Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

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

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

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

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

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

Annex –I

(Schedule-A)

Site

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

1. Site

The Site of the [Two-Lane] Project Highway comprises the section of NH-202 commencing from km km 59/230 to km 117/980 (Design km 53+110 to km 95+700) i.e. Choithar to Marem Khullen section in the state of Manipur.
The land, carriageway and structures comprising the Site are described below.

2. Land

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

SL NO.	EXISTING CHAINAGE (km)		DESIGN CHAINAGE (km)		Existing ROW	Remarks
	From	To	From	To		
1	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 117/980. The type of the existing pavement is flexible.

4. Major Bridges

The Site includes the following Major Bridges: -

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

5. Road over-bridges (ROB)/ Road under-bridges (RUB)
The Site includes the following ROB (road over railway line)/RUB (road under railway line):

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

6. Grade separators

The Site includes the following grade separators:

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

7. Minor bridges

The Site includes the following minor bridges:

S. No.	Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub- structure	Super- structure		
1	**93/765**	**Open Foundation**	**Wall type Abutment**	**RCC solid wall**	**1 x 6.0**	**10.9**

8. Railway level crossings

The Site includes the following railway level crossings:

S. No.	Location(km)	Remarks
Nil		

9. Underpasses (vehicular, non- vehicular)

The Site includes the following underpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No	Existing Chainage	Existing 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

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
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
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

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
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
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

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
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
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

Sl. No	Existing Chainage	Existing Type of Structures	Existing Span Arrangement (m)
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. Bus bays

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

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

12. Truck Lay byes

The details of truck lay byes are as follows:

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

13. Roadside drains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From 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)	

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
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)	
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

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
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
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 km to km	Length (in Km)
1	Lunhar Bypass	Connecting design Ch. from km 71.700 to Km 72.500	3.820 Km

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	53.110	95.700											
	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		13.4	5.6				20 Nos	65 Nos	66 Nos
	TOTAL			**13.4 Km**	**5.6 Km**				**20 Nos**	**65 Nos**	**66 Nos**

c) Transformer details:

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

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

The site includes the following Public Health utilities:-

SL No	Chainage		Length in (Km)				Crossing			
	from	To	Water supply Line		Sewage Line		Water supply Line		Sewage Line	
			With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow
1	53.110	95.700		66.2						

(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 to 35 m	90 % length at appointed date
				Balance 10% length shall be provided within 150 days from the appointed date.

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

Annex - III

(Schedule-A)

Alignment Plans

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

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

(ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per the relevant specifications/IRC Codes/Manual.

Annex – IV

(Schedule-A)

Environment Clearances

Environmental Clearances are not required for the project.

Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. [Rehabilitation and augmentation]

[Rehabilitation and augmentation] shall include [Two-Lanning and Strengthening] of the Project Highway as described in Annex-I of this Schedule-B and in Schedule-C.

3. Specifications and Standards

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

Annex – I

(Schedule-B)

Description of [Two-Lanning]

[Note: Description of the Project Highway shall be given by the Authority in detail together with explanatory drawings (where necessary) to explain the Authority's requirements precisely in order to avoid subsequent changes in the Scope of the Project. The particulars that must be specified in this Schedule-B are listed below as per the requirements of the Manual of Specifications and Standards for [Two Lanning of Highways (IRC: SP: 73-2018)] referred to as the Manual. If any standards specifications or details are not given in the Manual the minimum design/construction requirements shall be specified in this Schedule. In addition to these 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)
1	Langdang	57.65 km to 58.00 km	7	As per attached TCS drawing
2	Suiri	59.70 km – 60.08 km	7	As per attached TCS drawing
3	Nungbi Khullen	78.600 km to 78.700 km	7	As per attached TCS drawing
4	Naghoi	87.85 km to 87. km	7	As per attached TCS drawing

(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 30 kmph .

(iii) Improvement of the existing road geometrics

The stretches where design speed reduces below 20 kmph are summarized below:

Sl. No.	Chainage	Type of Deficiency	Remarks (Design Speed in kmph)
1.	53562	Builtup	20
2.	89714	To avoid alignment from falling deep valley	20

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

(iv) Right of Way

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) In built-up sections. footpaths/fully paved shoulders shall be provided in the following stretches:

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/footpaths	Reference to cross section
Nil			

(b) Earthen shoulders of 1.5 m on Hill side and 2.5 m width towards valley side shall be provided with selected earth wherever applicable as per TCS drawing.

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

(vi) Lateral and vertical clearances at underpasses

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

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

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

(vii) Lateral and vertical clearances at overpasses

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

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

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

Nil

(viii) Service roads

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

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

(ix) Grade separated structures

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

[Refer to requirements specified in the relevant Manual]

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

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

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

(x) Cattle and pedestrian underpass /overpass

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

Sl. No.	Location	Type of crossing
Nil		

(xi) Typical cross-sections of the Project Highway

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

TCS TYPE	DESCRIPTION	Length (m)
Ref. Sch. D	2-lane with 2.5 m earthen shoulders with W-beam crash barrier on valley side and 1.50 m earthen shoulder with 0.6 m lined drain on hill side	4925
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with 0.6m lined drain on both side	1995
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain and hill section on both side	6310
Ref. Sch. D	2-lane with 2.50 m earthen shoulder on valley side and 1.5 m earthen shoulders with 0.6 m lined drain on hill side	9780

TCS TYPE	DESCRIPTION	Length (m)
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with breast wall on hill side and 2.50 m earthen shoulder on valley side	6150
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with breast wall on hill side and 2.50 m earthen shoulder with gabion retaining wall on valley side	170
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with gabion wall on hill side and 2.50 m earthen shoulder on valley side	340
Ref. Sch. D	2-lane with 1.5 m earthen shoulders with breast wall on hill side and 2.50 m earthen shoulder with W-beam crash barrier on valley side	1290
Ref. Sch. D	2-lane with 1.5 m with 0.6 m lined drain on hill side and 2.50 m earthen shoulder with retaining gabion wall & W-beam crash barrier on valley side	4350
Ref. Sch. D	2-lane with 2.5 m earthen with retaining wall & W-beam crash barrier on both side	210
Ref. Sch. D	2-lane with 1.5 m earthen with Breast Wall and 0.60 m lined drain on both side	4450
Ref. Sch. D	2-lane with 1.5 m earthen with Gabion Wall and 0.60 m lined drain on both side	1820
Ref. Sch. D	2-lane with 1.5 m earthen with gabion wall and 0.60 m lined drain and 1.5 mearthen with breast wall and 0.60 m lined drain **(Lunghar Bypass)**	800
	Total length =	**42590**
Lunghar Village	**One Time Rehabilitation of existing lane carriageway for a length of 3.820 km**	

3. Intersections and Grade Separators

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

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

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

(i) At-grade intersections

Major Intersections

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

Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	59.300	Y (L)	Shirui Village
2	59.800	Y (L)	Shirui Village
3	87.920	Y(R)	Chirgai Village

(ii) Grade separated intersection with/without ramps

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

4. Road Embankment and Cut Section

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

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

The existing road shall be raised in the following sections:

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

5. Pavement Design

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

(ii) Type of pavement

Flexible Pavement

(iii) Design requirements

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

(a) Design Period and strategy

Flexible pavement for new pavement or for widening and strengthening of the existing pavement shall be designed for a minimum design period of 20 years. Stage construction shall not be permitted.

(b) Design Traffic

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

(iv) Reconstruction of stretches

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

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

6. Roadside Drainage

Drainage system including surface and subsurface drains for the Project Highway has

been provided in the table given below:

PCC Trapezoidal Drain

Proposed TCS NO	Length (m)	Side
Ref. Sch. D	4831.00	One side
Ref. Sch. D	2972.00	Both side
Ref. Sch. D	12380.00	Both side
Ref. Sch. D	9594.00	One side
Ref. Sch. D	334.00	One side
Ref. Sch. D	4267.00	One side
Ref. Sch. D	3570.00	Both side
Ref. Sch. D	785.00	One side
Total length	**38733.00**	

7. Design of Structures

(i) General

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

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

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

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

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

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

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

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

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

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

(ii) Culverts

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

(b) Reconstruction of existing culverts:

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

Sl No	Chainage	**Span Size**	**Width(m)**	Type	Proposal
1.	53.395	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
2.	53.885	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
3.	54.155	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
4.	54.820	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
5.	54.872	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
6.	55.250	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
7.	55.745	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
8.	55.870	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
9.	56.193	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
10.	57.035	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
11.	58.085	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
12.	58.175	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
13.	58.356	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
14.	59.518	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
15.	59.552	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
16.	59.880	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
17.	60.095	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
18.	60.695	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
19.	60.995	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
20.	61.605	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
21.	62.985	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
22.	63.410	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
23.	65.290	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
24.	65.920	1 X 3.0	1x10.9	SLAB	RECONSTRUCTION
25.	66.440	1 X 3.0	1x10.9	SLAB	RECONSTRUCTION
26.	66.587	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
27.	66.865	1 X 3.0	1x10.9	SLAB	RECONSTRUCTION
28.	67.086	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
29.	68.150	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
30.	68.295	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
31.	68.465	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
32.	68.543	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
33.	68.705	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
34.	68.960	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
35.	69.115	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
36.	69.324	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
37.	69.530	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
38.	70.070	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
39.	70.185	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
40.	70.382	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
41.	71.075	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
42.	73.212	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
43.	73.482	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
44.	73.834	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
45.	73.973	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
46.	74.110	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
47.	74.227	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
48.	74.373	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION

Sl No	Chainage	**Span Size**	**Width(m)**	Type	Proposal
49.	74.485	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
50.	74.962	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
51.	75.107	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
52.	75.822	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
53.	76.210	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
54.	76.522	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
55.	77.013	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
56.	77.565	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
57.	77.635	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
58.	77.852	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
59.	77.955	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
60.	78.860	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
61.	79.365	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
62.	79.585	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
63.	79.740	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
64.	79.880	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
65.	79.995	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
66.	80.400	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
67.	80.626	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
68.	81.254	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
69.	81.338	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
70.	81.666	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
71.	81.790	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
72.	82.244	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
73.	82.337	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
74.	83.436	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
75.	83.538	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
76.	83.760	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
77.	84.100	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
78.	84.305	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
79.	84.470	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
80.	84.760	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
81.	85.053	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
82.	85.570	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
83.	85.664	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
84.	85.767	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
85.	86.284	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
86.	86.730	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
87.	87.490	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
88.	87.800	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
89.	88.800	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
90.	89.070	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
91.	89.655	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
92.	91.958	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
93.	92.572	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
94.	92.618	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
95.	92.747	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
96.	93.970	1 X 3.0	1x10.9	SLAB	RECONSTRUCTION
97.	95.116	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
98.	95.520	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION
99.	95.682	1 X 2.0	1x10.9	SLAB	RECONSTRUCTION

(c) Widening of existing culverts:

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

Sl No	Chainage	Span Size	Width(m)	Type	Proposal
1	54.005	1 X 1.1	1x10.9	SLAB	WIDENING
2	54.580	1 X 2.9	1x10.9	SLAB	WIDENING
3	55.327	1 X 2.9	1x10.9	SLAB	WIDENING
4	56.342	1 X 1.5	1x10.9	SLAB	WIDENING
5	60.013	1 X 1.4	1x10.9	SLAB	WIDENING
6	61.180	1 X 1.0	1x10.9	SLAB	WIDENING
7	61.828	1 X 1.5	1x10.9	SLAB	WIDENING
8	61.950	1 X 1.5	1x10.9	SLAB	WIDENING
9	63.470	1 X 1.5	1x10.9	SLAB	WIDENING
10	63.815	1 X 1.3	1x10.9	SLAB	WIDENING
11	64.288	1 X 1.0	1x10.9	SLAB	WIDENING
12	67.165	1 X 1.1	1x10.9	SLAB	WIDENING
13	67.210	1 X 1.2	1x10.9	SLAB	WIDENING
14	67.800	1 X 1.2	1x10.9	SLAB	WIDENING
15	68.387	1 X 4.3	1x10.9	SLAB	WIDENING
16	70.965	1 X 1.3	1x10.9	SLAB	WIDENING
17	72.732	1 X 1.3	1x10.9	SLAB	WIDENING
18	75.215	1 X 1.2	1x10.9	SLAB	WIDENING
19	75.670	1 X 1.0	1x10.9	SLAB	WIDENING
20	79.062	1 X 1.3	1x10.9	SLAB	WIDENING
21	79.223	1 X 1.3	1x10.9	SLAB	WIDENING
22	84.930	1 X 1.3	1x10.9	SLAB	WIDENING
23	85.332	1 X 1.0	1x10.9	SLAB	WIDENING
24	89.495	1 X 1.0	1x10.9	SLAB	WIDENING
25	94.922	1 X 1.1	1x10.9	SLAB	WIDENING

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

Sl No	Chainage	Span (m)	Width (m)	Type	Proposal
1.	53.250	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
2.	53.670	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
3.	54.235	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
4.	54.446	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
5.	54.708	1 X 1.1	1x10.9	SLAB	NEW CONSTRUCTION
6.	55.035	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
7.	55.525	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
8.	56.615	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
9.	56.655	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
10.	56.860	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION

Sl No	Chainage	Span (m)	Width (m)	Type	Proposal
11.	57.280	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
12.	57.530	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
13.	57.760	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
14.	57.970	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
15.	58.485	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
16.	58.690	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
17.	58.840	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
18.	58.975	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
19.	59.270	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
20.	60.383	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
21.	61.380	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
22.	62.093	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
23.	62.175	1 X 3.0	1x10.9	SLAB	NEW CONSTRUCTION
24.	62.300	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
25.	62.523	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
26.	62.780	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
27.	63.258	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
28.	63.900	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
29.	64.100	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
30.	65.135	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
31.	65.590	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
32.	65.688	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
33.	66.220	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
34.	67.405	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
35.	67.585	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
36.	68.045	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
37.	69.205	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
38.	69.588	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
39.	69.815	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
40.	69.920	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
41.	70.486	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
42.	70.527	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
43.	70.552	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
44.	70.838	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
45.	71.170	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
46.	71.270	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
47.	71.395	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
48.	71.460	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
49.	71.624	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
50.	72.480	1 X 3.0	1x10.9	SLAB	
51.	72.830	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
52.	73.010	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
53.	73.547	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
54.	73.660	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION

Sl No	Chainage	Span (m)	Width (m)	Type	Proposal
55.	74.615	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
56.	74.825	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
57.	75.320	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
58.	75.435	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
59.	75.728	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
60.	75.980	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
61.	76.320	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
62.	76.618	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
63.	76.760	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
64.	76.875	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
65.	77.140	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
66.	77.330	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
67.	77.425	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
68.	78.085	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
69.	78.190	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
70.	78.415	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
71.	78.615	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
72.	78.970	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
73.	79.806	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
74.	80.130	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
75.	80.880	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
76.	81.030	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
77.	82.000	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
78.	82.084	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
79.	82.530	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
80.	83.100	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
81.	83.320	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
82.	83.940	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
83.	84.585	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
84.	85.525	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
85.	85.950	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
86.	86.412	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
87.	86.877	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
88.	87.080	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
89.	87.140	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
90.	87.235	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
91.	87.270	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
92.	87.415	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
93.	87.690	1 X 1.1	1x10.9	SLAB	NEW CONSTRUCTION
94.	87.955	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
95.	88.400	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
96.	88.585	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
97.	89.200	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
98.	89.290	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION

Sl No	Chainage	Span (m)	Width (m)	Type	Proposal
99.	89.360	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
100.	89.735	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
101.	89.770	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
102.	90.200	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
103.	90.420	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
104.	89.810	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
105.	91.305	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
106.	91.605	1 X 3.0	1x10.9	SLAB	NEW CONSTRUCTION
107.	92.215	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
108.	92.455	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
109.	92.880	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
110.	93.220	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
111.	93.500	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
112.	93.870	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
113.	94.310	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
114.	94.780	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION
115.	95.375	1 X 1.5	1x10.9	SLAB	NEW CONSTRUCTION

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

Sl. No.	**Location at km**	**Type of repair required**
Nil		

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

(iii) Bridges

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

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

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

(ii) The following narrow bridges shall be widened:

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

(b) Additional new bridges

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

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

Details of Minor bridges proposed:

Sl No	Chainage	Span (m)	Width (m)	Type	Proposal
1	63.685	1 X 6.0	1x10.9	RCC SLAB - MINOR	New Construction
2	64.780	1 X 6.0	1x10.9	RCC SLAB - MINOR	New Construction
3	94.650	1 X 6.0	1x10.9	RCC SLAB - MINOR	RECONSTRUCTION

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

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

Sl. No.	Location at km	Remarks
Nil		

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

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

Sl. No.	Location at km	Remarks
Nil		

(e) Drainage system for bridge decks

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

(f) Structures in marine environment

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

(v) Rail-road bridges

(a) Design construction and detailing of ROB/RUB shall be as specified in provision of the relevant Manual [Refer to provision of the relevant Manual and specify modification, if any]

(b) Road over-bridges

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

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

(c) Road under-bridges

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

Sl. No.	Location of Level crossing (Chainage km)	Number and length of span (m)
Nil		

(v) Grade separated structures

[Refer provision of the relevant Manual]

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

(vi) Repairs and strengthening of bridges and structures

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

(a) Bridges

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

(b) ROB / RUB

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

(c) Overpasses/Underpasses and other structures

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

(vii) List of Major Bridges and Structures

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

Sl. No.	Location (Km)
Nil	

8. Traffic Control Devices and Road Safety Works

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

Sl. No	Traffic Signage, Road Marking and other appurtenances	unit	Quantity
1	Ordinary Kilometre stones=	Nos	33
2	5th Kilometre stones=	Nos	8
3	hectometer Stones=	Nos	168
4	Delineators (100 cm long and circular shaped) =	Nos	539
5	900 mm Octagonal	Nos	15
6	600 mm circular	Nos	256
7	900 mm Triangular	Nos	254

Sl. No	Traffic Signage, Road Marking and other appurtenances	unit	Quantity
8	800 mm x 600 mm rectangular	Nos	381
9	Fluorescent Strips	Rolls	7
10	Object Hazard Marker (one way)	Nos	238

(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
NIL		

10. Compulsory Afforestation

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

11. Hazardous Locations

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

a) Breast Wall 1.5 m height

Sl No	From (m)	To (m)	Length (m)	Sides
1.	53260	53360	100	Left
2.	53850	53930	80	Right
3.	54910	54970	60	Right
4.	55390	55490	100	Right
5.	55450	55470	20	Left
6.	55540	55570	30	Right
7.	55880	55970	90	Right
8.	56740	56770	30	Left
9.	58730	58860	130	Left
10.	61070	61160	90	Left
11.	63720	63770	100	Both
12.	63950	64240	290	Right
13.	65090	65130	40	Right
14.	68620	68690	70	Left
15.	69610	69640	60	Both
16.	71090	71220	130	Right
17.	71450	71670	220	Right
18.	74680	75070	390	Right
19.	76560	76660	100	Left
20.	77350	77440	90	Right
21.	79080	79200	120	Left
22.	80320	80360	40	Left
23.	86850	86940	90	Left
24.	86850	87030	180	Right

Sl No	From (m)	To (m)	Length (m)	Sides
25.	87400	87470	70	Right
26.	88340	88450	220	Both
27.	89230	89330	100	Right
28.	90750	90930	360	Both
29.	92910	92960	50	Right
30.	93170	93240	70	Right
31.	54630	54680	100	Both
32.	54740	54780	80	Both
33.	58210	58320	220	Both
34.	58330	58390	60	Left
35.	59350	59450	100	Right
36.	68040	68360	320	Right
37.	68570	68620	100	Both
38.	63510	63650	140	Right
39.	65820	65850	60	Both
40.	69140	69290	150	Right
41.	69380	69510	130	Right
42.	74150	74210	60	Right
43.	75870	75940	70	Left
44.	79250	79330	160	Both
45.	79760	79850	90	Left
46.	81450	81620	170	Left
47.	83880	84060	180	Left
48.	84770	84920	150	Right
49.	88570	88780	210	Right
50.	88590	88640	50	Left
51.	89950	90020	140	Both
52.	91720	91820	100	Left
53.	92660	92770	110	Right
54.	94100	94210	110	Left
55.	88870	89040	170	Right
56.	89560	89620	60	Right
Total Length			6810	
Deduction for CD length			129.39	
Net Length			**6680.61**	

b) Breast Wall 2 m height

Sl No	From (m)	To (m)	Length (m)	Sides
1.	54040	54140	200	Both
2.	54180	54230	100	Both
3.	54230	54550	320	Right
4.	54490	54520	30	Left
5.	55050	55210	320	Both
6.	55570	55680	220	Both
7.	55680	55730	50	Right
8.	56050	56150	200	Both

Sl No	From (m)	To (m)	Length (m)	Sides
9.	56400	56620	440	Both
10.	56710	56810	100	Right
11.	56890	56980	90	Right
12.	58400	58730	660	Both
13.	58860	58900	40	Left
14.	58900	59030	260	Both
15.	59190	59240	50	Right
16.	60570	60640	70	Left
17.	61860	61920	60	Right
18.	62020	62140	120	Right
19.	62410	62500	90	Left
20.	63040	63290	250	Right
21.	63290	63410	120	Left
22.	64550	64720	170	Right
23.	64840	64900	120	Both
24.	64900	65110	210	Left
25.	65170	65250	80	Right
26.	65350	65450	100	Right
27.	65580	65640	60	Right
28.	65430	65620	190	Left
29.	65970	66150	180	Right
30.	65980	66140	160	Left
31.	66270	66400	260	Both
32.	66420	66550	130	Right
33.	66930	67050	240	Both
34.	68720	68830	110	Right
35.	68940	69090	150	Right
36.	69770	69870	100	Right
37.	69960	70040	80	Right
38.	70550	70680	130	Right
39.	76030	76170	280	Both
40.	76250	76420	170	Left
41.	77060	77180	120	Left
42.	77660	77810	300	Both
43.	77980	78070	90	Left
44.	78740	78830	90	Left
45.	80000	80130	130	Left
46.	81370	81450	80	Left
47.	81420	81650	230	Right
48.	81890	81950	120	Both
49.	85870	86060	190	Right
50.	86060	86240	360	Both
51.	86340	86470	130	Left
52.	86330	86530	200	Right
53.	88460	88570	110	Right

Sl No	From (m)	To (m)	Length (m)	Sides
54.	88640	88740	100	Left
55.	88740	88780	40	Left
56.	89860	89950	90	Right
57.	91380	91520	140	Right
58.	91730	91820	90	Right
59.	92950	93180	230	Left
60.	93350	93480	130	Right
61.	93480	93650	340	Both
62.	94030	94210	180	Right
63.	94210	94570	360	Both
64.	94570	94610	80	Both
65.	95170	95260	90	Right
66.	95410	95490	160	Both
67.	92240	92430	380	Both
Total Length			11270	
Deduction for CD length			214.13	
Net Length			**11055.87**	

c) Gabion Retaining Structure 2 m height

Sl No	From (m)	To (m)	Length (m)	Sides
1.	53390	53410	20	Left
2.	53630	53680	50	Right
3.	53720	53750	30	Left
4.	53810	53840	30	Left
5.	61180	61200	20	Right
6.	62340	62360	20	Left
7.	63820	63840	20	Left
8.	66200	66220	20	Left
9.	66570	66590	20	Left
10.	67090	67120	30	Left
11.	67400	67440	40	Left
12.	67860	67880	20	Left
13.	68710	68730	20	Left
14.	69530	69560	30	Left
15.	75470	75490	20	Right
16.	76900	76930	30	Right
17.	77840	77860	20	Right
18.	78320	78340	20	Right
19.	78540	78560	20	Right
20.	78830	78850	20	Right
21.	79570	79590	20	Right
22.	82580	82610	60	Both
23.	82730	82750	20	Right
24.	82780	82810	30	Left
25.	82880	82900	20	Right
26.	83520	83540	20	Right

27.	84300	84320	20	Right
28.	84340	84360	20	Right
29.	77200	77220	20	Right
30.	78200	78230	30	Right
31.	78980	79010	30	Right
32.	79350	79370	20	Right
33.	79420	79440	20	Right
34.	83070	83180	110	Right
35.	83770	83800	30	Right
36.	84190	84220	30	Right
37.	84930	84960	30	Left
38.	85650	85680	30	Left
39.	87240	87290	50	Left
Total Length			**1110.00**	
Deduction for CD length			21.09	
Net Length			**1088.91**	

d) Gabion Retaining Structure (Valley Side) 3 m height

Sl No	From (m)	To (m)	Length (m)	Sides
1.	53130	53140	20	Both
2.	53380	53410	30	Right
3.	53530	53580	50	Right
4.	53680	53750	70	Right
5.	55760	55800	40	Left
6.	59100	59160	60	Right
7.	60080	60110	30	Right
8.	60500	60530	30	Right
9.	61370	61410	40	Right
10.	63480	63500	20	Left
11.	63670	63690	20	Left
12.	64280	64320	40	Left
13.	65120	65160	40	Left
14.	65280	65300	20	Left
15.	66860	66880	20	Left
16.	68140	68160	20	Left
17.	68850	68880	30	Left
18.	70180	70200	20	Left
19.	72720	72750	30	Left
20.	73200	73230	30	Left
21.	73780	73870	90	Left
22.	73960	73990	30	Left
23.	74120	74140	20	Left
24.	76520	76540	20	Right
25.	80400	80420	20	Right
26.	83430	83450	20	Right
27.	84090	84110	20	Right

28.	92760	92780	20	Left
29.	93280	93300	20	Left
30.	54800	54830	30	Left
31.	54870	54890	20	Left
32.	55010	55030	20	Left
33.	55250	55280	30	Left
34.	80620	80690	70	Right
35.	83250	83350	100	Right
36.	83630	83660	30	Right
37.	85420	85450	30	Left
38.	88810	88850	40	Left
39.	89050	89110	60	Left
40.	89780	89820	40	Left
41.	91280	91320	40	Left
Total Length			1430.00	
Deduction for CD length			27.17	
Net Length			**1402.83**	

e) Gabion Retaining Structure (Valley Side) 4 m height

Sl No	**From (m)**	**To (m)**	**Length (m)**	**Sides**
1.	53100	53130	30	Right
2.	53140	53170	30	Right
3.	53580	53630	50	Right
4.	53770	53780	10	Left
5.	56340	56400	60	Left
6.	56650	56680	30	Left
7.	60320	60350	30	Right
8.	60420	60450	30	Right
9.	71070	71090	20	Left
10.	73560	73590	30	Left
11.	79870	79900	30	Right
12.	91580	91620	40	Left
13.	91910	91960	50	Left
14.	92180	92200	20	Left
15.	92570	92610	40	Left
16.	93940	93980	40	Left
17.	94640	94680	40	Left
18.	94780	94820	40	Left
19.	94920	94950	30	Left
20.	95090	95120	30	Left
21.	95530	95570	40	Left
22.	95640	95700	60	Left
23.	61960	61980	20	Left
24.	69330	69360	30	Left
25.	72480	72510	30	Left
Total Length			860.00	
Deduction for CD length			16.34	

Net Length	**843.66**	

f) Gabion Retaining Structure (Valley Side) 5 m height

Sl No	From (m)	To (m)	Length (m)	Sides
1.	53100	53130	30	Left
2.	53170	53250	80	Right
3.	53350	53370	20	Right
4.	53410	53480	70	Right
5.	54150	54170	20	Left
6.	54260	54460	200	Left
7.	54570	54600	30	Left
8.	54700	54710	10	Right
9.	56860	56880	20	Left
10.	60670	60700	30	Right
11.	61800	61830	30	Left
12.	72870	72890	20	Left
13.	73470	73490	20	Left
14.	75310	75350	40	Right
15.	76200	76240	40	Right
16.	86730	86770	40	Left
17.	87080	87110	60	Both
18.	88200	88270	70	Right
Total Length			830.00	
Deduction for CD length			15.77	
Net Length			**814.23**	

g) Gabion Wall (Hill Side)

Sl No	From (m)	To (m)	Length (m)	Sides
1.	56230	56320	180	Both
2.	59240	59350	110	Right
3.	62220	62330	110	Right
4.	62370	62530	160	Right
5.	63290	63410	120	Right
6.	64900	65090	190	Right
7.	65450	65580	130	Right
8.	66630	66810	360	Both
9.	68620	68690	70	Right
10.	69640	69770	260	Both
11.	71670	72050	760	Both
12.	72050	72360	620	Both
13.	90020	90750	1460	Both
14.	92960	93170	210	Both
15.	93350	93480	130	Right
Total Length			4870	
Deduction for CD length			92.53.45	
Net Length			**4777.47**	

h) W-Beam Crash Barrier

As per TCS	Length(m)
Typical Section 1	4831.00
Typical Section 3B	167.00
Typical Section 5	4267.00
Typical Section 6	412.00
Typical Section 4	1265.00
Total length	**10942.00**

12. Special Requirement for Hill Roads

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

Sl No	From	To	Side	Length	Avg Height	Area (Sq mt)
1	64900	65090	Right	190	5	950
2	69640	69770	Both	260	5	1300
3	71670	71700	Both	60	5	300
4	90020	90750	Both	1460	5	7300
					Total	**9850**

Bamboo Plantation

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

Sl No	From	To	Area	Remark
1	53.110	95.700	**76500 Sq Mt**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Hydro seeding:

Details of Hydro seeding has been described below:

Sl No	From	To	Area	Remark
1	53.110	95.700	**11500 Sq.m**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Soil Nailing:

Sl No	From	To	Area	Remark
1	53.110	95.700	**8800 Sq Mt**	Locations shall be finalized as per site condition and prior approval from Authority Engineer.

Stair case: Staircase has been provided at ch 60/100 Km for the people lives on top of hillside for accessibility point of view from top area of hill side to project road. The stair case will be made using concrete after excavation with both sides provision of railing.

13. Change of Scope

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

Annexure-I

Schedule-B1

(Refer Sheet-II)

Utility Shifting.

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

Notes:

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

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

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

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

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

Schedule - C

(See Clause 2.1)

Project Facilities

1. Project Facilities

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

(a) Toll plaza[s]

(b) Roadside furniture;

(c) Pedestrian facilities;

(d) Truck Lay byes;

(e) Bus-bays and passenger shelters;

(f) Rest areas; and

(g) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza: -

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

b) Roadside furniture: -

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

C) Pedestrian Facility:-

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

d) Truck Lay bye:-

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

e) Bus Bay & Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Location
1	Bus shelter	57.820	(Left side)
2	Bus shelter	60.810	(Right side)
3	Bus shelter	76.800	(Left side)
4	Bus shelter	82.400	(Right side)
5	Bus shelter	88.000	(Right side)

f) Rest Areas

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

g) Others to be specified

Street Lighting:
Total 300 Nos. Street lighting shall be provided in junction and passenger shelters locations. 5 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: 73-2018) and Hill Road Manual (IRC-SP-48-1998) referred to herein as the Manual.

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

Annex – I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for Two-Lanning of Highways (IRC:SP:73-2018) and Hill Road Manual (IRC-SP-48-1998), 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="6">Shoulder</td><td rowspan="6">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>
</table>

<table>
<tr><th>Item</th><th>Manual Clause Reference</th><th>Provision as per Manual</th><th>Modified Provision</th></tr>
<tr><td>Extra Widening</td><td>2.7</td><td>Extra Widening has been proposed as per IRC: SP: 73-2018
<table>
<tr><th>Radius</th><th>Extra Widening</th></tr>
<tr><td>75-100 m</td><td>0.9 m</td></tr>
<tr><td>101-300 m</td><td>0.6 m</td></tr>
</table></td><td>Extra Widening has been proposed as per IRC: SP: 48-1998 (Table 6.9) of Hill Road Manual.
<table>
<tr><th>Radius</th><th>Extra Widening</th></tr>
<tr><td>21-40 m</td><td>1.5 m</td></tr>
<tr><td>41-60 m</td><td>1.2 m</td></tr>
<tr><td>61-100 m</td><td>0.9 m</td></tr>
<tr><td>75-100 m</td><td>0.9 m</td></tr>
<tr><td>101-300 m</td><td>0.6 m</td></tr>
<tr><td>Above 300 m</td><td>NIL</td></tr>
</table></td></tr>
<tr><td>Radii of Horizontal Curve</td><td>2.9.4</td><td><u>Mountainous Terrain</u>:
Desirable Minimum Radius: 150 m
Absolute Minimum Radius: 75 m</td><td>Radius below 75 m has been provided in the location listed in table 1.</td></tr>
</table>

Table 1.1: Locations where Design Speed is less than 40 kmph

Sl. No.	Chainage	Type of Deficiency	Remarks (Design Speed in kmph)
1.	53562	Builtup	20
2.	89714	To avoid alignment from falling deep valley	20

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

Sl. No.	Chainage	RADIUS
1	53388.181	50.000
2	53438.238	60.000
3	53496.623	50.000
4	53562.439	40.000
5	58684.479	50.000
6	59252.765	50.000
7	64701.336	60.000
8	67072.698	50.000
9	68948.132	50.000
10	69141.119	50.000
11	69540.867	50.000
12	70525.567	30.000
13	70936.762	50.000
14	71381.783	50.000
15	71630.642	30.000
16	73893.439	50.000
17	74009.715	50.000
18	75556.308	50.000
19	75701.728	50.000
20	76756.34	50.000
21	76851.451	50.000
22	77286.799	50.000

Sl. No.	Chainage	RADIUS
23	79004.553	50.000
24	79617.809	50.000
25	82156.997	50.000
26	82244.422	50.000
27	82331.089	50.000
28	82447.136	50.000
29	82637.992	50.000
30	82837.886	50.000
31	82970.618	50.000
32	89066.41	50.000
33	89157.705	50.000
34	89714.149	30.000

Schedule - H

(See Clauses 10.1 (iv) and 19.3)

Contract Price Weightages

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

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

Bill No	Weightage in percentage to the contract price	Description of Items		Percentage weightage
1		**WIDENING AND STRENGTHENING OF EXISTING ROAD**		
	69.86%	*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 and shoulder including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**42.07%**
		A2.2	*Sub-Base Course*	**9.27%**
		A2.3	*Non Bituminous Base Course*	**11.89%**
		A2.4	*Bituminous Base Course*	**12.63%**
		A2.5	*Wearing Course*	**4.75%**
3		**RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(RIGID PAVEMENT)**		**0.00%**
		A3.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A3.2	*Sub-Base Course*	**0.00%**
		A3.3	*Dry Lean Concrete(DLC) Course*	**0.00%**
		A3.4	*Pavemennt Quality Control(PQC) Course*	**0.00%**
4		**RECONSTRUCTION/NEW SERVICE ROAD (FLEXIBLE PAVEMENT)**		**0.00%**
		A4.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A4.2	*Sub-Base Course*	**0.00%**

		A4.3	*Non Bituminous Base Course*	**0.00%**
		A4.4	*Bituminous Base Course*	**0.00%**
		A4.5	*Wearing Coat*	**0.00%**
5		**RECONSTRUCTION/NEW SERVICE ROAD (RIGID PAVEMENT)**		**0.00%**
		A5.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A5.2	*Sub-Base Course*	**0.00%**
		A5.3	*Dry Lean Concrete(DLC) Course*	**0.00%**
		A5.4	*Pavemennt Quality Control(PQC) Course*	**0.00%**
6		**RECONSTRUCTION AND NEW CULVERTS ON EXISTING ROAD, REALIGNMENTS, BYPASSES**		**0.00%**
		A6.1	*Culverts and associated Protection Works (Length< 6m)*	**19.39%**
7	**1.48%**	**WIDENING AND REPAIR OF MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A7.1	*Minor Bridges*	
8		**NEW MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A8.1	***Foundation + Sub Structures:*** *On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.*	**87.70%**
		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.*	**9.44%**
		A8.3	***Approaches:*** *On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.*	**2.86%**
		A8.4	***Guide Bunds and River Training Works:*** *On completion of Guide bunds and river training works complete in all respects.*	**0.00%**
9		**WIDENING AND REPAIRS OF UNDERPASSES/ OVERPASSES**		**0.00%**
		A9.1	*Underpasses/ Overpasses*	**0.00%**
10		**NEW UNDERPASSES/ OVERPASSES**		**0.00%**
		A10.1	***Foundation + Sub Structures:*** *On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.*	**0.00%**
		A10.2	***Super-structure:*** *On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of overpass- wearing coat including expansion joint complete in all respects as specified and (b) in case of underpass- Rigid pavement including drainage facility complete in all respects as specified.*	**0.00%**

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

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

			(iii)	*Super-structure(including bearings)*	-	**0.00%**
			(iv)	*Wearing Coat including expansion joint.*	-	**0.00%**
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		**0.00%**
			(vi)	*Wing walls/ Return walls*		**0.00%**
			(vii)	*Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)*	-	**0.00%**
17	**27.38%**	**OTHER WORKS**				**0.00%**
		A17.1	*Rehabilitation on existing road*			**1.31%**
		A17.2	*Road Side drain*			**7.69%**
		A17.3	*Road signs, marking, Km stones, Safety devices etc.*			**0.00%**
			(a)	*Pavement Marking*		**1.68%**
			(b)	*Crash barrier/W metal crash barrier*		**5.05%**
			(c)	*Traffic Sign*		**0.53%**
			(d)	*Road km Stone,5th km stone and hectometer stone*		**0.04%**
			(e)	*Traffic blinker LED delineator, stud, reflective payment marker, tree reflector*		**0.19%**
			(f)	*Traffic impact Attenuators at Abutments and Piers traffic island*		**0.00%**
			(g)	*Road furniture*		**0.00%**
			(h)	*Others including Toilet Blocks and Street lightining*		**0.80%**
		A17.4	*Project facilities*			**0.00%**
			(a)	*Truck lay-byes*		**0.00%**
			(b)	*Bus Shelter*		**0.47%**
			(c)	*Junctions (Major & Minor)*		**0.04%**
			(d)	*Stair case used for public facilities (HILL SIDES).*		**0.02%**
			(e)	*Rest areas (viewpoint/recreational areas)*		**0.00%**
		A17.5	*Road Side Plantation, Median plantation & Turfing of the embankment slope*			**0.00%**
		A17.6	*Repair of protection works other than approaches to the bridges, elevated sections/ fly-overs/ grade separator and ROBs/ RUBs.*			**0.00%**
		A17.7	*Traffic diversion, Safety and traffic management during construction*			**0.00%**
		A17.8	*Slope Protection Works as special requirement for hill road*			**0.00%**
			(a)	*Hydro Seeding of Cut Slopes in Soil*		**0.05%**
			(b)	*Seeding and Mulching with Jute net all along the perpetual slide locations*		**0.37%**
			(c)	*Catchwater Drain*		**0.00%**
			(d)	*RCC Retaining Wall*		**0.00%**
			(e)	*Bamboo Plantation for slope protection works*		**0.39%**
			(f)	*Breast wall*		**44.17%**
			(g)	*Soil Nailing*		**4.23%**

			(h)	*Gabion Wall*	**32.97%**
	1.28%	**A18**		Utility Shifting (excluding taxes & supervision)	**100.00%**

Sheet-III

1.2.1 Details of utility shifting

Item	Weightage in percentage to the Utility Shifting Price	Stage for Payment	Percentage weightage
Electrical Utilities and public Health Utilities (Water pipe lines and sewage lines)	*1.28%*	(i) EHT line	0%
		(ii) EHT crossings	
		(iii) HT/LT line	15.30%
		(iv) HT/LT crossings	
		(v) Water pipeline	84.70%
		(vi) Water pipeline crossings	
		(vii) Sewage lines	0%
		(viii) Sewage lines crossings	

Procedure of estimating the value of work done

Road works

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

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
A- Widening & Strengthening of road		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10(ten) percent of the total length.
(1)Earthwork up to top of the sub-grade	[Nil]	
(3) Sub-base Course	[Nil]	
(4) Non bituminous Base course	[Nil]	
(5) Bituminous Base course	[Nil]	
(6) Wearing Coat	[Nil]	
(7) Widening and repair of culverts	[Nil]	Cost of ten completed culverts shall be determined on pro rata basis with respect to the total number of culverts.
B.1- Reconstruction/New2-Lane Realignment/Bypass (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on prorata basis on completion of a stage in full length or 5 (five) km length, whichever is less.
(1) Earthwork up to top of the sub-grade and shoulder	**42.07%**	
(2) Sub-base Course	**9.27%**	
(3) Non bituminous Base course	**11.89%**	
(4) Bituminous Base course	**12.63%**	
(5) Wearing Course	**4.75%**	
(6) Shoulder		
(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
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	

Stage of Payment	Percentage weightage	Payment Procedure
(3) Dry Lean Concrete (DLC) Course	[Nil]	full length or 5 (five) km length, whichever is less.
(4) Pavement Quality Control (PQC) Course	[Nil]	
C.1- Reconstruction/New Service Road/ Slip Road (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Basecourse	[Nil]	
(5) Wearing Coat	[Nil]	
C.2- Reconstruction/New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC)Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
D- Reconstruction &New Culverts on existing road, realignments, bypasses		Cost of each culverts shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of at least Five culverts
Culverts (length <6m)	19.39%	

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

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

Where,

P = Contract Price

L = Total length in km

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

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

Minor Bridges and Underpasses/Overpasses.

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

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m&<60m)		Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length of the minor

Stage of Payment	Weightage	Payment Procedure
		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.	87.70%	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.	9.44%	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 40% of the stage payment shall be due and payable on casting of girders for each span and balance 60% of the stage payment shall be made on completion of stage specified as above.
(3)Approaches :On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	2.86%	Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub-clause.
(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]	Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bund sand River training Works in all respects as specified
B.1- Widening and repairs of underpasses/overpasses	[Nil]	Cost of each underpass/overpass shall be determined on pro-rata basis with respect to the total linear length of the underpasses/ overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2- New Underpasses/Overpasses		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	[Nil]	Foundation: Cost of each Underpass/ Overpass shall be determined on pro- rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of foundation of each Underpasses/ Overpasses. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Super-structure: On completion of the super-structure in all respects including wearing coat,	[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

Stage of Payment	Weightage	Payment Procedure
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.		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

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.

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

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

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

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

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

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

Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) Rehabilitation on existing road	1.31%	Payment shall be made on pro-rata basis for completed facilities..

Stage of Payment	Weightage	Payment Procedure
(2) Roadside drains	7.69%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(3) Road signs, markings, km stones, safety devices etc.		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
a)Pavement Marking	1.68%	
b)Traffic Signs	0.53%	
c)Road km Stone,5th km stone and hectometer stone	0.04%	
d) Traffic blinker LED delineator, stud, reflective payment marker, tree reflector	0.19%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus shelter	0.47%	
b) Stair case used for public facilities	0.02%	
c) Road lighting and Toilets	0.80%	
d) Rest Area	0.00%	
e) Junction	0.04%	
(5) Road side Plantation including Horticulture in Wayside Amenities	[Nil]	Unit of measurement is linear length
(6) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[Nil]	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (ten percent)of the total length.
(7) Safety and traffic management during construction	[Nil]	Payment shall be made on prorate basis every six months.
(8) Protection Works		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 05% (five percent) of the total length.
(a) RCC Retaining Wall	0.00%	
(b) Breast Wall	44.17%	
(c) Gabion Wall	32.97%	
(c) W metal beam crash barrier	5.05%	
(9) Soil Nailing	4.23%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 10% (Ten percent) of the total length.
(10) Seeding & Mulching,	0.37 %	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 25% (Twenty five percent) of the total length.
(11) Hydroseeding)	0.05%	
(12) Bamboo plantation	0.39%	

Utility Shifting

Stage of Payment	Weightage	Payment Procedure
1	2	3
Percentage for Utility shifting		

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

2. Procedure for payment for Maintenance

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

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