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 Clause8.2 (i) of this Agreement.

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

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

Annex –I

(Schedule-A)

Site

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

1. Site

The Site of the [Two-Lane] Project Highway comprises the section of NH-202 commencing from km km 59/230 to km 117/980(Design km 53+110 to km 95+700) i.e. Choithar toMarem Khullen sectionin 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 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	59+230	117+980	53+110	95+700	5-15 m approx.	

3. Carriageway

The present carriageway of the Project Highway is single Lane from km 59/230 to km 94/910. 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. Roadover-bridges(ROB)/Roadunder-bridges(RUB)

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

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

6. Gradeseparators

The Site includes the followinggrade separators:

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

7. Minor bridges

The Siteincludes 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		
1	93/765	Open Foundation	Wall type Abutment	RCC solid wall	1 x 6.0	10.9

8. Railwaylevelcrossings

The Site includes the followingrailway levelcrossings:

S. No.	Location(km)	Remarks
Nil		

9. Underpasses(vehicular,non-vehicular)

The Site includes the followingunderpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
1.	59.570	SLAB	1 X 0.9
2.	60.070	SLAB	1 X 0.9
3.	60.190	SLAB	1 X 1.1
4.	60.380	SLAB	1 X 0.9
5.	60.920	SLAB	1 X 2.9
6.	61.040	SLAB	1 X 1.1
7.	61.210	SLAB	1 X 0.9
8.	61.250	SLAB	1 X 0.9
9.	61.425	SLAB	1 X 1.5
10.	61.755	SLAB	1 X 1.0
11.	61.840	SLAB	1 X 2.9
12.	62.550	SLAB	1 X 0.9
13.	62.680	SLAB	1 X 1.0

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
14.	63.050	SLAB	1 X 1.0
15.	63.230	SLAB	1 X 1.5
16.	64.200	SLAB	1 X 1.2
17.	65.285	SLAB	1 X 0.9
18.	65.375	SLAB	1 X 1.2
19.	65.635	SLAB	1 X 1.1
20.	67.215	SLAB	1 X 0.5
21.	67.245	SLAB	1 X 0.9
22.	67.570	SLAB	1 X 0.9
23.	67.705	SLAB	1 X 1.4
24.	67.790	SLAB	1 X 0.9
25.	68.425	SLAB	1 X 0.9
26.	68.745	SLAB	1 X 0.95
27.	68.920	SLAB	1 X 1.0
28.	69.360	SLAB	1 X 0.8
29.	69.620	SLAB	1 X 1.5
30.	69.750	SLAB	1 X 1.5
31.	70.915	SLAB	1 X 0.9
32.	71.390	SLAB	1 X 0.9
33.	71.440	SLAB	1 X 1.5
34.	71.660	SLAB	1 X 4.0
35.	72.025	SLAB	1 X 1.3
36.	72.600	SLAB	1 X 1.0
37.	73.120	SLAB	1 X 5.7
38.	73.880	SLAB	1 X 1.2
39.	75.150	SLAB	1 X 2.8
40.	75.815	SLAB	1 X 2.6
41.	75.950	SLAB	1 X 1.5
42.	76.310	SLAB	1 X 3.0
43.	76.610	SLAB	1 X 1.4
44.	76.690	SLAB	1 X 1.1
45.	76.735	SLAB	1 X 0.9
46.	76.855	SLAB	1 X 1.2
47.	77.360	SLAB	1 X 1.2
48.	77.770	SLAB	1 X 1.1
49.	77.920	SLAB	1 X 0.9
50.	78.010	SLAB	1 X 4.3
51.	78.090	SLAB	1 X 0.9
52.	78.175	SLAB	1 X 0.9
53.	78.380	SLAB	1 X 1.5
54.	78.650	SLAB	1 X 0.9
55.	78.050	SLAB	1 X 0.9
56.	78.940	SLAB	1 X 1.5
57	79.100	SLAB	1 X 0.9
58	79.315	SLAB	1 X 0.9

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
59	79.940	SLAB	1 X 0.9
60	80.885	SLAB	1 X 1.3
61	85.820	SLAB	1 X 1.3
62	86.400	SLAB	1 X 1.5
63	86.730	SLAB	1 X 0.9
64	87.200	SLAB	1 X 0.9
65	87.320	SLAB	1 X 0.9
66	87.480	SLAB	1 X 0.9
67	87.605	SLAB	1 X 0.9
68	87.765	SLAB	1 X 0.9
69	87.890	SLAB	1 X 0.9
70	88.425	SLAB	1 X 0.8
71	88.825	SLAB	1 X 1.2
72	88.930	SLAB	1 X 1.0
73	89.050	SLAB	1 X 1.0
74	89.310	SLAB	1 X 1.0
75	89.350	SLAB	1 X 0.9
76	89.450	SLAB	1 X 0.8
77	89.625	SLAB	1 X 0.8
78	90.070	SLAB	1 X 1.0
79	90.435	SLAB	1 X 0.8
80	90.950	SLAB	1 X 0.9
81	91.085	SLAB	1 X 0.9
82	91.280	SLAB	1 X 0.9
83	91.625	SLAB	1 X 2.0
84	91.690	SLAB	1 X 0.9
85	92.000	SLAB	1 X 0.9
86	92.170	SLAB	1 X 1.5
87	92.695	SLAB	1 X 0.9
88	93.150	SLAB	1 X 0.9
89	93.400	SLAB	1 X 1.3
90	93.630	SLAB	1 X 1.3
91	93.890	SLAB	1 X 0.9
92	94.120	SLAB	1 X 0.9
93	94.350	SLAB	1 X 0.9
94	94.495	SLAB	1 X 0.9
95	94.615	SLAB	1 X 0.9
96	95.110	SLAB	1 X 0.9
97	95.390	SLAB	1 X 0.9
98	96.020	SLAB	1 X 0.9
99	96.110	SLAB	1 X 0.8
100	96.460	SLAB	1 X 0.9
101	96.585	SLAB	1 X 0.9
102	98.350	SLAB	1 X 0.9
103	98.470	SLAB	1 X 0.7

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
104	98.700	SLAB	1 X 0.7
105	98.890	SLAB	1 X 0.9
106	99.070	SLAB	1 X 0.9
107	99.290	SLAB	1 X 0.9
108	99.460	SLAB	1 X 0.9
109	99.750	SLAB	1 X 0.9
110	99.935	SLAB	1 X 1.3
111	100.060	SLAB	1 X 0.8
112	100.385	SLAB	1 X 1.0
113	100.640	SLAB	1 X 0.7
114	100.740	SLAB	1 X 0.9
115	100.845	SLAB	1 X 0.9
116	101.470	SLAB	1 X 0.9
117	102.040	SLAB	1 X 0.9
118	102.105	SLAB	1 X 0.9
119	102.725	SLAB	1 X 1.1
120	103.075	SLAB	1 X 0.9
121	103.170	SLAB	1 X 0.9
122	103.390	SLAB	1 X 1.1
123	103.525	SLAB	1 X 0.8
124	104.340	SLAB	1 X 0.9
125	104.620	SLAB	1 X 1.0
126	104.900	SLAB	1 X 0.9
127	105.275	SLAB	1 X 1.0
128	105.410	SLAB	1 X 1.0
129	105.590	SLAB	1 X 0.9
130	111.050	SLAB	1 X 3.0
131	111.470	SLAB	1 X 0.9
132	111.740	SLAB	1 X 0.9
133	112.435	SLAB	1 X 0.7
134	112.485	SLAB	1 X 0.9
135	112.615	SLAB	1 X 0.9
136	114.290	SLAB	1 X 3.0
137	115.130	SLAB	1 X 5.7
138	115.400	SLAB	1 X 1.1
139	115.600	SLAB	1 X 1.5
140	116.490	SLAB	1 X 1.1
141	116.650	SLAB	1 X 1.1
142	116.880	SLAB	1 X 1.0
143	116.920	SLAB	1 X 3.0
144	117.290	SLAB	1 X 1.4
145	117.370	SLAB	1 X 1.3

11. Busbays

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

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

12. Truck Laybyes

The details of trucklay byes are as follows:

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

13. Roadsidedrains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
1	67310	67366	Masonry/cc (Left Side)	
2	67472	67715	Masonry (Left Side)	
3	59274	59795	Masonry (Right Side)	
4	60066	60487	Masonry (Right Side)	
5	61210	61262	Masonry (Right Side)	
6	61616	62364	Masonry (Left Side)	
7	62414	62695	cc (Left Side)	
8	62862	63056	cc (Right Side)	
9	63322	63637	cc (Left Side)	
10	64152	64441	cc (Left Side)	
11	64842	65069	cc (Left Side)	
12	65130	65205	cc (Left Side)	
13	65267	65750	cc (Left Side)	
14	65712	66018	cc (Right Side)	
15	66126	66788	cc (Left Side)	
16	66820	67223	cc (Left Side)	
17	67715	67870	cc (Left Side)	
18	67970	69136	cc (Right Side)	
19	69300	70126	cc (Left Side)	
20	70129	70215	cc (Left Side)	
21	71177	71700	cc (Left Side)	
22	71779	72318	cc (Right Side)	
23	72600	73122	cc (Left Side)	
24	73716	73870	cc (Left Side)	
25	80359	80444	Masonry/cc (Right Side)	
26	81375	81418	Masonry (Right Side)	
27	82000	82111	Masonry (Right Side)	
28	82040	82111	Masonry (Left Side)	
29	82179	82366	Masonry (Right Side)	

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
30	84645	84961	Masonry (Right Side)	
31	74362	75475	Masonry (Left Side)	
32	75610	75900	cc (Right Side)	R
33	76395	76695	cc (Right Side)	R
34	76854	77000	cc (Right Side)	R
35	77900	78100	cc (Right Side)	R
36	78170	78380	cc (Right Side)	R
37	78520	78873	cc (Right Side)	R
38	79205	79363	cc (Right Side)	R
39	79557	80070	cc (Right Side)	R
40	80248	80359	cc (Right Side)	R
41	80444	81375	cc (Right Side)	R
42	81418	81566	cc (Right Side)	R
43	81605	81805	cc (Right Side)	R
44	81934	82000	cc (Right Side)	R
45	82111	82179	cc (Right Side)	R
46	82479	82585	cc (Right Side)	R
47	82700	82927	cc (Right Side)	R
48	84395	84645	cc (Right Side)	R
49	84961	85635	cc (Right Side)	R
50	85712	86875	cc (Right Side)	R
51	86934	87095	cc (Right Side)	R
52	87320	88000	cc (Right Side)	R
53	88233	88818	cc (Right Side)	R
54	88960	89980	cc (Right Side)	R
55	90020	90105	cc (Left Side)	L
56	90195	90241	cc (Left Side)	L
57	90307	90650	cc (Right Side)	L
58	90795	91266	cc (Left Side)	L
59	91400	91514	cc (Left Side)	L
60	91603	91630	cc (Left Side)	L
61	91675	91972	cc (Left Side)	L
62	92019	92500	cc (Left Side)	L
63	92905	92930	cc (Right Side)	L
64	92981	93047	cc (Left Side)	L
65	93080	93133	cc (Left Side)	L
66	93165	93336	cc (Left Side)	L
67	93584	94118	cc (Left Side)	L
68	94410	94500	cc (Left Side)	L
69	94595	94635	cc (Left Side)	L
70	94782	94910	cc (Left Side)	L

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
71	105756	105830	Masonry/cc (Right Side)	R
72	109822	110036	Masonry (Right Side)	R
73	94910	95760	cc (Right Side)	L
74	95970	97934	cc (Right Side)	L
75	97981	98981	cc (Right Side)	L
76	99044	99300	cc (Right Side)	L
77	99415	99535	cc (Right Side)	L
78	99751	101174	cc (Right Side)	L
79	101245	101564	cc (Right Side)	L
80	101610	101772	cc (Right Side)	L
81	101827	101870	cc (Right Side)	R
82	102100	102152	cc (Right Side)	R
83	102243	102634	cc (Right Side)	R
84	102810	102930	cc (Right Side)	R
85	103110	103439	cc (Right Side)	R
86	104010	104490	cc (Right Side)	R
87	105025	105080	cc (Right Side)	R
88	105180	105214	cc (Right Side)	R
89	105270	105458	cc (Right Side)	R
90	105460	105675	cc (Right Side)	R
91	105830	106090	cc (Right Side)	R
92	106518	106721	cc (Right Side)	R
93	106767	106795	cc (Right Side)	R
94	106910	107110	cc (Right Side)	R
95	107527	107593	cc (Right Side)	R
96	108065	108211	cc (Left Side)	R
97	108457	108800	cc (Left Side)	R
98	108695	108907	cc (Right Side)	R
99	109047	109822	cc (Left Side)	R
100	110572	111885	cc (Left Side)	R
101	112079	113281	cc (Left Side)	R
102	113412	113603	cc (Left Side)	R
103	113770	117980	cc (Left Side)	R

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	53.430	Awangtang Villagr	Y(R)	
2	55.410	Ukhrul	Y(L)	
3	55.550	Ukhrul Market	Y (L)	
4	58.600	BRO Office	Y(L)	
5	59.225	Ukhrul Bazar	Y(L)	
6	67.200	Shirui Village	Y (L)	3-legged
7	67.500	Shirui Village	Y(L)	3-legged

6. Bypasses

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

Sl.No.	Name of bypass (town)	Chainage(km)From kmtokm	Length (inKm)
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	138.386											
	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	53.110	95.700	5.86	13.4	5.6				12 Nos	74 Nos	67 Nos
	TOTAL		5.86 km	13.4 Km	5.6 Km				12 Nos	74 Nos	67 Nos

c) Transformer details:

Sl. No.	Chainage(km)		11KV	
			NO	Capacity (KVA)
1	53.110	95.700	1	25
2			0	63
3			1	100
	TOTAL			**2 NOs**

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

The site includes the following Public Health utilities:-

SL No	Chainage		Length in (Km)				Crossing				Water Tank	
	from	To	Water supply Line		Sewage Line		Water supply Line		Sewage Line		Capacity in Lts	Quantity (in Nos.)
			With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow		
1	53.110	95.700		66.2							40000	2

(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 53.110 to Km 95.700	42.59	20 m (Built-up Area) 24 m (Open Area)	At 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 onsite/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 particulars all other essential project specific details as required should be provided in order to define the Scope of the Project clearly and precisely.]

1. Widening of the Existing Highway

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

(ii) Width of Carriageway

(a) Two-Lanning [with] 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	Langdang/Choithar	56.100 km to 56.600 km	7	As per attached TCS drawing	2
2	Langdang	56.600 km to 57.500 km	7	As per attached TCS drawing	2A
3	Langdang	58.500 km – 59.200 km	7	As per attached TCS drawing	2
4	Shirui	63.300 km to 64.700 km	7	As per attached TCS drawing	2A
5	Nungbi Khullen	74.250 km to 74.800 km	7	As per attached TCS drawing	**2A**
6	Nungbi Khullen	75.500 km to 76.000 km	7	As per attached TCS drawing	**2A**
7	Nungbi Khullen	76.300 km to 76.600 km	7	As per attached TCS drawing	**2**
8	Nungbi Khullen	77.800 km to 78.100 km	7	As per attached TCS drawing	**2A**

Sl. No.	Built-up stretch (Township)	Location	Width (m)	Typical Cross Section (Refer to Manual)	Remarks (Reference to cross section)
9	Nungbi Khullen	78.100 km to 78.660 km	7	As per attached TCS drawing	**2**
10	Nungbi Khullen	79.600 km to 79.830 km	7	As per attached TCS drawing	**2A**
11	Namrei	94.700 km to 95.300 km	7	As per attached TCS drawing	**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 40 kmph are summarized below:

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks (Design Speed in kmph)
1.	66979.105	Built-up	30.000

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

(iv) Right of Way

[Refer to provision of relevant Manual].
Details of the Right of Way are given in Annex-II of Schedule-A.

(v) Type of shoulders
[Refer to provision of relevant Manual and specify]

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

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/footpaths	Reference to cross section
1	56.100 km to 56.600 km	Footpath on Covered Drains	2
2	58.500 km – 59.200 km	Footpath on Covered Drains	2
3	76.300 km to 76.600 km	Footpath on Covered Drains	2
4	78.100 km to 78.660 km	Footpath on Covered Drains	2

5	94.700 km to 95.300 km	Footpath on Covered Drains	2

(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) Lateralandverticalclearancesatoverpassesshallbeasperrequirementsspecifiedinthe 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

Serviceroadsshallbeconstructedatthelocationsandforthelengthsindicatedbelow: [Refer requirementsspecifiedinthe relevant Manual]

Sl. No.	Location ofservice road(fromkmtokm)	Righthandside(RHS)/Lefthand side(LHS)/orBothsides	Length (km)of service road
Nil			

(ix) Grade separatedstructures

(a) Gradeseparatedstructuresshallbeprovidedasperprovisionofthe Manual. The requisite are givenbelow:

[Refer to requirementsspecifiedinthe relevant Manual]

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

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

Sl.	Location	Type of	Cross road at	Remarks.if any

No.		structure Length(m)	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 provisionofthe relevant Manual and specify the requirements of cattle and pedestrian underpass/overpass]

Sl.No.	Location	Typeofcrossing
Nil		

(xi) Typical cross-sections of the Project Highway

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

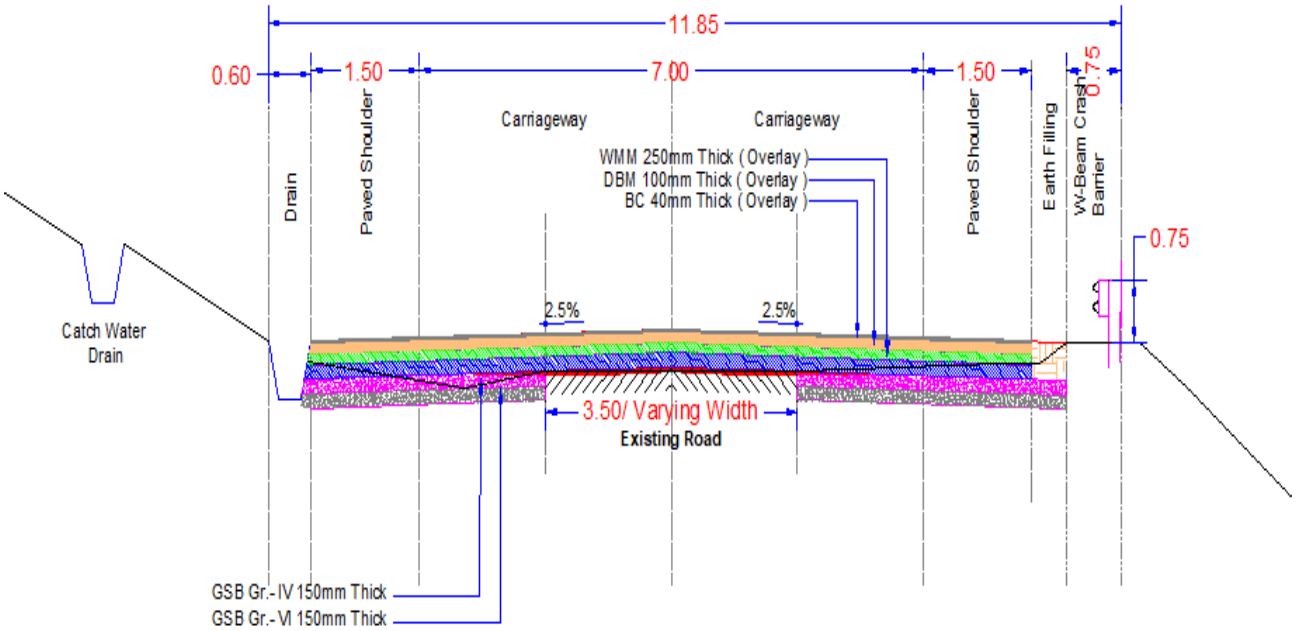
TCS TYPE	DESCRIPTION	Length (m)
TYPICAL-1	2-lane with 1.5 m earthen shoulders with W-beam crash barrier on valley side and 0.6 m lined drain on hill side	15900
TYPICAL-2	2-lane with 1.5 m earthen shoulders with 1m covered drain on both side	2600
TYPICAL-2(A)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on both side	6250
TYPICAL-2(B)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain and hill section on both side	5600
TYPICAL-3	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on hill side	1590
TYPICAL-3(A)	2-lane with 1.5 m earthen shoulders with breast wall on hill side	800
TYPICAL-3(B)	2-lane with 1.5 m earthen shoulders with breast wall on hill side and retaining wall on valley side	0
TYPICAL-4	2-lane with 1.5 m earthen shoulders with breast wall on hill side and W-beam crash barrier on valley side	1850
TYPICAL-5	2-lane with 1.5 m with 0.6 m lined drain on hill side and retaining wall & W-beam crash barrier on valley side	2800
TYPICAL-6	2-lane with 1.5 m earthen shoulder with breast wall on hill side and retaining wall & W-beam crash barrier on valley side	0
TYPICAL-7	2-lane with 1.5 m earthen with retaining wall & W-beam crash barrier on both side	0
TYPICAL-7(A)	2-lane with 1.5 m earthen with Reinforced Earth Wall on both side	0
TYPICAL-8	2-lane with 1.5 m earthen with Breast Wall on both side	5200
	Total length =	**42.590 km**

Typical Cross Section 1				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	54.500	54.645	145.000	145.000
2	54.645	56.100	1455.000	1353.500
3	57.500	58.500	1000.000	939.400
4	59.200	59.450	250.000	239.900
5	60.600	62.300	1700.000	1609.100
6	65.500	67.500	2000.000	1876.300
7	68.300	69.800	1500.000	1399.000
8	72.000	74.250	2250.000	2152.000
9	74.800	75.500	700.000	665.000
10	76.000	76.300	300.000	286.000
11	78.600	79.600	1000.000	944.000
12	81.600	83.900	2300.000	2223.000
13	89.600	90.000	400.000	400.000
14	91.300	91.700	400.000	379.000
15	94.400	94.700	300.000	286.000
16	95.500	95.700	200.000	200.000
			15900.000	15097.200
Typical Cross Section 2				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1			0.000	0.000
2	56.100	56.600	500.000	489.900
3	58.500	59.200	700.000	659.600
4	76.300	76.600	300.000	286.000
5	78.100	78.600	500.000	479.000
6	94.700	95.300	600.000	565.000
			2600.000	2479.500
Typical Cross Section 2A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	56.600	57.500	900.000	849.500
2	63.300	64.700	1400.000	1315.700
3	74.250	74.800	550.000	522.000
4	75.500	76.000	500.000	479.000
5	77.800	78.100	300.000	293.000
6	79.600	79.830	230.000	227.900
7	79.830	80.500	670.000	642.000
8	80.900	81.600	700.000	672.000
9	87.000	87.800	800.000	786.000

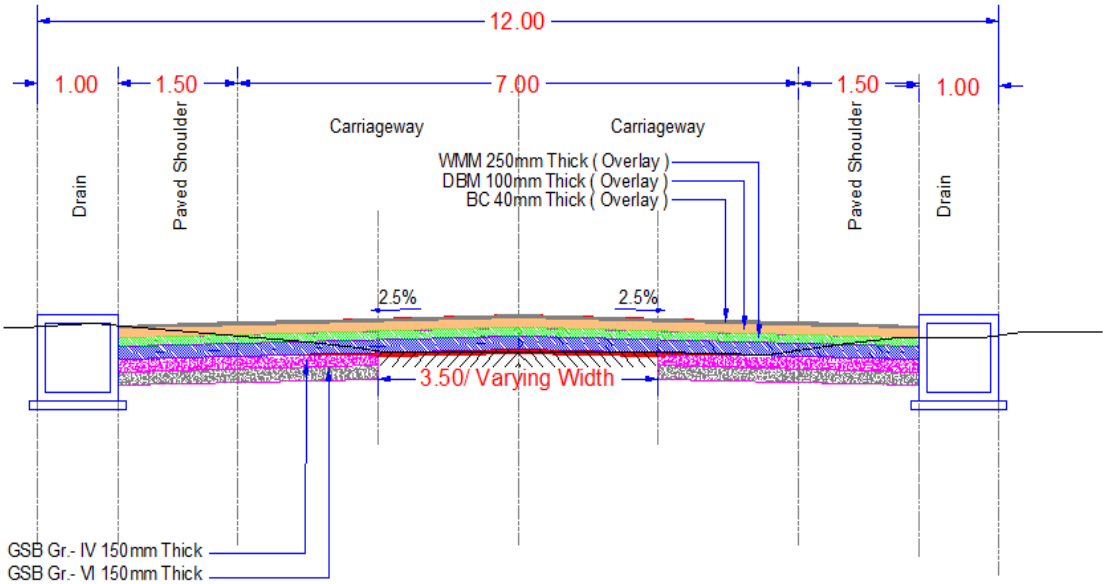
10	95.300	95.500	200.000	200.000
			6250.000	5987.100
Typical Cross Section 2B				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	85.000	86.400	1400.000	1358.000
2	87.800	88.000	200.000	193.000
3	90.000	91.300	1300.000	1279.000
4	91.700	94.400	2700.000	2637.000
			5600.000	5467.000
Typical Cross Section 3				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	53.110	54.100	990.000	879.400
2	86.400	87.000	600.000	572.000
			1590.000	1451.400
Typical Cross Section 3A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	64.700	65.200	500.000	469.700
2	65.200	65.500	300.000	300.000
			800.000	769.700
Typical Cross Section 4				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	59.450	60.600	1150.000	1100.000
2	77.100	77.800	700.000	658.000
			1850.000	1758.000
Typical Cross Section 5				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	76.600	77.100	500.000	479.000
2	80.500	80.900	400.000	393.000
3	83.900	85.000	1100.000	1051.000
4	88.000	88.800	800.000	758.000
			2800.000	2681.000
Typical Cross Section 8				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	54.100	54.500	400.000	379.800
2	62.300	63.300	1000.000	959.600
3	67.500	68.300	800.000	748.000
4	69.800	71.500	1700.000	1619.700
5	71.500	72.000	500.000	451.000

6	88.800	89.600	800.000	786.000
			5200.000	4944.100
Total length of Road			**42590.00**	**m**
Total length of Road after deducting culverts			**40635.00**	**m**

TYPICAL CROSS SECTION 1



TYPICAL CROSS-SECTION 2



TYPICAL CROSS-SECTION 2A

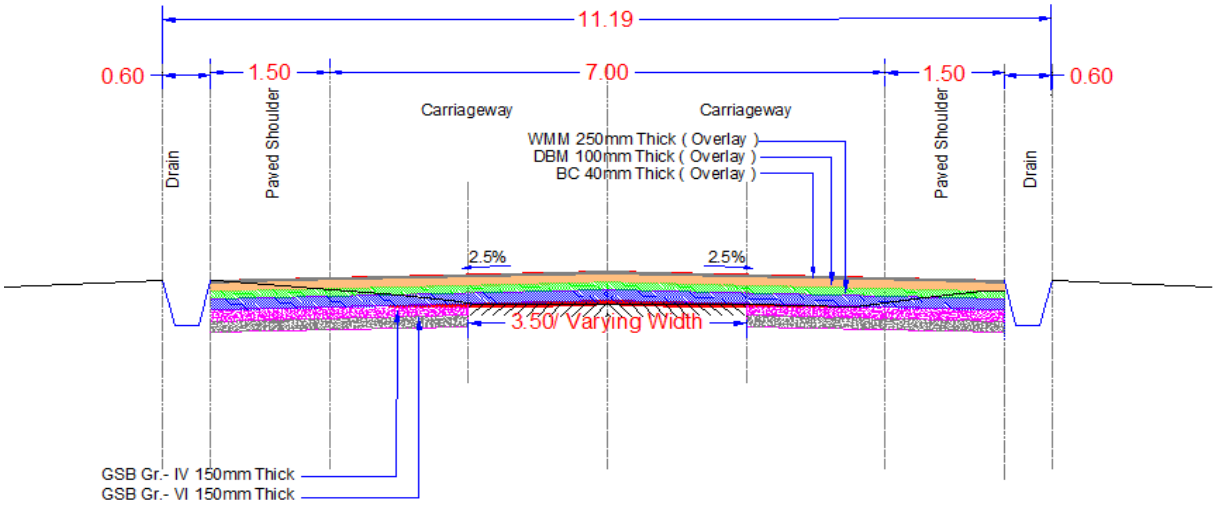


Figure 1: Typical Cross-section 2B

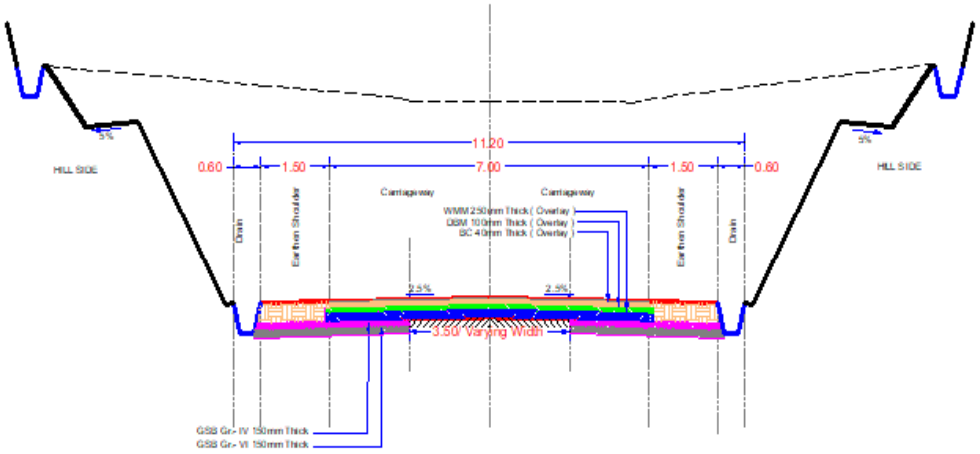


Figure 2: Typical Cross-section 3

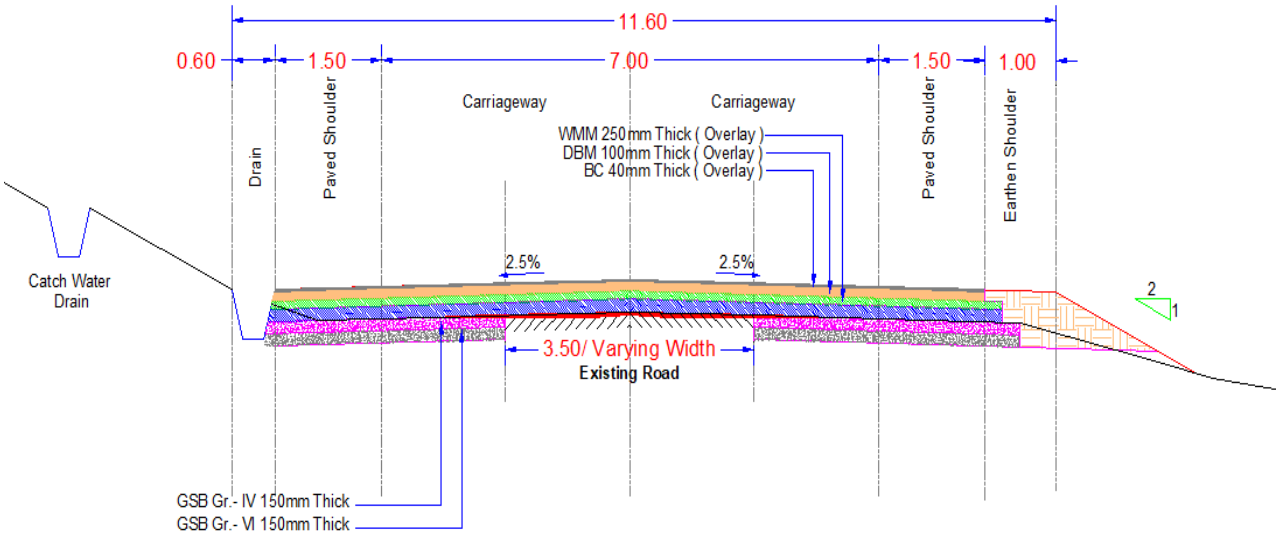


Figure 3: Typical Cross-section 3A

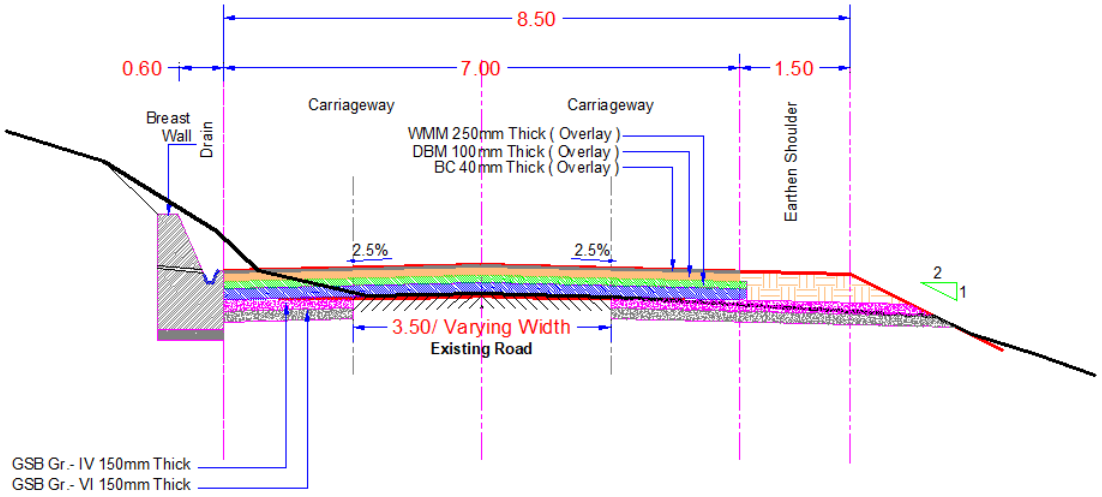


Figure 4: Typical Cross-section 4

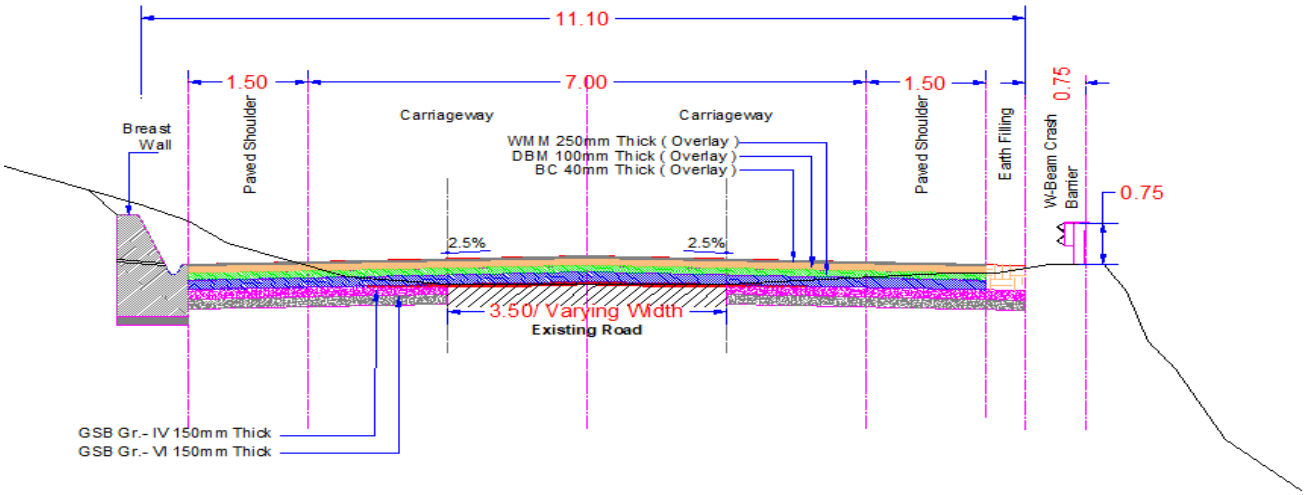


Figure 5: Typical Cross-section 5

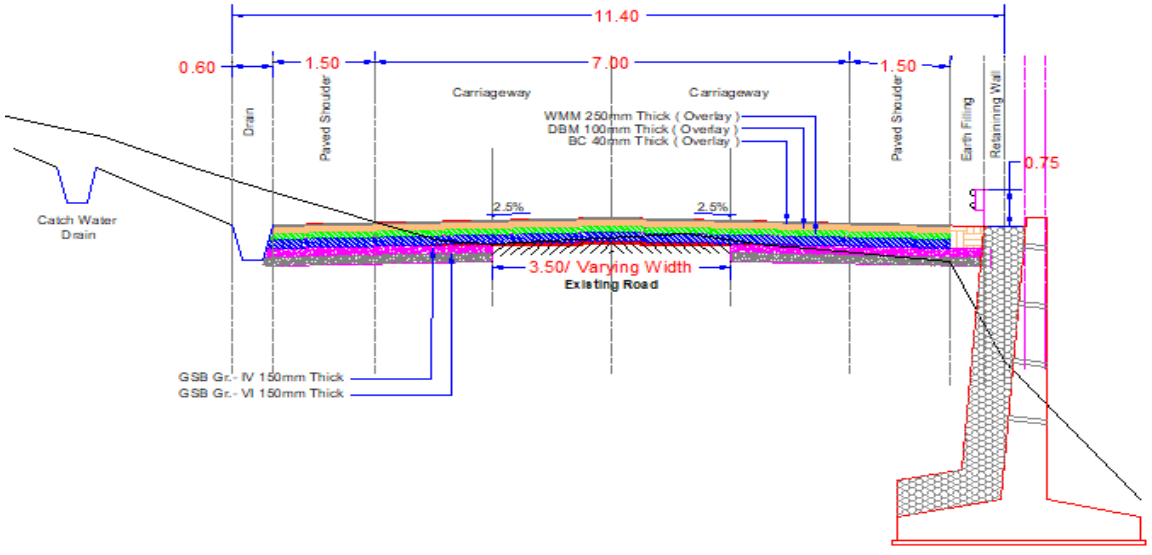
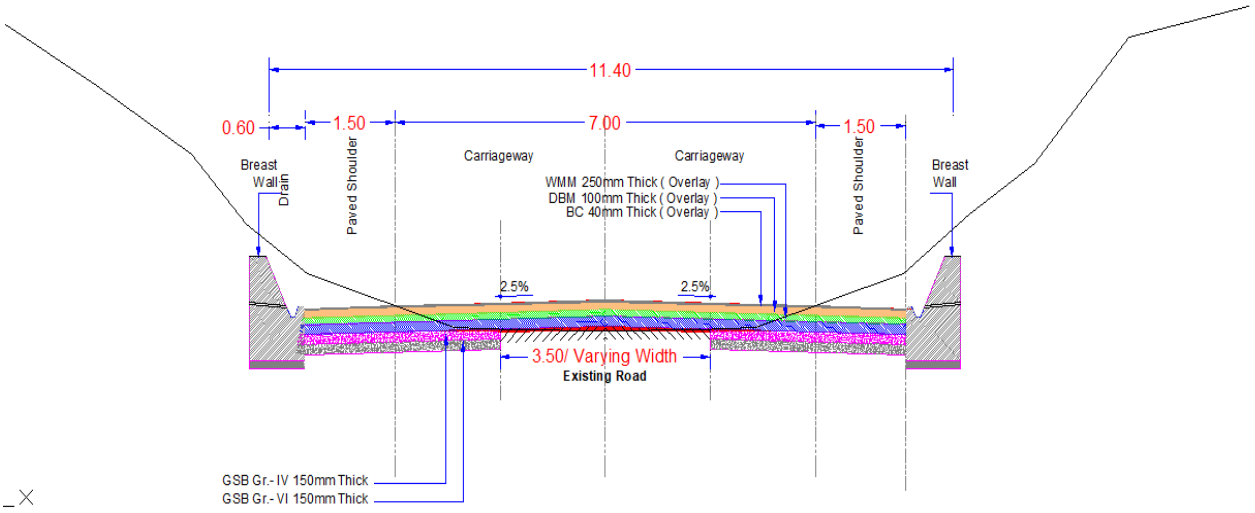


Figure 6: Typical Cross-section 8



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]

Properlydesignedintersectionsshallbeprovidedatthelocationsandofthetypes and features given in the tables below:

(i) At-grade intersections

Major Intersections

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

Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	59.445	Y (L)	Shiroy Village
2	59.720	Y (L)	Shiroy Village
3	84.173	Y(L)	27th Assam Rifle
4	87/220	Y(R)	Awang Kasom

(ii) Grade separated intersection with/without ramps

Sl. No.	Location	Salient features	Minimumlengthof viaduct tobe provided	Roadtobecarried over/underthe structures
Nil				

4. Road Embankment and Cut Section

(i) Widening and improvement of the existing road embankment/cuttings and

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

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

The existing road shall be raised in the following sections:

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

5. PavementDesign

(i) Pavement design shall becarried outin accordance with provision of the relevant manual.

(ii) Type of pavement

Flexible Pavement

(iii) Design requirements

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

(a) Design Period and strategy

Flexible pavement for new pavement or for widening and strengthening of the existing pavement shall be designed for a minimum design period of20 years. Stage construction shall not be permitted.

(b) Design Traffic

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

(iv) Reconstruction of stretches

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

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

Sl.No.	Chainage		Length	Typical Cross-section	Improvement
	To	From			
1	53.11	54.1	990	3	Reconstruction
2	54.1	54.5	400	8	Reconstruction
3	54.5	56.1	1600	1	Reconstruction
4	56.1	56.6	500	2	Reconstruction
5	56.6	57.5	900	2A	Reconstruction
6	57.5	58.5	1000	1	Reconstruction
7	58.5	59.2	700	2	Reconstruction
8	59.2	59.45	250	1	Reconstruction

Sl.No.	Chainage		Length	Typical Cross-section	Improvement
	To	From			
9	59.45	60.6	1150	4	Reconstruction
10	60.6	62.3	1700	1	Reconstruction
11	62.3	63.3	1000	8	Reconstruction
12	63.3	64.7	1400	2A	Reconstruction
13	64.7	65.2	500	3A	Reconstruction
14	65.2	65.5	300	3A	Reconstruction
15	65.5	67.5	2000	1	Reconstruction
16	67.5	68.3	800	8	Reconstruction
17	68.3	69.8	1500	1	Reconstruction
18	69.8	71.5	1700	8	Reconstruction
19	71.5	74.25	2750	1	Reconstruction
20	74.25	74.8	550	2A	Reconstruction
21	74.8	75.5	700	1	Reconstruction
22	75.5	76	500	2A	Reconstruction
23	76	76.3	300	1	Reconstruction
24	76.3	76.6	300	2	Reconstruction
25	76.6	77.1	500	5	Reconstruction
26	77.1	77.8	700	4	Reconstruction
27	77.8	78.1	300	2A	Reconstruction
28	78.1	78.6	500	2	Reconstruction
29	78.6	79.6	1000	1	Reconstruction
30	79.6	79.83	230	2A	Reconstruction
31	79.83	80.5	670	2A	Reconstruction
32	80.5	80.9	400	5	Reconstruction
33	80.9	81.6	700	2A	Reconstruction
34	81.6	83.9	2300	1	Reconstruction
35	83.9	85	1100	5	Reconstruction
36	85	86.4	1400	2B	Reconstruction
37	86.4	87	600	3	Reconstruction
38	87	87.8	800	2A	Reconstruction
39	87.8	88	200	2B	Reconstruction
40	88	88.8	800	5	Reconstruction
41	88.8	89.6	800	8	Reconstruction
42	89.6	90	400	1	Reconstruction
43	90	91.3	1300	2B	Reconstruction
44	91.3	91.7	400	1	Reconstruction
45	91.7	94.4	2700	2B	Reconstruction
46	94.4	94.7	300	1	Reconstruction
47	94.7	95.3	600	2	Reconstruction

6. Roadside Drainage

Drainage system including surface and sub surface drains for the Project Highway has been

provided in the table given below:

RCC Covered Drain

Chainage (Km)		Length of CD	Net Length (m)
From	To		
56.100	56.600	500	1500
58.500	59.200	700	700
76.300	76.600		300
78.100	78.600		500
94.700	95.300		600
		Total length =	3600

RR Masonry Trapezoidal Drain

Chainage (Km)		Side	Net Length (m)
From	To		
53.11	54.1	Trapezoidal PCC Drain on Hill side	990
54.1	54.5	Trapezoidal Drain in Breast Wall on Hill Side	400
54.5	56.1	Trapezoidal PCC Drain on Hill side	1600
56.6	57.5	Trapezoidal PCC Drain on both side	900
57.5	58.5	Trapezoidal PCC Drain on Hill side	1000
59.2	59.45	Trapezoidal PCC Drain on Hill side	250
59.45	60.6	Trapezoidal Drain in Breast Wall on Hill Side	1150
60.6	62.3	Trapezoidal PCC Drain on Hill side	1700
62.3	63.3	Trapezoidal Drain in Breast Wall on Hill Side	1000
63.3	64.7	Trapezoidal PCC Drain on both side	1400
64.7	65.2	Trapezoidal Drain in Breast Wall on Hill Side	500
65.2	65.5	Trapezoidal Drain in Breast Wall on Hill Side	300
65.5	67.5	Trapezoidal PCC Drain on Hill side	2000
67.5	68.3	Trapezoidal Drain in Breast Wall on Hill Side	800
68.3	69.8	Trapezoidal PCC Drain on Hill side	1500
69.8	71.5	Trapezoidal Drain in Breast Wall on Hill Side	1700
71	74.25	Trapezoidal PCC Drain on Hill side	2750
74.25	74.8	Trapezoidal PCC Drain on both side	550
74.8	75.5	Trapezoidal PCC Drain on Hill side	700
75.5	76	Trapezoidal PCC Drain on both side	500
76	76.3	Trapezoidal PCC Drain on Hill side	300
76.6	77.1	Trapezoidal PCC Drain on Hill side	500
77.1	77.8	Trapezoidal Drain in Breast Wall on Hill Side	700
77.8	78.1	Trapezoidal PCC Drain on both side	300
78.6	79.6	Trapezoidal PCC Drain on Hill side	1000
79.6	79.83	Trapezoidal PCC Drain on both side	230
79.83	80.5	Trapezoidal PCC Drain on both side	670
80.5	80.9	Trapezoidal PCC Drain on Hill side	400
80.9	81.6	Trapezoidal PCC Drain on both side	700

Chainage (Km)		Side	Net Length (m)
From	To		
81.6	83.9	Trapezoidal PCC Drain on Hill side	2300
83.9	85	Trapezoidal PCC Drain on Hill side	1100
85	86.4	Trapezoidal PCC Drain on both side	1400
86.4	87	Trapezoidal PCC Drain on Hill side	600
87	87.8	Trapezoidal PCC Drain on both side	800
87.8	88	Trapezoidal PCC Drain on both side	200
88	88.8	Trapezoidal PCC Drain on Hill side	800
88.8	89.6	Trapezoidal Drain in Breast Wall on Hill Side	800
89.6	90	Trapezoidal PCC Drain on Hill side	400
90	91.3	Trapezoidal PCC Drain on both side	1300
91.3	91.7	Trapezoidal PCC Drain on Hill side	400
91.7	94.4	Trapezoidal PCC Drain on both side	2700
94.4	94.7	Trapezoidal PCC Drain on Hill side	300
		Length =	**33550**

7. Design ofStructures

(i)General

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

(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:

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

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

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

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

Thefollowingstructuresshallbedesigned tocarryutility servicesspecifiedin Table below:

[Refer to provisionofthe relevant Manual and provide details]

Sl.No.	Bridge at km	Utility service to be carried	Remarks
Nil			

(f) Cross-sectionofthenewculvertsandbridgesatdecklevelfortheproject Highwayshall conformtothetypicalcross-sectionsgiveninprovisionofthe 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:

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

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	53.360	1 X 0.9	SLAB
2	53.825	1 X 0.9	SLAB
3	54.095	1 X 0.9	SLAB
4	54.760	1 X 0.9	SLAB
5	54.810	1 X 0.9	SLAB
6	55.180	1 X 1.0	SLAB
7	55.685	1 X 0.9	SLAB
8	55.810	1 X 1.0	SLAB
9	56.135	1 X 1.0	SLAB
10	56.975	1 X 1.2	SLAB
11	58.025	1 X 0.9	SLAB
12	58.115	1 X 1.2	SLAB
13	58.300	1 X 1.1	SLAB
14	59.445	1 X 0.5	SLAB
15	59.475	1 X 0.9	SLAB
16	59.800	1 X 0.9	SLAB
17	60.020	1 X 0.9	SLAB
18	60.625	1 X 0.9	SLAB
19	60.920	1 X 0.95	SLAB
20	61.525	1 X 0.8	SLAB
21	62.905	1 X 0.9	SLAB
22	63.335	1 X 0.9	SLAB
23	65.195	1 X 1.2	SLAB
24	65.825	1 X 2.8	SLAB
25	66.345	1 X 2.6	SLAB
26	66.490	1 X 1.5	SLAB
27	66.770	1 X 3.0	SLAB
28	67.115	1 X 0.9	SLAB
29	68.055	1 X 1.1	SLAB
30	68.200	1 X 0.9	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
31	68.365	1 X 0.9	SLAB
32	68.445	1 X 0.9	SLAB
33	68.605	1 X 1.5	SLAB
34	68.855	1 X 0.9	SLAB
35	69.010	1 X 0.9	SLAB
36	69.220	1 X 0.9	SLAB
37	69.425	1 X 0.9	SLAB
38	69.965	1 X 0.9	SLAB
39	72.780	1 X 1.5	SLAB
40	73.050	1 X 0.9	SLAB
41	73.405	1 X 0.9	SLAB
42	73.545	1 X 0.9	SLAB
43	73.680	1 X 0.9	SLAB
44	73.795	1 X 0.9	SLAB
45	73.940	1 X 0.9	SLAB
46	74.045	1 X 0.9	SLAB
47	74.525	1 X 0.8	SLAB
48	75.000	1 X 1.0	SLAB
49	75.295	1 X 0.9	SLAB
50	75.390	1 X 0.8	SLAB
51	75.550	1 X 0.8	SLAB
52	75.780	1 X 1.0	SLAB
53	76.090	1 X 0.8	SLAB
54	76.580	1 X 0.9	SLAB
55	76.710	1 X 0.9	SLAB
56	76.895	1 X 0.9	SLAB
57	77.135	1 X 2.0	SLAB
58	77.200	1 X 0.9	SLAB
59	77.415	1 X 0.9	SLAB
60	77.525	1 X 1.5	SLAB
61	77.980	1 X 0.9	SLAB
62	78.425	1 X 0.9	SLAB
63	78.930	1 X 0.9	SLAB
64	79.155	1 X 0.9	SLAB
65	79.310	1 X 0.9	SLAB
66	79.450	1 X 0.9	SLAB
67	79.565	1 X 0.9	SLAB
68	79.970	1 X 0.9	SLAB
69	80.195	1 X 0.9	SLAB
70	80.820	1 X 0.9	SLAB
71	80.905	1 X 0.8	SLAB
72	81.235	1 X 0.9	SLAB
73	81.360	1 X 0.9	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
74	82.680	1 X 0.9	SLAB
75	82.785	1 X 0.7	SLAB
76	83.005	1 X 0.7	SLAB
77	83.180	1 X 0.9	SLAB
78	83.350	1 X 0.9	SLAB
79	83.550	1 X 0.9	SLAB
80	83.715	1 X 0.9	SLAB
81	84.005	1 X 0.9	SLAB
82	84.300	1 X 0.8	SLAB
83	84.820	1 X 0.7	SLAB
84	84.910	1 X 0.9	SLAB
85	85.010	1 X 0.9	SLAB
86	85.535	1 X 0.9	SLAB
87	85.970	1 X 0.9	SLAB
88	86.025	1 X 0.9	SLAB
89	86.390	1 X 1.1	SLAB
90	86.660	1 X 0.9	SLAB
91	86.735	1 X 0.9	SLAB
92	87.045	1 X 0.8	SLAB
93	87.825	1 X 0.9	SLAB
94	88.050	1 X 1.0	SLAB
95	88.315	1 X 0.9	SLAB
96	88.900	1 X 0.9	SLAB
97	91.070	1 X 0.9	SLAB
98	91.325	1 X 0.9	SLAB
99	91.685	1 X 0.7	SLAB
100	91.730	1 X 0.9	SLAB
101	91.855	1 X 0.9	SLAB
102	93.080	1 X 3.0	SLAB
103	93.765	1 X 5.7	SLAB
104	94.225	1 X 1.5	SLAB
105	94.635	1 X 1.1	SLAB
106	94.945	1 X 3.0	SLAB

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

(c) Widening of existing culverts:

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

Sl. No.	Culvert location	Type, span, height and width of existing culvert (m)	Repairs to be carried out [specify]
1	53.945	1 X 1.1	SLAB

Sl. No.	Culvert location	Type, span, height and width of existing culvert (m)	Repairs to be carried out [specify]
2	54.525	1 X 2.9	SLAB
3	54.65	1 X 1.1	SLAB
4	54.975	1 X 1.5	SLAB
5	55.265	1 X 2.9	SLAB
6	56.285	1 X 1.5	SLAB
7	59.935	1 X 1.4	SLAB
8	61.1	1 X 1.0	SLAB
9	61.75	1 X 1.5	SLAB
10	61.87	1 X 1.5	SLAB
11	63.395	1 X 1.5	SLAB
12	63.605	1 X 4.0	SLAB
13	63.735	1 X 1.3	SLAB
14	64.205	1 X 1.0	SLAB
15	64.685	1 X 5.7	SLAB
16	66.99	1 X 1.4	SLAB
17	67.07	1 X 1.1	SLAB
18	67.235	1 X 1.2	SLAB
19	67.705	1 X 1.2	SLAB
20	68.29	1 X 4.3	SLAB
21	69.105	1 X 1.5	SLAB
22	70.78	1 X 1.3	SLAB
23	72.305	1 X 1.3	SLAB
24	74.785	1 X 1.2	SLAB
25	74.885	1 X 1.0	SLAB
26	75.235	1 X 1.0	SLAB
27	78.63	1 X 1.3	SLAB
28	78.795	1 X 1.3	SLAB
29	84.18	1 X 1.3	SLAB
30	84.575	1 X 1.0	SLAB
31	86.935	1 X 1.1	SLAB
32	88.61	1 X 1.0	SLAB
33	88.745	1 X 1.0	SLAB
34	90.715	1 X 3.0	SLAB
35	94.03	1 X 1.1	SLAB
36	94.795	1 X 1.1	SLAB
37	94.91	1 X 1.0	SLAB
38	95.195	1 X 1.4	SLAB
39	95.275	1 X 1.3	SLAB

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

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	53.250	1 X 1.5	SLAB
2	53.615	1 X 1.5	SLAB
3	54.180	1 X 1.5	SLAB
4	54.390	1 X 1.5	SLAB
5	55.465	1 X 1.5	SLAB
6	56.550	1 X 1.5	SLAB
7	56.605	1 X 1.5	SLAB
8	56.800	1 X 1.5	SLAB
9	57.220	1 X 1.5	SLAB
10	57.465	1 X 1.5	SLAB
11	57.700	1 X 1.5	SLAB
12	57.910	1 X 1.5	SLAB
13	58.425	1 X 1.5	SLAB
14	58.630	1 X 1.5	SLAB
15	58.785	1 X 1.5	SLAB
16	58.920	1 X 1.5	SLAB
17	59.200	1 X 1.5	SLAB
18	60.305	1 X 1.5	SLAB
19	62.015	1 X 1.5	SLAB
20	62.115	1 X 3.0	SLAB
21	62.225	1 X 1.5	SLAB
22	62.445	1 X 1.5	SLAB
23	62.700	1 X 1.5	SLAB
24	63.180	1 X 1.5	SLAB
25	63.835	1 X 1.5	SLAB
26	64.025	1 X 1.5	SLAB
27	65.040	1 X 1.5	SLAB
28	65.500	1 X 1.5	SLAB
29	65.595	1 X 1.5	SLAB
30	66.125	1 X 1.5	SLAB
31	67.310	1 X 5.0	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
32	67.490	1 X 1.5	SLAB
33	67.950	1 X 1.5	SLAB
34	69.485	1 X 1.5	SLAB
35	69.710	1 X 1.5	SLAB
36	69.815	1 X 1.5	SLAB
37	70.165	1 X 1.5	SLAB
38	70.425	1 X 1.5	SLAB
39	70.555	1 X 1.5	SLAB
40	70.930	1 X 1.5	SLAB
41	71.300	1 X 1.5	SLAB
42	71.750	1 X 1.5	SLAB
43	72.045	1 X 3.0	SLAB
44	72.410	1 X 1.5	SLAB
45	72.585	1 X 1.5	SLAB
46	73.145	1 X 1.5	SLAB
47	73.250	1 X 1.5	SLAB
48	74.185	1 X 1.5	SLAB
49	74.415	1 X 1.5	SLAB
50	74.685	1 X 1.5	SLAB
51	75.900	1 X 1.5	SLAB
52	76.185	1 X 1.5	SLAB
53	76.330	1 X 1.5	SLAB
54	76.460	1 X 1.5	SLAB
55	76.995	1 X 1.5	SLAB
56	77.655	1 X 1.5	SLAB
57	77.785	1 X 1.5	SLAB
58	78.175	1 X 1.5	SLAB
59	78.565	1 X 1.5	SLAB
60	79.375	1 X 1.5	SLAB
61	79.705	1 X 1.5	SLAB
62	80.450	1 X 1.5	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
63	80.600	1 X 1.5	SLAB
64	81.570	1 X 1.5	SLAB
65	81.675	1 X 1.5	SLAB
66	81.820	1 X 1.5	SLAB
67	82.075	1 X 1.5	SLAB
68	82.565	1 X 1.5	SLAB
69	83.830	1 X 1.5	SLAB
70	84.685	1 X 1.5	SLAB
71	85.220	1 X 1.5	SLAB
72	86.335	1 X 1.5	SLAB
73	86.515	1 X 1.5	SLAB
74	87.205	1 X 1.5	SLAB
75	87.650	1 X 1.5	SLAB
76	88.445	1 X 1.5	SLAB
77	88.545	1 X 1.5	SLAB
78	89.035	1 X 1.5	SLAB
79	89.520	1 X 1.5	SLAB
80	90.420	1 X 1.5	SLAB
81	91.565	1 X 1.5	SLAB
82	91.995	1 X 1.5	SLAB
83	92.345	1 X 1.5	SLAB
84	92.620	1 X 1.5	SLAB
85	93.420	1 X 1.5	SLAB
86	93.885	1 X 1.5	SLAB
87	94.475	1 X 1.5	SLAB
88	95.390	1 X 1.5	SLAB

(e) Repairs/replacementsofrailing/parapets,flooringandprotectionworksof the existingculvertsshall be undertaken as follows:

[Refer provisionofthe relevant Manual and provide details]

Sl.No.	Location atkm	Typeofrepair required
Nil		

(f) Floorprotectionworksshallbeasspecifiedintherelevant IRC Codesand Specifications.

(iii) Bridges

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

[(i) Theexistingbridgesatthefollowinglocationsshallbere-constructed as newStructures]

[Refer provisionofthe relevant Manual and provide details]

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 bewidened:

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

(b) Additional new bridges

[Specify additional newbridgesif required. And attach GAD]

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

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
Nil			

(c) The railingsof existingbridgesshall bereplacedby crash barriersat the followinglocations:

[Refer provisionofthe relevant Manual and provide details:]

Sl.No.	Location atkm	Remarks
Nil		

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

[Refer to provisionofthe relevant Manual and providedetails]

Sl.No.	Location at km	Remarks
Nil		

(e) Drainagesystem forbridge decks

Aneffectivedrainagesystemforbridgedecks shall beprovidedas specified in provisionofthe relevant Manual

(f) Structures in marine environment

[Refertoprovisionofthe relevant Manual andspecify thenecessarymeasures/

treatments for protecting structuresin marineenvironment. Where applicable]

(v) Rail-roadbridges

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

(b) Road over-bridges

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

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

(c) Road under-bridges

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

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

(v) Grade separatedstructures

[Refer provisionofthe relevant Manual]

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

(vi) Repairs andstrengthening of bridges andstructures

[Refer to provisionofthe relevant Manual and provide details]

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

(a) Bridges

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

(b) ROB / RUB

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

(c) Overpasses/Underpasses and otherstructures

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

(vii) List of Major Bridges andStructures

The following is the list ofthe 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	33
2	5th Kilometre stones=	Nos	8
3	hectometer Stones=	Nos	163
4	Delineators (100 cm long and circular shaped) =	Nos	539
5	900 mm Octagonal	Nos	15
6	600 mm circular	Nos	255
7	900 mm Triangular	Nos	253
8	800 mm x 600 mm rectangular	Nos	380
9	Fluroscent Strips	Rolls	7
10	Object Hazard Marker (one way)	Nos	239

(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 Longpi Kajui (Ch. 73+000 km)	16 m X 1.2 m (Double Pole)
2	At Nameri (Ch. 92+350 km)	16 m X 1.2 m (Double Pole)

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

Chainage		Side	Net Length (m)
From (m)	To (m)		
59.450	60.600	One side	1100.000
77.100	77.800	One side	658.000
54.100	54.500	Both	379.800
62.300	63.300	Both	959.600
67.500	68.300	Both	748.000
69.800	71.500	Both	1619.700

Chainage		Side	Net Length (m)
From (m)	To (m)		
71.500	72.000	Both	451.000
88.800	89.600	Both	786.000
		Total Net Length =	11446.

b) Retaining Wall

Chainage		Side	Net Length (m)
From (m)	To (m)		
76.600	77.100	Valley	479.000
80.500	80.900	Valley	393.000
83.900	85.000	Valley	1051.000
88.000	88.800	Valley	758.000
		Total Net Length =	**2681.000**

c) W-Beam Crash Barrier

Chainage		Side	Net Length (m)
From (m)	To (m)		
54.500	54.645	Valley	145.000
54.645	56.100	Valley	1353.500
57.500	58.500	Valley	939.400
59.200	59.450	Valley	239.900
60.600	62.300	Valley	1609.100
65.500	67.500	Valley	1876.300
68.300	69.800	Valley	1399.000
72.000	74.250	Valley	2152.000
74.800	75.500	Valley	665.000
76.000	76.300	Valley	286.000
78.600	79.600	Valley	944.000
81.600	83.900	Valley	2223.000
89.600	90.000	Valley	400.000
91.300	91.700	Valley	379.000
94.400	94.700	Valley	286.000
95.500	95.700	Valley	200.000
59.450	60.600	Valley	1100.000
77.100	77.800	Valley	658.000

76.600	77.100	Valley	479.000
80.500	80.900	Valley	393.000
83.900	85.000	Valley	1051.000
88.000	88.800	Valley	758.000
		Total net length =	**19536.200**

12. Special Requirement for Hill Roads

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

13. Change of Scope

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

(Schedule-B1)

1. The 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) Road side furniture;

(c) Pedestrian facilities;

(d) Truck Lay byes;

(e) Bus-bays and passenger shelters;

(f) Rest areas; and

(g) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza: -

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

b) Roadside furniture: -

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

C) Pedestrian Facility:-

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

d) Truck Lay bye:-

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

e) Bus Bay & Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Design Requirements	Other Essential Details
1	Bus shelter	58.736(Left side) 60.736 (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	75.236 (Left 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)
3	Bus shelter	80.636 (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)
4	Bus shelter	91.436 (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)

f) Rest Areas

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

g) Others to be specified

Street Lighting:
Total 250 Nos. Street lighting shall be provided in junction and passenger shelters locations.
3 no of toilet has been proposed near the bus shelter.

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: 73-2015), referred to herein as the Manual]

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

Annex – I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

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

2. Deviations from the Specifications and Standards

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

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

<table>
<tr><th>Item</th><th>Manual Clause Reference</th><th colspan="5">Provision as per Manual</th><th colspan="5">Modified Provision</th></tr>
<tr><td rowspan="4">Shoulder</td><td rowspan="4">2.6</td><td colspan="5"><u>Mountainous Terrain</u></td><td colspan="5"><u>Mountainous Terrain</u></td></tr>
<tr><td rowspan="2">Type of Section</td><td rowspan="2"></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><td>Total</td></tr>
<tr><td rowspan="2">Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>1.5</td><td>-</td><td>1.5</td><td rowspan="2">Open Country with Isolated Built-up Area</td><td>Hill Side</td><td>-</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><td>1</td></tr>
<tr><td rowspan="2">Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>0.25 m + 1.5 m (Raised)</td><td>-</td><td>1.75</td><td rowspan="2">Built-up Area and Approaches to grade separated structures/ bridges</td><td>Hill Side</td><td>-</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><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 general. However design speed has been reduced to 20 kmph due to site constraints and to accommodate the proposal within EROW.
(Refer Horizontal Alignment Drawing and Table 1.1 below)</td></tr>
<tr><td>Extra Widening</td><td>2.7</td><td colspan="5">Extra Widening has been proposed as per IRC: SP: 73-2015
Radius | Extra Widening
75-100 m | 0.9 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</td></tr>
</table>

Item	Manual Clause Reference	Provision as per Manual			Modified Provision		
		101-300 m	0.6 m		41-60 m	1.2 m	
					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 40 kmph

Sl. No.	Stretch (from km to km)	Type of Deficiency	Remarks (Design Speed in kmph)
1.	66.9 to 79.105	Built-up	20.000

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

Sl. No.	HIP NO.	Chainage	RADIUS
1	24	58625.78	50
2	59	66979.11	50
3	68	68846.28	50
4	69	69039.27	50
5	71	69439.02	50
6	80	73462.81	50
7	81	73579.09	50
8	88	75125.68	50
9	89	75271.1	50
10	93	76325.71	50
11	94	76420.82	50
12	96	76856.17	50
13	102	78573.92	50
14	105	79187.18	50
15	130	88313.56	50
16	131	88404.86	50

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

Schedule-H

(See Clauses 10.1(iv)and 19.3)

Contract Price Weightages

1.1 The Contract Price for this Agreement is

1.2 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**		
	66.16%	*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.*	**27.04%**
		A2.2	*Sub-Base Course*	**8.65%**
		A2.3	*Non Bituminous Base Course*	**6.03%**
		A2.4	*Bituminous Base Course*	**9.14%**
		A2.5	*Wearing Coat*	**3.99%**
		A2.6	*Hard 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%**

Bill No	Weightage in percentage to the contract price	Description of Items		Percentage weightage
		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)*	**11.32%**
7	**0.24%**	**WIDENING AND REPAIR OF MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A7.1	*Minor Bridges*	**0.00%**
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.*	**0.21%**
		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.*	**0.03%**
		A8.3	***Approaches:*** *On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.*	**0.00%**
		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**		**0.00%**

Bill No	Weightage in percentage to the contract price	Description of Items		Percentage weightage
		UNDERPASSES/ OVERPASSES		
		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%**

Bill No	Weightage in percentage to the contract price	Description of Items				Percentage weightage
		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%**

Bill No	Weightage in percentage to the contract price	Description of Items				Percentage weightage
			(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%**

Bill No	Weightage in percentage to the contract price	Description of Items				Percentage weightage
			(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	**32.34%**	**OTHER WORKS**				**0.00%**
		A17.1	*Toll Plaza*			**0.00%**
		A17.2	*Road side drain*			**3.41%**
		A17.3	*Road signs, marking, Km stones, Safety devices etc.*			**0.00%**
			(a)	*Pavement Marking*		**1.11%**
			(b)	*Crash barrier/W metal crash barrier*		**1.91%**
			(c)	*Traffic Sign*		**0.13%**
			(d)	*Road Boundary stone, km Stone,5th km stone and hectometer stone*		**0.01%**
			(e)	*Traffic blinker LED delineator, stud, reflective payment marker, tree reflector*		**0.01%**
			(f)	*Traffic impact Attenuators at Abutments and Piers traffic island*		**0.00%**

Bill No	Weightage in percentage to the contract price	Description of Items			Percentage weightage
			(g)	*Road furniture (overhead signboard etc.)*	**0.08%**
			(h)	*Others including Toilet Blocks and Street lightining*	**0.22%**
		A17.4	*Project facilities*		**0.00%**
			(a)	*Truck lay-byes*	**0.00%**
			(b)	*Bus bays and Bus Shelter*	**0.10%**
			(c)	*Junctions (Major & Minor)*	**0.02%**
			(d)	*Others including Cable duct & Lighing on Bridges, etc.*	**0.00%**
			(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*	**0.01%**
			(b)	*Seeding and Mulching with Jute net all along the perpetual slide locations*	**0.28%**
			(c)	*Catchwater Drain*	**0.00%**
			(d)	*Retaining Wall*	**8.92%**
			(e)	*Reinforced earth wall*	**0.00%**
			(f)	*Breast wall*	**13.97%**
			(g)	*Soil Nailing*	**0.04%**
			(h)	*Gabion Structure*	**2.13%**
		A17.11	*Utility Shifting*		1.26%

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)	*1.26%*	(i) EHT line	0%
		(ii) EHT crossings	
		(iii) HT/LT line	15.3%
		(iv) HT/LT crossings	
		(v) Water pipeline	84.7%
		(vi) Water pipeline crossings	
		(vii) Sewage lines	0%

		(viii) Sewage lines crossings	

1.3 Procedure of estimating the value of work done

1.3.1 Road works

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

Table1.3.1

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	**27.39%**	
(3) Sub-base Course	**8.76%**	
(4) Non bituminous Base course	**6.11%**	
(5) Bituminous Base course	**9.25%**	
(6) Wearing Coat	**4.04%**	
(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]	
(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
Culverts (length <6m)	11.46%	

Stage of Payment	Percentage weightage	Payment Procedure
		completion of at least One culverts

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

Cost per km = P xweightage for road work xweightage for bituminous workx (1/L)

Where,

P = Contract Price

L = Total length in km

Similarly, the rates perkm for otherstages shallbe workedout accordingly.

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

1.3.2 Minor Bridges and Underpasses/Overpasses.

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

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m&<60m)	[Nil]	Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair works of a minor bridge
A.2- New Minor Bridges (length > 6m & < 60m)		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	0.21%	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.	0.03%	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of

Stage of Payment	Weightage	Payment Procedure
		stage specified as above
(3)Approaches :On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	[Nil]	Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub-clause.
(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]	Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bund sand River training Works in all respects as specified
B.1- Widening and repairs of underpasses/overpasses	[Nil]	Cost of each underpass/overpass shall be determined on pro-rata basis with respect to the total linear length of the underpasses/ overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2- New Underpasses/Overpasses		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	[Nil]	Foundation: Cost of each Underpass/ Overpass shall be determined on pro- rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of foundation of each Underpasses/ Overpasses. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

1.3.3 Major Bridge works, ROB/RUB and Structures.

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

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repairs of Major Bridges		
(1) Foundation	[Nil]	Foundation: Cost of each Major Bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of major bridge.
(3)Super-structure(including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Guide Bunds, River Training works etc.	[Nil]	Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(8)Approaches(including Retaining walls, stone pitching and protection works)	[Nil]	Approaches: Payments shall be made on pro-rata basis on completion of 10% of the scope of each stage.
A.2-NewMajorBridges		
(1)Foundation	[Nil]	Foundation: Cost of each Major Bridge shall be determined on pro-rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Sub-structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not lessthan25% of the scope of sub- structure of major bridge.

Stage of Payment	Weightage	Payment Procedure
(3)Super-structure(including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Guide bunds, River Training works etc.	[Nil]	Guide Bunds, River Training works: Payments shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.
(8)Approaches(including Retaining walls, stone pitching and protection works)	[Nil]	Approaches: Payments shall be made on pro-rata basis on completion of 10% of the scope of each stage.
B.1- Widening and repairs of (a)ROB (b)RUB		
(1) Foundations	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro-rata basis with respect to the total linear length (m)of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of ROB/RUB.
(3) Super-Structure (Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50%ofthe stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat(a)in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including

Stage of Payment	Weightage	Payment Procedure
		drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (Including Retaining walls, Stone Pitching and protection works)	[Nil]	Payments shall be made on pro-rata basis on completion of 20% of the total area.
B.2-NewROB/RUB		
(1) Foundation	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro-rata basis with respect to the total linear length (m)of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB.
(2) Sub-structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of sub- structure of ROB/RUB.
(3) Super-structure (including bearing)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) In case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.1-Wideningandrepairs of Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m)of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure.

Stage of Payment	Weightage	Payment Procedure
		In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of structure.
(3) Super-Structure(Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.2- New Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on pro-rata basis with respect to the total linear length (m)of the structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-Structure	[Nil]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of structure.
(3)Super-Structure(Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders foreach span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wingwalls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7)Approaches (including Retaining walls/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 caseofinnovateMajor Bridge projects like cablesuspension/cable stayed/Extra Dozedandexceptionallylongspanbridges, theschedulemay bemodifiedasper site requirements before biddingwith due approval ofCompetentAuthority.

(2) The Schedule for exclusive tunnel projects may be prepared as per site requirements beforebiddingwith dueapproval of CompetentAuthority.

1.3.4 Other works.

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

Table1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) Toll Plaza	[Nil]	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro-rata basis with respect to the total of all toll plaza.
(2) Roadside drains	3.45%	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 05% (five percent)of the total length.
(3) Road signs, markings, km stones, safety devices etc.	3.50%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus Bays	[Nil]	
b) Truck Lay-byes	[Nil]	
c) Passenger/Bus Shelter	0.11%	
d) Rest Area	0.00%	
e) Junction	0.02%	
(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.

Stage of Payment	Weightage	Payment Procedure
(8) Protection Works		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 05% (five percent) of the total length.
(a) Retaining Wall	9.03%	
(b) Breast Wall	14.15%	
(c) Gabion Wall	2.16%	
(d) Soil Nailing	0.04%	
(9) Site Clearance & Dismantling	[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 05% (five percent) of the total length.
(10) Other Works (turfing & Hydro seeding etc., Mulching)	0.29%	Unit of measurement is square metre.

1.3.5 Utility Shifting

Stage of Payment	Weightage	Payment Procedure
1	2	3
(i) EHT line	0%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of EHT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of poles 20%, (ii) Conductor stringing including laying of cable 30%, (iii) DTR erection if involved)-15% and (iv) Charging of line including dismantling and site clearance-35% (with DTR) and 50% without DTR)
(ii) ETH crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 4 crossings.
(iii) HT/LT line (including transformers if any)	15.3%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of LT/HT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of poles 20%, (ii) Conductor stringing including laying of cable 30%, (iii) DTR erection if involved)-10% and (iv) Charging of line including dismantling and site clearance-40% (with DTR) and 50% without DTR)
(iv) HT/LT crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 10 crossings.
(v) Water pipeline	84.7%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)
(vi) Water pipeline		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a

crossing		minimum of 8 crossings.
(vii)Sewage lines	0%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)
(viii)Sewage line crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for completed activity. (The average weightage of major activities in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)

2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated inClause 14.1.1.

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