.85
208	167.455	SLAB	1 X 1.2
209	167.680	SLAB	1 X 0.8
210	167.975	SLAB	1 X 0.8
211	168.140	SLAB	1 X 1.5
212	168.355	SLAB	1 X 0.9
213	168.710	SLAB	1 X 0.9
214	168.905	SLAB	1 X 0.8
215	169.050	SLAB	1 X 0.9
216	169.350	SLAB	1 X 0.9

11. Bus bays

The project road has no bus-bay and no bus shelters. The details of bus bays on the Site are as follows:

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

12. Truck Lay byes

The details of truck lay byes are as follows:

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

13. Roadside drains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From m	To m	Masonry/cc (Pucca)	Earthen (Kutcha)
1	118530	119000	Masonry/cc	L
2	123645	123913	Masonry	L
3	117980	118530	cc (Pucca)	R
4	119000	119145	cc (Pucca)	L
5	119200	120583	cc (Pucca)	L
6	120600	120650	cc (Pucca)	L
7	121140	123254	cc (Pucca)	L
8	123309	123645	cc (Pucca)	L
9	123913	124043	cc (Pucca)	L
10	124075	126259	cc (Pucca)	L
11	126435	126540	cc (Pucca)	L
12	126855	128129	cc (Pucca)	L
13	128214	128710	cc (Pucca)	L
14	128937	130900	cc (Pucca)	L
15	135695	136020	Masonry	R
16	135153	135695	Masonry	R
17	136514	136571	cc (Pucca)	R
18	136710	137344	cc (Pucca)	L
19	137450	137634	cc (Pucca)	L
20	137710	137995	cc (Pucca)	L
21	138260	138631	cc (Pucca)	L
22	139586	139660	cc (Pucca)	R
23	139800	142226	cc (Pucca)	R
24	140668	140810	cc (Pucca)	R
25	140827	141510	cc (Pucca)	L
26	141565	143829	cc (Pucca)	L
27	143885	143955	cc (Pucca)	R
28	143995	144489	cc (Pucca)	L
29	144574	147600	cc (Pucca)	L
30	147741	148450	cc (Pucca)	L
31	148653	148910	cc (Pucca)	L
32	148945	149923	cc (Pucca)	L
33	150043	150466	cc (Pucca)	L
34	150547	151225	cc (Pucca)	L
35	151256	152737	cc (Pucca)	L
36	152814	153625	cc (Pucca)	L
37	168920	168990	Masonry	L
38	169295	169400	Masonry	L
39	153988	154090	cc (Pucca)	L

Sl. No.	Location		Type	
	From m	To m	Masonry/cc (Pucca)	Earthen (Kutcha)
40	154215	155495	cc (Pucca)	R
41	155757	156163	cc (Pucca)	R
42	156200	157510	cc (Pucca)	L
43	157645	159110	cc (Pucca)	L
44	159195	161115	cc (Pucca)	L
45	161195	161936	cc (Pucca)	L
46	162026	163228	cc (Pucca)	L
47	163295	164263	cc (Pucca)	L
48	164748	165484	cc (Pucca)	L
49	165438	166400	cc (Pucca)	L
50	166495	167195	cc (Pucca)	L
51	167767	168185	cc (Pucca)	L

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	Towards	Y-Junction	Cross Road
1	100/830		100/830	Chingjui
2	109/730		109/730	Razai Khunou
3	110/480		110/480	Kharasom Village
4	113/470		113/470	Tusoam
5	140/180		140/180	Jessami village

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.]

18. Existing utilities

(i) Electrical utilities

The site includes the following electrical utilities:-

a) Extra High-Tension Lines (EHT Lines)*

SL NO	Chainage (Km)		Length (in Km)					Crossings					No of Towers obstructing/infringing ROW
	From	To	400 KV	220 KV	132 KV	110 KV	66 KV	400 KV	220 KV	132 KV	110 KV	66 KV	
1	95.700	140.180											
	TOTAL		Nil										

b) High Tension/Low Tension Lines (HT/LT Lines)*

SL NO	Chainage (Km)		Length (in Km)			Crossings			Nos of Poles infringing/obstructing ROW		
	From	To	33KV	11KV	LT	33KV	11KV	LT	33KV	11KV	LT
1	95.700	140.180		6.9	4.6				46 Nos	66 Nos	84 Nos
	TOTAL			6.9 Km	4.6 Km				46 Nos	66 Nos	84 Nos

c) Transformer details:

Sl. No.	Chainage(km)		11KV	
			NO	Capacity (KVA)
1	95.700	140.180	1	25
2			2	63
3			3	100
	TOTAL			6 NO

(ii) Public Health utilities (Water/Sewage Pipe Lines)*

The site includes the following Public Health utilities:-

SL No	Chainage		Length in (Km)				Crossing			
	from	To	Water supply Line		Sewage Line		Water supply Line		Sewage Line	
			With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow
1	95.700	140.180		6.6						

(iii) Any Other line

(* This illustrative and may change as per features of existing utilities.)

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:

S. No	Design Chainage (From km to km)	Length (km)	Width (m)	Date of providing ROW
1	Km 95.700 to Km 140.180	44.480	20m to 43 m	90 % length at appointed date
				Balance 10% length shall be provided 150 days from the appointed date.

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 the relevant specifications/IRC Codes/Manual.

Annex – IV

(Schedule-A)

Environment Clearances

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-Lanning 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 Lanning of Highways (IRC: SP: 73-2015)] 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 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] earthen 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 (Reference to cross section)
1	Namrei	97.650 km to 98.050 km	7	As per TSC	**2**
2	Kharasom	111.300 km to 111.920 km	7	As per TSC	**2**
3	Jessami	140.000 km to 140.180 km	7	As per TSC	**2**

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

2. Geometric Design and General Features

(i) General

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

(ii) Design speed

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

(iii) Improvement of the existing road geometrics

The stretches where design speed reduces below 30 kmph are summarized below:

Sl. No.	Chainage	Type of Deficiency	Remarks (Design Speed in kmph)
1	102042	Built-up	20
2	115574	Built-up	20
3	115880	Built-up	20
4	116056	Built-up	20

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

(a) In built-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
Nil			

(b) Earthen shoulders of 2.5 m width shall be provided with selected earth wherever applicable as per TCS drawing.

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

(vi) Lateral and 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 underpasses shall be as follows:

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

(vii) Lateral and vertical clearances at overpasses

(a) Lateral and vertical clearances at overpasses shall be as per requirements specified in the relevant Manual.

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

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

(viii) Service roads

Service roads shall be constructed at the locations and for the lengths indicated below:
[Refer requirements specified in the relevant Manual]

Sl. No.	Location of service road (from km to km)	Right hand side (RHS)/Left hand side (LHS)/ or Both sides	Length (km) of service road
Nil			

(ix) Grade separated structures

(a) Grade separated structures shall be provided as per provision of the Manual. The requisite are given below:

[Refer to requirements specified in the relevant Manual]

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

(b) In the case of grade separated structures the type of structure and the level of the Project Highway and the cross roads shall be as follows: [Refer to provision of the Manual and specify the type of vehicular under pass/ overpass structure and whether the cross road is to be carried at the existing
Level. raised or lowered]

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 and pedestrian underpass/overpass shall be constructed as follows:
[Refer to provision of the relevant Manual and specify the requirements of cattle and pedestrian underpass/overpass]

Sl. No.	Location	Type of crossing
Nil		

(xi) Typical cross-sections of the Project Highway

TCS TYPE	DESCRIPTION	Length (m)
Refer Sch-D	2-lane with 2.5 m earthen shoulders with W-beam crash barrier on valley side and 1.5m earthen shoulder with 0.6 m lined drain on hill side	6370
Refer Sch-D	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on both side	1520
Refer Sch-D	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain and hill section on both side	8095

TCS TYPE	DESCRIPTION	Length (m)
Refer Sch-D	2-lane with 1.5m earthen shoulder with 0.6m lined drain on hill side and 2.5m earthen shoulder on valley side	12835
Refer Sch-D	2-lane with 1.5 m earthen shoulders with breast wall and 0.6m drain on hill side and 2.5m earthen shoulder on valley side	7040
Refer Sch-D	2-lane with 1.5m earthen shoulder with 0.6m lined drain on Hill side and retaining wall on valley side with 2.5m Earthen Shoulder	100
Refer Sch-D	2-lane with 1.5m earthen shoulder with Gabion Wall and 0.6m lined drain on Hill side and 2.5m Earthen Shoulder on valley side	170
Refer Sch-D	2-lane with 1.5 m earthen shoulders with breast wall and 0.6m lined drain on hill side and 2.5m earthen shoulder with W-beam crash barrier on valley side	790
Refer Sch-D	2-lane with 1.5 m earthen shoulder and 0.6 m lined drain on hill side and 2.5m earthen shoulder with gabion wall & W-beam crash barrier on valley side	1870
Refer Sch-D	2-lane with 2.5 m earthen shoulder and gabion wall with W-beam crash barrier on both side valley	120
Refer Sch-D	2-lane with 1.5 m earthen shoulder with breast wall and 0.6m lined drain on both side hill	4130
Refer Sch-D	2-lane with 1.5 m earthen shoulder with Gabion wall and 0.6m lined drain on both side hill	550
Refer Sch-D	2-lane with 1.5 m earthen shoulder with Breast wall and 0.6m lined drain on one side hill and 1.5 m earthen shoulder with Gabion wall and 0.6m lined drain on other side hill	710
Refer Sch-D	2-lane with 1.5 m earthen shoulder with 0.6 m lined drain on one side and 2.5 m earthen shoulder with W-Beam crash barrier and RCC Retaining wall on other side	180
	Total length =	**44480**

3. Intersections and Grade Separators

All intersections and grade separators shall be as per Section 3 of the Manual. Existing intersections which are deficient shall be improved to the prescribed standards.

[Refer to provision of the relevant 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 (km)	Type of intersection T/Y Junction	Towards
1	100.700	Y	Rachai Khullen Village
2	110.720	Y	Kharasom Village

Sl. No.	Location (km)	Type of intersection T/Y Junction	Towards
3	111.400	Y	Kharasom Village
4	114.430	Y	Tusoam
5	140.180	Y	Jessami

(ii) Grade separated intersection with/without ramps

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

4. Road Embankment and Cut Section

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

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

The existing road shall be raised in the following sections:

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

5. Pavement Design

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

(ii) Type of pavement

Flexible Pavement

(iii) Design requirements

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

(a) Design Period and strategy

Flexible pavement for new pavement or for widening and strengthening of the existing pavement shall be designed for a minimum design period of 20 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 20 msa.

(iv) Reconstruction of stretches

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

6. Roadside Drainage

Drainage system including surface and subsurface drains for the Project Highway has been provided in the table given below:

Lined Drain

Refer Schedule-D	6254.00	m
	3163.00	m
	15898	m
	12604.00	m
	167.00	m
	1836.00	m
	8112.00	m
	695.00	m
Total	**48729.00**	**m**

7. Design of Structures

(i) General

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

(b) Width of the 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 carriageway width is different from 7.5 (seven point five) metres in the table below.]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
All Major and Minor Bridges shall be provided as per GAD attached.		

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

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

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

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

below:

Sl. No.	Bridge at km	Utility service 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 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:

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

Sl. no	NEW CHAINAGE	Proposed Span(m)	Width (m)	Proposed TYPE	PROPOSAL
1	95.830	1 X 3.0	1x10.9	RCC BOX	RECONSTRUCTION
2	96.623	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
3	96.920	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
4	97.734	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
5	98.250	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
6	98.413	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
7	98.640	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
8	99.968	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
9	102.047	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
10	102.138	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
11	102.270	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
12	102.767	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
13	102.885	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
14	102.960	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
15	103.085	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
16	103.718	1 X 3.0	1x10.9	RCC BOX	RECONSTRUCTION
17	103.830	1 X 3.0	1x10.9	RCC BOX	RECONSTRUCTION
18	104.014	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
19	104.843	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
20	105.405	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION

21	105.730	1 X 3.0	1x10.9	RCC BOX	RECONSTRUCTION
22	106.278	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
23	106.900	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
24	107.162	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
25	107.740	1 X 3.0	1x10.9	RCC BOX	RECONSTRUCTION
26	108.013	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
27	109.048	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
28	109.958	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
29	110.358	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
30	110.535	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
31	110.690	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
32	110.070	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
33	111.534	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
34	111.900	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
35	112.144	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
36	112.305	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
37	113.300	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
38	113.458	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
39	113.811	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
40	114.730	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
41	117.230	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
42	118.520	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
43	119.588	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
44	119.795	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
45	122.590	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
46	123.000	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
47	124.575	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
48	125.880	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
49	128.075	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
50	129.415	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
51	130.275	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
52	131.565	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION

53	131.678	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
54	132.810	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
55	133.005	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
56	133.562	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
57	134.400	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
58	135.048	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
59	135.622	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
60	135.840	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
61	136.510	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
62	137.130	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
63	137.410	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
64	137.585	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
65	137.745	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
66	138.006	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
67	138.175	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
68	138.540	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
69	138.752	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
70	138.990	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
71	139.287	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
72	139.638	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
73	139.832	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION
74	140.098	1 X 2.0	1x10.9	RCC BOX	RECONSTRUCTION

(c) Widening of existing culverts:

All existing culverts which are not to be reconstructed shall be widened tothe 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	**NEW CHAINAGE**	**Proposed Span(m)**	**Width (m)**	**Proposed TYPE**	**PROPOSAL**
1.	95.800	1 X 1.0	1x10.9	SLAB	WIDENING
2.	96.087	1 X 1.4	1x10.9	SLAB	WIDENING
3.	96.168	1 X 1.3	1x10.9	SLAB	WIDENING

Sl. no	NEW CHAINAGE	Proposed Span(m)	Width (m)	Proposed TYPE	PROPOSAL
4.	97.613	1 X 1.3	1x10.9	SLAB	WIDENING
5.	98.064	1 X 1.5	1x10.9	SLAB	WIDENING
6.	100.128	1 X 1.5	1x10.9	SLAB	WIDENING
7.	100.290	1 X 1.5	1x10.9	SLAB	WIDENING
8.	101.546	1 X 1.0	1x10.9	SLAB	WIDENING
9.	101.846	1 X 1.0	1x10.9	SLAB	WIDENING
10.	102.488	1 X 1.0	1x10.9	SLAB	WIDENING
11.	102.665	1 X 1.4	1x10.9	SLAB	WIDENING
12.	103.966	1 X 1.1	1x10.9	SLAB	WIDENING
13.	104.583	1 X 1.1	1x10.9	SLAB	WIDENING
14.	105.884	1 X 1.0	1x10.9	SLAB	WIDENING
15.	106.148	1 X 1.0	1x10.9	SLAB	WIDENING
16.	106.628	1 X 1.0	1x10.9	SLAB	WIDENING
17.	108.947	1 X 1.0	1x10.9	SLAB	WIDENING
18.	111.275	1 X 1.3	1x10.9	SLAB	WIDENING
19.	114.437	1 X 1.0	1x10.9	SLAB	WIDENING
20.	114.985	1 X 1.0	1x10.9	SLAB	WIDENING
21.	116.915	1 X 1.6	1x10.9	SLAB	WIDENING
22.	117.113	1 X 1.7	1x10.9	SLAB	WIDENING
23.	117.613	1 X 1.0	1x10.9	SLAB	WIDENING
24.	119.995	1 X 1.5	1x10.9	SLAB	WIDENING
25.	120.760	1 X 1.3	1x10.9	SLAB	WIDENING
26.	122.855	1 X 1.4	1x10.9	SLAB	WIDENING
27.	129.246	1 X 1.2	1x10.9	SLAB	WIDENING
28.	130.150	1 X 1.3	1x10.9	SLAB	WIDENING
29.	130.446	1 X 1.0	1x10.9	SLAB	WIDENING

Sl. no	NEW CHAINAGE	Proposed Span(m)	Width (m)	Proposed TYPE	PROPOSAL
30.	130.523	1 X 1.5	1x10.9	SLAB	WIDENING
31.	130.986	1 X 1.1	1x10.9	SLAB	WIDENING
32.	133.110	1 X 1.2	1x10.9	SLAB	WIDENING
33.	133.320	1 X 1.2	1x10.9	SLAB	WIDENING
34.	134.090	1 X 1.1	1x10.9	SLAB	WIDENING
35.	134.590	1 X 1.5	1x10.9	SLAB	WIDENING
36.	135.190	1 X 1.1	1x10.9	SLAB	WIDENING
37.	136.107	1 X 2.5	1x10.9	SLAB	WIDENING
38.	136.222	1 X 1.5	1x10.9	SLAB	WIDENING

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

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
1.	96.280	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
2.	97.120	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
3.	97.460	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
4.	98.165	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
5.	98.520	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
6.	98.765	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
7.	98.820	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
8.	98.990	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
9.	99.255	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
10.	99.485	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
11.	99.695	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
12.	99.775	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
13.	100.068	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
14.	100.535	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
15.	100.647	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
16.	100.825	1 X 3.0	1x10.9	RCC BOX	NEW CONSTRUCTION
17.	100.875	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
18.	101.210	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
19.	101.310	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
20.	103.335	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
21.	103.470	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
22.	104.354	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
23.	104.740	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
24.	104.990	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
25.	105.105	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
26.	105.195	1 X 3.0	1x10.9	RCC BOX	NEW CONSTRUCTION
27.	105.346	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
28.	105.550	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
29.	105.975	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
30.	106.405	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
31.	106.790	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
32.	107.395	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
33.	107.495	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
34.	107.890	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
35.	108.330	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
36.	108.655	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
37.	108.885	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
38.	109.250	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
39.	109.500	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
40.	109.662	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
41.	109.724	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
42.	110.825	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
43.	111.605	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
44.	111.780	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
45.	112.485	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
46.	112.570	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
47.	112.715	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
48.	113.110	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
49.	113.645	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
50.	113.945	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
51.	114.146	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
52.	114.290	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
53.	115.155	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
54.	115.340	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
55.	115.475	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
56.	115.610	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
57.	115.760	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
58.	115.900	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
59.	116.100	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
60.	116.240	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
61.	116.345	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
62.	116.475	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
63.	116.575	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
64.	116.675	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
65.	116.795	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
66.	116.995	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
67.	117.460	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
68.	117.765	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
69.	117.832	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
70.	117.945	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
71.	118.110	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
72.	118.315	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
73.	118.765	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
74.	118.920	1 X 3.0	1x10.9	RCC BOX	NEW CONSTRUCTION
75.	119.070	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
76.	119.260	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
77.	119.670	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
78.	120.067	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
79.	120.332	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
80.	120.915	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
81.	121.112	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
82.	121.315	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
83.	121.440	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
84.	121.670	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
85.	121.870	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
86.	122.030	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
87.	122.218	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
88.	122.335	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
89.	122.436	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
90.	122.735	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
91.	123.190	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
92.	123.525	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
93.	123.608	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
94.	123.730	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
95.	123.970	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
96.	124.145	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
97.	124.390	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
98.	124.880	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
99.	125.035	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
100.	125.284	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
101.	125.625	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
102.	126.080	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
103.	126.265	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
104.	126.725	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
105.	126.920	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
106.	127.155	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
107.	127.540	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
108.	127.870	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
109.	128.607	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
110.	129.030	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
111.	129.680	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
112.	129.835	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
113.	130.350	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
114.	130.633	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
115.	130.775	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
116.	131.120	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
117.	131.300	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

Sl. no	NEW CHAINAGE	Proposed Span (m)	Width (m)	Proposed TYPE	PROPOSAL
118.	131.425	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
119.	131.816	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
120.	132.085	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
121.	132.290	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
122.	132.515	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
123.	132.675	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
124.	133.680	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
125.	133.815	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
126.	134.235	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
127.	134.755	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
128.	135.220	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
129.	135.426	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
130.	135.975	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
131.	136.730	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
132.	137.015	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
133.	138.360	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
134.	139.140	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
135.	139.475	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
136.	139.975	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION
137.	140.135	1 X 2.0	1x10.9	RCC BOX	NEW CONSTRUCTION

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

Sl. No.	Location at km	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]

Sl. No.	Bridge location	Salient details of existing bridge		Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Remarks
	(km)	Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)		
Nil					

(ii) The following narrow bridges shall be widened:

Sl. No.	Location (km)	Existing width (m)	Extent of widening (m)	Cross-section at deck level for widening @
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)	Span(m)	Width (m)	Remarks. If any
1	**101.140**	**1 x 30**	**1x12**	**New Construction**

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

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 Manual and provide details]

Sl. No.	Location at km	Remarks
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

(v) Rail-road bridges

(a) Design construction and detailing of ROB/RUB shall be as specified in provision of the 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 of Level crossing (Chainage km)	Number and length of span (m)
Nil		

(v) Grade separated structures

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2(ix) and 3 of this Annex-I.

(vi) Repairs and strengthening of bridges and structures

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 provisions of relevant Manual.

Sl. No	Traffic Signage, Road Marking and other appurtenances	unit	Quantity
1	Ordinary Kilometre stones=	Nos	34
2	5th Kilometre stones=	Nos	9
3	Hectometer Stones=	Nos	171
4	Delineators (100 cm long and circular shaped) + Hazard marker	Nos	1057
5	900 mm Octagonal	Nos	49
6	600 mm circular	Nos	588
7	900 mm Triangular	Nos	630
8	800 mm x 600 mm rectangular	Nos	777
9	Object Hazard Marker (one way)	Nos	356
10	Fluorescent Strips	Rolls	15

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

9. Roadside Furniture

(i) Roadside 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
1	At Jessami (Ch. 140.180 km)	10 m X 1.2 m

10. Compulsory Afforestation

[Refer to provision of relevant Manual and specify the number of trees which are required to be planted by the concerned department as compensatory afforestation.]

11. Hazardous Locations

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

a) Breast Wall (1.5m)

Sl. No.	Design Chainage		Length (m)	Side	Remarks
	From	To			
1.	95730	95750	20	Hill side	
2.	96620	96760	140	Hill side	
3.	96810	96900	90	Hill side	
4.	99950	100250	300	Hill side	
5.	100420	100780	360	Hill side	
6.	100950	100990	80	Hill side	
7.	101300	101740	880	Hill side	
8.	102680	102740	60	Hill side	
9.	102770	102820	50	Hill side	
10.	103130	103670	1080	Hill side	
11.	105040	105150	110	Hill side	
12.	105250	105360	220	Hill side	
13.	105680	105720	80	Hill side	
14.	106460	106580	120	Hill side	
15.	107200	107330	260	Hill side	

Sl. No.	Design Chainage		Length (m)	Side	Remarks
	From	To			
16.	108080	108200	120	Hill side	
17.	108340	108380	80	Hill side	
18.	109100	109440	340	Hill side	
19.	109550	109920	370	Hill side	
20.	114490	114550	60	Hill side	
21.	115390	115440	50	Hill side	
22.	115780	115840	60	Hill side	
23.	118010	118070	120	Hill side	
24.	119850	119950	100	Hill side	
25.	120060	120130	70	Hill side	
26.	121330	121410	80	Hill side	
27.	121460	121840	760	Hill side	
28.	122510	122600	90	Hill side	
29.	124410	124530	120	Hill side	
30.	126050	126500	450	Hill side	
31.	129550	129650	100	Hill side	
32.	129900	130020	120	Hill side	
33.	130020	130100	80	Hill side	
34.	131900	132000	100	Hill side	
35.	135450	135650	200	Hill side	
36.	136130	136190	60	Hill side	
37.	136700	136810	110	Hill side	
38.	139010	139050	40	Hill side	

b)Breast Wall (2.0m)

Sl. No.	Design Chainage		Length (m)	Side	Remarks
	From	To			
1.	95710	95780	70	Hill side	
2.	95850	95900	50	Hill side	
3.	96010	96060	50	Hill side	
4.	95890	96040	150	Hill side	
5.	96190	96220	30	Hill side	
6.	96370	96560	190	Hill side	
7.	96330	96400	70	Hill side	
8.	104270	104470	200	Hill side	
9.	104090	104230	140	Hill side	
10.	104710	104810	200	Hill side	
11.	105480	105580	200	Hill side	
12.	106170	106260	90	Hill side	
13.	106670	106720	50	Hill side	
14.	107010	107130	240	Hill side	
15.	107440	107670	460	Hill side	
16.	108390	108620	230	Hill side	
17.	108560	108830	270	Hill side	
18.	110070	110270	400	Hill side	

Sl. No.	Design Chainage		Length (m)	Side	Remarks
	From	To			
19.	115970	116050	80	Hill side	
20.	116390	116450	60	Hill side	
21.	116720	116900	180	Hill side	
22.	117260	117420	160	Hill side	
23.	117520	117570	50	Hill side	
24.	117350	117550	200	Hill side	
25.	117800	117950	150	Hill side	
26.	119100	119200	100	Hill side	
27.	120070	120190	120	Hill side	
28.	120550	120720	340	Hill side	
29.	120800	120880	80	Hill side	
30.	123050	123580	1060	Hill side	
31.	123840	124020	360	Hill side	
32.	124620	124850	230	Hill side	
33.	124950	125200	250	Hill side	
34.	125350	125500	150	Hill side	
35.	127300	127400	100	Hill side	
36.	127590	128590	1000	Hill side	
37.	128900	129200	600	Hill side	
38.	130120	130250	130	Hill side	
39.	132800	132900	100	Hill side	
40.	133250	133400	150	Hill side	
41.	133790	133950	160	Hill side	
42.	134420	134560	280	Hill side	
43.	134620	134720	200	Hill side	
44.	136010	136080	70	Hill side	
45.	137180	137300	120	Hill side	
46.	139290	139490	200	Hill side	
47.	138600	138700	100	Hill side	

C) **Gabion Wall (5m)**

Sl No	From	To	Length	Side
1.	95900	96010	110	Right
2.	96220	96370	150	Right
3.	96230	96320	90	Left
4.	104070	104270	200	Left
5.	105580	105680	200	Both
6.	108390	108560	170	Left
7.	117420	117520	100	Left
8.	118300	118470	170	Left

Sl No	From	To	Length	Side
9.	120190	120550	720	Both
10	130020	130110	90	Left

d) Gabion Retaining Structure (On Filling) (2.0m)

Sl no	From	To	Length	Side
	95800	95820	20	Left
	96090	96110	20	Left
	96760	96810	50	Left
	98520	98540	20	Right
	102350	102360	10	Right
	106390	106410	20	Right
	109040	109070	30	Right
	113120	113150	30	Right
	113920	113940	20	Right
	116480	116500	20	Right
	117190	117220	30	Right
	121290	121310	20	Right
	122810	122830	20	Right
	124340	124380	40	Right
	124580	124630	50	Right
	125580	125610	30	Left
	129660	129680	20	Right
	130610	130630	20	Right
	130970	131000	30	Right
	131090	131150	60	Right
	131200	131230	30	Right
	132680	132700	20	Right
	136850	136870	20	Right
	136980	137010	30	Right
	139620	139640	20	Right

e) Gabion Retaining Structure (On Filling) (3.0m)

Sl no	From	To	Length	Side

	96580	96600	20	Left
	103830	103850	20	Right
	104570	104600	30	Right
	104980	105010	30	Right
	105180	105220	40	Right
	106790	106820	30	Right
	107160	107180	20	Right
	109480	109500	20	Right
	109930	109960	30	Right
	115350	115380	30	Right
	120900	120920	20	Right
	121420	121450	30	Right
	122240	122270	30	Right
	122420	122470	50	Right
	122980	123000	20	Right
	129240	129260	20	Right
	133090	133120	30	Right
	133550	133600	50	Right
	135830	135850	20	Right
	135960	135990	30	Right
	138530	138550	20	Right

f) Gabion Retaining Structure (On Filling) (4.0m)

Sl no	From	To	Length	Side
	105750	105780	30	Right
	108270	108310	40	Left
	110330	110380	50	Right
	112710	112780	70	Right
	113020	113080	60	Right
	119760	119780	20	Right
	119980	120010	30	Right
	121940	121970	30	Left
	132960	132990	30	Right

g) Gabion Retaining Structure (On Filling) (5.0m)

Sl No	From	To	Length	Side
1.	96130	96150	20	Left
2.	102850	102950	100	Right
3.	103720	103740	20	Right
4.	105380	105410	30	Right
5.	119220	119350	130	Right
6.	135560	135650	90	Right

h) Gabion Retaining Structure on bridge Approach

Sl No	From	To	Length	Side
1.	101030	101120	180	Both side of approach
2.	101160	101200	80	Both side of approach

a) RCC Retaining Wall (Average Height 5.0m)

FROM	TO	LENGTH	SIDE
140000	140180	180	Right

a) W-Beam Crash Barrier

TCS No	Length (m)	Remarks
Refer Sch-D	6254.00	
	97.00	
	774.00	
	1836.00	
	116.00	
Total length=	**9077.00**	

12. Special Requirement for Hill Roads

Seeding and Mulching: Seeding and Mulching (Preparation of seed bed on previously laid top soil, furnishing and placing of seeds, fertilizer, mulching material, applying bituminous emulsion at the rate of 0.23 litres per sqm and laying and fixing jute netting, including watering for 3 months all as perclause 308) has been provided along project road. Details of seeding and mulching has been describedbelow:

SL No	Design Chainage		Length (m)	Height (m)	Area (sqm)	Remark
	From	To				
1	95900	96010	110	5	550	Right
2	96220	96370	150	5	750	Right
3	104070	104270	200	5	1000	Left
4	118300	118470	170	5	850	Left
5	120190	120550	720	5	3600	Both
Total Area=					**6750**	

Bamboo Plantation:

For protection earth slope on hill side provision of plantation has been made as detailed below.

Sl No	From	To	Area	Remark
1	95.700	140.180	**69600 Sq Mt**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Hydro seeding:

Details of Hydro seeding has been described below:

Sl No	From	To	Area	Remark
1	95.700	140.180	**13500 Sq Mt**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Soil Nailing:

Sl No	From	To	Area	Remark
1	95.700	140.180	**6500 Sq Mt**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Staircase: Staircase has been provided at ch-127/000 Km for the people lives on top of hillside for accessibility point of view from top area of hill side to project road. The staircase will be made using concrete after excavation with both sides provision of railing.

13. Change of Scope

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

(Schedule-B1)

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

Annexure-I

Schedule-B1

(Refer Sheet-II)

Utility Shifting.

Shifting of obstructing existing utilities indicated in Schedule A to an appropriate location in accordance with the standards and specification of concerned Utility Owning Department is part of the scope of work of the Contractor/Concessionaire*. The bidders may visit the site and assess the quantum of shifting of utilities for the projects before submission of their bid. Copy of utility relocation plan is enclosed. The specification of concerned Utility Owning Department shall be applicable and followed.

Notes:

a) The type/spacing/size/specifications of poles/towers/lines/cables to be used in shifting work shall be as per the guidelines of utility owning department and it is to be agreed solely between the contractor/Concessionaire* and the utility owning department. No change of scope shall be admissible and no cost shall be paid for using different type/spacing/size/specifications in shifted work in comparison to those in the existing work or for making any overhead crossing to underground as per requirement of utility owning department and/or construction of project highway. The contractor/concessionaire* shall carry out joint inspection with utility owning department and get the estimates from the utility owning department. The assistance of the Authority is limited to giving forwarding letter on the proposal of contractor/concessionaire* to utility owning department whenever asked by the contractor/concessionaire*. The decision/ approval of utility owning department shall be on the contractor/concessionaire*.

b) The supervision charges at the rates/charges applicable of the utility owning department shall be paid directly by the Authority to the utility Owning department as and when contractor/concessionaire*furnishes demand of utility Owning Department along with a copy of estimated cost given by later.

c) The dismantled material/scrap of existing Utility to be shifted/Dismantled shall belong to the contractor/concessionaire* who would be free to dispose-off the dismantled material as deemed fit by them unless the contractor/concessionaire* is required to deposit the dismantled material may be availed by the contractor/concessionaire* as per estimate agreed between them.

d) The utilities shall be handed over after shifting work is completed to utility Owning Department to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after Handing over Process is complete as far as utility shifting works are concerned.

Note –II Copy of utility shifting plans enclosed as Annexure-II to Schedule B1.

Schedule - C

(See Clause 2.1)

Project Facilities

1. Project Facilities

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

(a) Toll plaza[s]

(b) Roadside furniture;

(c) Pedestrian facilities;

(d) Truck Lay byes;

(e) Bus-bays and passenger shelters;

(f) Rest areas; and

(g) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza: -

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

b) Roadside furniture: -

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

C) Pedestrian Facility:-

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

d) Truck Lay bye:-

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

e) Bus Bay & Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Design Requirements	Other Essential Details
1	Bus shelter	97.700 (Right Side)	Bus shelter have been placed on one side of proposed roadway	Dimension of Passenger Shelter (L X B = 5.0 m X 3.0 m)
2	Bus shelter	101.800 (Left Side)		
3	Bus shelter	111.550 (Left Side)		
4	Bus shelter	114.350 (Right Side)		
5	Bus shelter	122.000 (Left Side)		
6	Bus shelter	139.800 (Left Side)		

f) Rest Areas

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

g) Others to be specified

Street Lighting:
Total 26Nos. Street lighting shall be provided in junction and passenger shelters locations.
6 nos. of toilet have been proposed.

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-: For TCS and TCS schedule refer to given Drawing Volume.

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) [Not withstanding anything to the contrary contained in Paragraph 1 above, the following Specifications and Standards shall apply to the Project Highway, and for purposes of this Agreement, the aforesaid Specifications and Standards shall be deemed to be amended to the extent set forth below:]

<table>
<tr><th>Item</th><th>Manual Clause Reference</th><th colspan="5">Provision as per Manual</th><th colspan="5">Modified Provision</th></tr>
<tr><td rowspan="5">Shoulder</td><td rowspan="5">2.6</td><td colspan="5"><u>Mountainous Terrain</u></td><td colspan="5"><u>Mountainous Terrain</u></td></tr>
<tr><td rowspan="2">Type of Section</td><td rowspan="2"></td><td colspan="3">Width of Shoulder (m)</td><td rowspan="2">Type of Section</td><td rowspan="2"></td><td colspan="3">Width of Shoulder (m)</td></tr>
<tr><td>Paved</td><td>Earthen</td><td>Total</td><td>Paved</td><td>Earthen</td></tr>
<tr><td>Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>1.5</td><td>-</td><td>1.5</td><td>Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>-</td><td>-</td></tr>
<tr><td>Valley Side</td><td>1.5</td><td>1</td><td>2.5</td><td>Valley Side</td><td>-</td><td>Up to 2.5 m</td></tr>
<tr><td>Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td><td>Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>-</td><td>-</td></tr>
<tr><td>Valley Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td><td>Valley Side</td><td>-</td><td>-</td></tr>
<tr><td>Design Speed</td><td>2.2</td><td colspan="5"><u>Mountainous Terrain:</u>
Ruling : 60 Kmph
Minimum : 40 Kmph</td><td colspan="5"><u>Mountainous Terrain:</u>
Design Speed followed 40-60 kmph in 176.76. However design speed has been reduced to 20 kmph due to site constraints and to accommodate the proposal within EROW.
(Refer Horizontal Alignment Drawing and Table 1.1 below)</td></tr>
<tr><td>Extra Widening</td><td>2.7</td><td colspan="5">Extra Widening has been proposed as per IRC: SP: 73-2015
Radius | Extra Widening
75-100 m | 0.9 m
101-300 m | 0.6 m</td><td colspan="5">Extra Widening has been proposed as per IRC: SP: 48-1998 (Table 6.9) of Hill Road Manual.
Radius | Extra Widening
21-40 m | 1.5 m
41-60 m | 1.2 m</td></tr>
</table>

Item	Manual Clause Reference	Provision as per Manual	Modified Provision		
			61-100 m	0.9 m	
			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 than 30 kmph

Sl. No.	Chainage	Type of Deficiency	Remarks (Design Speed in kmph)
1	102042	Built-up	20
2	115574	Built-up	20
3	115880	Built-up	20
4	116056	Built-up	20

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

Sl. No.	Chainage (m)	RADIUS
1	97546.864	30.000
2	97609.359	50.000
3	97714.946	50.000
4	97791.609	50.000
5	98030.779	50.000
6	98100.177	60.000
7	101669.936	40.000
8	101767.195	40.000
9	101845.823	40.000
10	101974.279	30.000
11	102042.716	50.000
12	102406.325	60.000
13	106270.158	50.000
14	106528.819	50.000
15	111716.062	30.000
16	111782.166	30.000
17	111860.836	50.000
18	111931.921	50.000
19	112053.393	50.000
20	112235.958	50.000
21	112375.135	30.000
22	113781.874	30.000
23	114394.065	50.000
24	114473.036	60.000
25	114905.661	50.000
26	115128.83	50.000
27	115241.817	50.000

Sl. No.	Chainage (m)	RADIUS
28	115574.078	30.000
29	115879.672	30.000
30	116056.031	30.000
31	116220.452	50.000
32	121033.922	50.000
33	121303.881	50.000
34	129671.567	50.000
35	133679.944	50.000
36	134725.694	50.000
37	135192.568	50.000
38	137990.867	70.000
39	138080.953	70.000
40	138786.61	50.000

(iii) [Note 1: 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

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

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

Bill No	Weightage in percentage to the contract price	Description of Items		Percentage weightage
1		**WIDENING AND STRENGTHENING OF EXISTING ROAD**		
	74.29%	A1.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	**0.00%**
		A1.2	Sub-Base Course	**0.00%**
		A1.3	Non Bituminous Base Course	**0.00%**
		A1.4	Bituminous Base Course	**0.00%**
		A1.5	Wearing Coat	**0.00%**
		A1.6	Widening and repair of culverts	**0.00%**
		A1.7	Hard Shoulder	**0.00%**
2		**RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(FLEXIBLE PAVEMENT)**		**0.00%**
		A2.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	**45.93%**
		A2.2	Sub-Base Course	**8.68%**
		A2.3	Non Bituminous Base Course	**10.90%**
		A2.4	Bituminous Base Course	**11.51%**
		A2.5	Wearing Course	**4.33%**
		A2.6	Shoulder	**0.00%**
3		**RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(RIGID PAVEMENT)**		**0.00%**
		A3.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	**0.00%**
		A3.2	Sub-Base Course	**0.00%**
		A3.3	Dry Lean Concrete(DLC) Course	**0.00%**
		A3.4	Pavemennt Quality Control(PQC) Course	**0.00%**
4		**RECONSTRUCTION/NEW SERVICE ROAD (FLEXIBLE PAVEMENT)**		**0.00%**
		A4.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	**0.00%**
		A4.2	Sub-Base Course	**0.00%**

		A4.3	Non Bituminous Base Course	**0.00%**
		A4.4	Bituminous Base Course	**0.00%**
		A4.5	Wearing Coat	**0.00%**
5		**RECONSTRUCTION/NEW SERVICE ROAD (RIGID PAVEMENT)**		**0.00%**
		A5.1	Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.	**0.00%**
		A5.2	Sub-Base Course	**0.00%**
		A5.3	Dry Lean Concrete(DLC) Course	**0.00%**
		A5.4	Pavemennt Quality Control(PQC) Course	**0.00%**
6		**RECONSTRUCTION AND NEW CULVERTS ON EXISTING ROAD, REALIGNMENTS, BYPASSES**		**0.00%**
		A6.1	Culverts and associated Protection Works (Length< 6m)	**18.65%**
7	**1.45%**	**WIDENING AND REPAIR OF MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A7.1	Minor Bridges	
8		**NEW MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A8.1	***Foundation + Sub Structures:*** On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.	**66.96%**
		A8.2	***Super-structure:*** On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	**20.64%**
		A8.3	***Approaches:*** On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.	**12.40%**
		A8.4	***Guide Bunds and River Training Works:*** On completion of Guide bunds and river training works complete in all respects.	**0.00%**
9		**WIDENING AND REPAIRS OF UNDERPASSES/ OVERPASSES**		**0.00%**
		A9.1	Underpasses/ Overpasses	**0.00%**
10		**NEW UNDERPASSES/ OVERPASSES**		**0.00%**
		A10.1	***Foundation + Sub Structures:*** On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.	**0.00%**
		A10.2	***Super-structure:*** On completion of the super structure in all respect 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 joint complete in all respects as specified and (b) in case of underpass- Rigid pavement including drainage facility complete in all respects as specified.	**0.00%**

		A10.3		***Approaches:*** On completion of approaches including retaining walls/ Reinforced earth walls, stone pitching, protection works complete in all respect and fit for use.		**0.00%**
11	**0.00%**	**WIDENING AND REPAIRS OF MAJOR BRIDGES**				**0.00%**
		A11.1		Foundation		**0.00%**
		A11.2		Sub-structure		**0.00%**
		A11.3		Super-structure(including bearings)		**0.00%**
		A11.4		Wearing Coat including expansion joints		**0.00%**
		A11.5		Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
		A11.6		Wing walls/ Return walls		**0.00%**
		A11.7		Guide Bunds, River Training Works etc		**0.00%**
		A11.8		Approaches (including Retaining walls, stone pitching and protection works)		**0.00%**
12		**NEW MAJOR BRIDGES**				**0.00%**
		A12.1		Foundation		**0.00%**
		A12.2		Sub-structure		**0.00%**
		A12.3		Super-structure(including bearings)		**0.00%**
		A12.4		Wearing Coat including expansion joints		**0.00%**
		A12.5		Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
		A12.6		Wing walls/ Return walls		**0.00%**
		A12.7		Guide Bunds, River Training Works etc		**0.00%**
		A12.8		Approaches (including Retaining walls, stone pitching and protection works)		**0.00%**
13		**WIDENING AND REPAIR OF ROB/RUB**				**0.00%**
		A13.1	***(a)***	***ROB***		**0.00%**
			(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**
			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-	**0.00%**
			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls, stone pitching and protection works)	-	**0.00%**
		A13.2	***(b)***	***RUB***		**0.00%**
			(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**
			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-	**0.00%**

			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls, stone pitching and protection works)	-	**0.00%**
14		**NEW ROB/RUB**				**0.00%**
		A14.1	***(a)***	***ROB***		**0.00%**
			(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**
			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.	-	**0.00%**
			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	**0.00%**
		A14.2	***(b)***	***RUB***		**0.00%**
			(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**
			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.	-	**0.00%**
			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	**0.00%**
15		**WIDENING AND REPAIR OF ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				**0.00%**
		A.15.1	(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**
			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat including expansion joint.	-	**0.00%**
			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	**0.00%**
16		**NEW ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				**0.00%**
		A.16.1	(i)	Foundation	-	**0.00%**
			(ii)	Sub-structure	-	**0.00%**

			(iii)	Super-structure(including bearings)	-	**0.00%**
			(iv)	Wearing Coat including expansion joint.	-	**0.00%**
			(v)	Miscellaneous items like handrails, crash barriers, road markings etc.		**0.00%**
			(vi)	Wing walls/ Return walls		**0.00%**
			(vii)	Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)	-	**0.00%**
17	**23.70%**	**OTHER WORKS**				**0.00%**
		A17.1	Toll Plaza			**0.00%**
		A17.2	Road Side drain			**11.25%**
		A17.3	Road signs, marking, Km stones, Safety devices etc.			**0.00%**
			(a)	Pavement Marking		**2.01%**
			(b)	Crash barrier/W metal crash barrier		**4.82%**
			(c)	Traffic Sign with over head signboard		**1.45%**
			(d)	Road km Stone,5th km stone and hectometer stone		**0.05%**
			(e)	Traffic blinker LED delineator, stud, reflective payment marker, tree reflector		**0.42%**
			(f)	Traffic impact Attenuators at Abutments and Piers traffic island		**0.00%**
			(g)	Road furniture		**0.00%**
			(h)	Others including Toilet Blocks and Street lightining		**1.04%**
		A17.4	Project facilities			**0.00%**
			(a)	Truck lay-byes		**0.00%**
			(b)	Bus Shelter		**0.50%**
			(c)	Junctions (Major & Minor)		**0.08%**
			(d)	Stair case used for public facilities (HILL SIDES).		**0.02%**
			(e)	Rest areas (viewpoint/recreational areas)		**0.00%**
		A17.5	Road Side Plantation, Median plantation & Turfing of the embankment slope			**0.00%**
		A17.6	Repair of protection works other than approaches to the bridges, elevated sections/ fly-overs/ grade separator and ROBs/ RUBs.			**0.00%**
		A17.7	Traffic diversion, Safety and traffic management during construction			**0.00%**
		A17.8	Slope Protection Works as special requirement for hill road			**0.00%**
			(a)	Hydro Seeding of Cut Slopes in Soil		**0.06%**
			(b)	Seeding and Mulching with Jute net all along the perpetual slide locations		**0.29%**
			(c)	Catchwater Drain		**0.00%**
			(d)	RCC Retaining Wall		**2.68%**
			(e)	Bamboo Plantation for slope protection works		**0.40%**
			(f)	Breast wall		**48.65%**
			(g)	Soil Nailing		**3.59%**

			(h)	Gabion Wall	**22.69%**
	0.56%	**A18**		Utility Shifting (excluding taxes & supervision)	**100.00%**

Sheet-III

1.2.1 Details of utility shifting

Item	Weightage in percentage to the Utility Shifting Price	Stage for Payment	Percentage weightage
Electrical Utilities and public Health Utilities (Water pipe lines and sewage lines)	*0.56%*	(i) EHT line	0%
		(ii) EHT crossings	
		(iii) HT/LT line	46.33%
		(iv) HT/LT crossings	
		(v) Water pipeline	53.67%
		(vi) Water pipeline crossings	
		(vii) Sewage lines	0%
		(viii) Sewage lines crossings	

Procedure of estimating the value of work done

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 10(ten) percent of the total length.
(1)Earthwork up to top of the sub-grade	[Nil]	
(3) Sub-base Course	[Nil]	
(4) Non bituminous Base course	[Nil]	
(5) Bituminous Base course	[Nil]	
(6) Wearing Coat	[Nil]	
(7) 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 prorata 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	**45.93%**	
(2) Sub-base Course	**8.68%**	
(3) Non bituminous Base course	**10.90%**	
(4) Bituminous Base course	**11.51%**	
(5) Wearing Course	**4.33%**	
(6) Shoulder	**0.00%**	
(7) Widening and repair of culverts		
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]	

Stage of Payment	Percentage weightage	Payment Procedure
(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 least Five culverts
Culverts (length <6m)	18.65%	

@ 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.

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)		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

Stage of Payment	Weightage	Payment Procedure
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.	66.96%	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.	20.64%	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, 40% of the stage payment shall be due and payable on casting of girders for each span and balance 60% of the stage payment shall be made on completion of stage specified as above.
(3)Approaches :On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	12.40%	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 &	[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

Stage of Payment	Weightage	Payment Procedure
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.		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

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.

Stage of Payment	Weightage	Payment Procedure
(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 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

Stage of Payment	Weightage	Payment Procedure
		trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of ROB/RUB.
(3) Super-Structure (Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50%ofthe stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat(a)in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(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	[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

Stage of Payment	Weightage	Payment Procedure
including drainage facility complete in all respects as specified		and (b) In case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.1-Wideningandrepairs of Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m)of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where 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

Stage of Payment	Weightage	Payment Procedure
		structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of structure.
(3)Super-Structure(Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders foreach span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all 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.

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.

Stage of Payment	Weightage	Payment Procedure
(2) Roadside drains	11.25%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(3) Road signs, markings, km stones, safety devices etc.		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
a)Pavement Marking	2.01%	
b)Traffic Signs	1.45%	
c)Road km Stone,5th km stone and hectometer stone	0.05%	
d) Traffic blinker LED delineator, stud, reflective payment marker, tree reflector	0.42%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus shelter	0.50%	
b) Stair case used for public facilities	0.02%	
c) Road lighting and Toilets	1.04 %	
d) Rest Area	0.00%	
e) Junction	0.08%	
(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 10% (ten percent)of the total length.
(7) Safety and traffic management during construction	[Nil]	Payment shall be made on prorate basis every six months.
(8) Protection Works		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(a) RCC Retaining Wall	2.68%	
(b) Breast Wall	48.65%	
(c) Gabion Wall	22.69%	
(c) W metal beam crash barrier	4.82%	
(9) Soil Nailing	3.59%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(10) Seeding & Mulching,	0.29 %	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(11) Hydroseeding)	0.06%	
(12) Bamboo plantation	0.40%	

Utility Shifting

Stage of Payment	Weightage	Payment Procedure

1	2	3
Percentage for Utility shifting		
Utility shifting	100%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.

2. Procedure for payment for Maintenance

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

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