Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 TheSite

(i) Siteofthe[Two-Lane/Intermediate Lane]ProjectHighwayshallincludetheland,buildings,structures and road works as described in Annex-I of thisSchedule-A.

(ii) Thedatesof handing over the Right ofWay to theContractorare specified in Annex-IIof thisSchedule-A.

(iii) AninventoryoftheSiteincludingtheland,buildings,structures,roadworks,trees andanyotherimmovablepropertyon,orattachedto, theSiteshallbeprepared jointlybytheAuthorityRepresentativeandtheContractor,andsuchinventoryshall form partof the memorandum referredto in Clause8.2 (i) of this Agreement.

(iv) ThealignmentplansoftheProjectHighwayarespecifiedinAnnex-III.Inthecaseof sectionswhere nomodificationintheexisting alignmentofthe ProjectHighwayis contemplated,thealignment planhasnotbeenprovided.Alignmentplanshaveonly beengivenforsectionswheretheexistingalignment isproposedtobeupgraded.The proposedprofileoftheProjectHighwaysshallbefollowedby thecontractorwith minimumFRL asindicatedinthealignmentplan.TheContractor,however, improve/upgradethe RoadProfileas indicatedinAnnex-III based onsite/design requirement.

(v) The status of the environment clearances obtainedor awaitedis givenin Annex-IV.

Annex –I

(Schedule-A)

Site

[Note: Throughsuitabledrawingsanddescriptioninwords,theland,buildings,structures, androadworkscomprisingtheSiteshallbespecifiedbrieflybutprecisely inthis Annex-I.Allthechainages/locationreferredtoinAnnex-I toSchedule-Ashallbe existingchainages.]

1. Site

The Site of the [Two-Lane/Intermediate Lane] Project Highway comprises the section of NH-53commencing from km 103+557 to km 134+821i.e.,Khongsang Village to kambironVillage in the state of Manipur.

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

2. Land

TheSiteoftheProjectHighwaycomprisestheland(totaloflandalreadyin possession and land to bepossessed) as described below:

SL No.	Chainage (Km)		Existing Right of Way (m)	Proposed Right of Way (m)	Remarks
	From	To			
1	103.557	134.821	7.450	24.00	

3. Carriageway

ThepresentcarriagewayoftheProjectHighwayisTwo-Lane/Intermediate Lanefrom km 103+557 to km 134+821. Thetypeofthe existingpavement is flexible.

4. MajorBridges

The Site includes the followingMajor Bridges: -

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

5. Roadover-bridges(ROB)/Roadunder-bridges(RUB)

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

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

6. Gradeseparators

The Site includes the followinggrade separators:

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

7. Minorbridges

The Siteincludes the following minor bridges:

Sl. No.	Survey Chainage (Km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub-structure	Super- structure		
1	113.559	Open	Wall	RCC Slab	1 x 6 m	9.11
2	132.709	Open	Wall	RCC T-Beam Girder	1 x 13 m	9.43
3	134.038	Open	Wall	Slab Bridge	1X 14.5	10

8. Railwaylevelcrossings

The Site includes the followingrailway levelcrossings:

S. No.	Location(km)	Remarks
Nil		

9. Underpasses(vehicular,non-vehicular)

The Site includes the followingunderpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
1	103.719	R.C.C SLAB	1 X 5.40m	10.0
2	103.942	R.C.C SLAB	1 X 5.40m	12.5
3	104.191	R.C.C SLAB	1 X 1.50m	12.4
4	104.235	HP Culvert	1 X 0.30 Dia	18.6
5	104.352	HP Culvert	1 X 1.20 Dia	16.6
6	104.475	R.C.C SLAB	1 X 3.60m	11.3
7	104.592	R.C.C SLAB	1 X 3.40m	8.83
8	104.631	HP Culvert	1 X 0.90 Dia	10.1
9	105.031	HP Culvert	1 X 1.20 Dia	11.55
10	105.477	R.C.C SLAB	1 X 3.20m	11.55
11	105.627	HP Culvert	1 X 1.20 Dia	12.5
12	105.805	HP Culvert	1 X 0.90 Dia	12.5
13	105.896	R.C.C SLAB	1 X 4.50m	12.4
14	106.200	R.C.C SLAB	1 X 5.20m	18.6
15	106.224	HP Culvert	1 X 0.90 Dia	16.6
16	106.338	HP Culvert	1 X 0.60 Dia	11.3
17	106.388	HP Culvert	1 X 0.90 Dia	8.83
18	106.540	R.C.C SLAB	1 X 3.60m	10.1
19	106.778	R.C.C SLAB	1 X 3.70m	11.55
20	106.945	HP Culvert	1 X 1.20 Dia	11.55
21	107.038	HP Culvert	1 X 0.90 Dia	11.55
22	107.401	HP Culvert	1 X 0.90 Dia	11.55
23	107.517	HP Culvert	1 X 0.90 Dia	10.1

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
24	107.624	R.C.C SLAB	1 X 3.50m	11.55
25	107.736	HP Culvert	1 X 1.20 Dia	11.55
26	107.955	R.C.C SLAB	1 X 4.40m	12.5
27	108.063	HP Culvert	1 X 0.60 Dia	12.5
28	108.302	HP Culvert	1 X 0.90 Dia	12.4
29	108.501	HP Culvert	1 X 1.20 Dia	18.6
30	108.690	R.C.C SLAB	1 X 5.40m	16.6
31	108.762	HP Culvert	1 X 1.20 Dia	11.3
32	108.826	HP Culvert	1 X 1.20 Dia	8.83
33	108.945	HP Culvert	1 X 0.60 Dia	10.1
34	109.005	R.C.C SLAB	1 X 3.70 Dia	11.55
35	109.119	HP Culvert	1 X 0.90 Dia	11.55
36	109.404	HP Culvert	1 X 0.90 Dia	11.55
37	109.589	R.C.C SLAB	1 X 1.90m	11.55
38	109.834	R.C.C SLAB	1 X 5.20m	15.2
39	109.913	HP Culvert	1 X 0.30 Dia	15.0
40	109.980	HP Culvert	1 X 0.90 Dia	10.0
41	110.064	R.C.C SLAB	1 X 1.20m	10.0
42	110.306	HP Culvert	1 X 0.90 Dia	12.0
43	110.377	R.C.C SLAB	1 X 1.80m	13.0
44	110.466	HP Culvert	1 X 1.20 Dia	14.0
45	110.546	HP Culvert	1 X 1.00 Dia	11.3
46	110.613	HP Culvert	1 X 0.90 Dia	9.7
47	110.642	HP Culvert	1 X 1.20 Dia	10.8
48	110.874	R.C.C SLAB	1 X 4.80m	12.0
49	110.971	HP Culvert	1 X 0.90 Dia	15.8
50	111.220	HP Culvert	1 X 1.20 Dia	12.8
51	111.359	HP Culvert	1 X 1.20 Dia	13.7
52	111.562	HP Culvert	1 X 1.20 Dia	8.0
53	111.654	HP Culvert	1 X 1.00 Dia	12.5
54	111.716	R.C.C SLAB	1 X 1.70m	14.5
55	111.821	HP Culvert	1 X 1.30 Dia	9.0
56	111.916	R.C.C SLAB	1 X 4.90m	10.0
57	112.108	R.C.C SLAB	1 X 4.20m	11.3
58	112.495	HP Culvert	1 X 1.20 Dia	15.2
59	112.582	R.C.C SLAB	1 X 4.40m	15.0
60	112.610	HP Culvert	1 X 1.60 Dia	10.0
61	112.670	HP Culvert	1 X 0.90 Dia	12.0
62	112.946	HP Culvert	1 X 1.60 Dia	13.0
63	113.062	R.C.C SLAB	1 X 1.40m	14.0
64	113.274	R.C.C SLAB	1 X 5.20m	11.3
65	113.473	HP Culvert	1 X 0.90 Dia	9.7
66	113.759	HP Culvert	1 X 0.60 Dia	10.8
67	113.967	R.C.C SLAB	1 X 1.50m	12.0
68	114.129	R.C.C SLAB	1 X 1.60m	15.8
69	114.312	HP Culvert	1 X 0.90 Dia	15.8
70	114.808	HP Culvert	1 X 1.00 Dia	12.8
71	115.160	R.C.C SLAB	1 X 2.90m	13.7
72	115.448	R.C.C SLAB	1 X 1.50m	8.0
73	115.525	HP Culvert	1 X 0.60 Dia	12.5
74	115.818	R.C.C SLAB	1 X 1.50m	12.5

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
75	115.946	HP Culvert	1 X 1.50 Dia	14.5
76	116.074	HP Culvert	1 X 1.50 Dia	9.0
77	116.521	HP Culvert	2 X 1.20 Dia	10.0
78	116.676	R.C.C SLAB	1 X 4.50m	12.0
79	116.816	R.C.C SLAB	1 X 1.50m	15.8
80	117.048	R.C.C SLAB	1 X 2.90m	12.8
81	117.238	R.C.C SLAB	1 X 1.50m	13.7
82	117.345	R.C.C SLAB	1 X 1.50m	8.0
83	117.447	R.C.C SLAB	1 X 1.30m	12.5
84	117.615	HP Culvert	1 X 1.50 Dia	14.5
85	117.783	R.C.C SLAB	1 X 1.50m	9.0
86	117.968	R.C.C SLAB	1 X 1.60m	11.3
87	118.243	R.C.C SLAB	1 X 1.50m	15.2
88	118.473	R.C.C SLAB	1 X 1.50m	15.0
89	118.591	R.C.C SLAB	1 X 1.40m	10.0
90	118.725	HP Culvert	1 X 0.30 Dia	12.0
91	118.868	R.C.C SLAB	1 X 1.20m	13.0
92	119.074	R.C.C SLAB	1 X 1.40m	14.0
93	119.341	R.C.C SLAB	1 X 2.80m	14.0
94	119.674	R.C.C SLAB	1 X 1.50m	11.3
95	119.758	R.C.C SLAB	1 X 1.50m	11.3
96	119.907	R.C.C SLAB	1 X 1.60m	10.8
97	120.051	HP Culvert	1 X 1.20 Dia	12.0
98	120.499	HP Culvert	1 X 0.60 Dia	15.8
99	120.588	HP Culvert	1 X 1.20 Dia	12.8
100	120.890	HP Culvert	1 X 0.90 Dia	13.7
101	121.124	HP Culvert	1 X 1.20 Dia	8.0
102	121.700	HP Culvert	1 X 0.90 Dia	12.5
103	121.791	HP Culvert	1 X 0.90 Dia	14.5
104	122.157	HP Culvert	2 X 0.90 Dia	9.0
105	122.258	HP Culvert	1 X 0.90 Dia	10.0
106	122.457	HP Culvert	1 X 0.90 Dia	12.0
107	122.640	HP Culvert	1 X 0.90 Dia	15.8
108	122.846	HP Culvert	1 X 1.20 Dia	12.8
109	122.997	HP Culvert	1 X 1.20 Dia	13.7
110	123.174	HP Culvert	1 X 1.20 Dia	8.0
111	123.218	HP Culvert	1 X 1.20 Dia	12.5
112	123.261	HP Culvert	1 X 1.20 Dia	14.5
113	123.317	HP Culvert	1 X 0.90 Dia	9.0
114	123.520	HP Culvert	1 X 0.30 Dia	10.0
115	123.582	HP Culvert	1 X 0.90 Dia	11.3
116	123.712	HP Culvert	1 X 1.20 Dia	15.2
117	123.854	HP Culvert	1 X 1.20 Dia	15.0
118	123.937	HP Culvert	1 X 0.90 Dia	10.0
119	124.100	HP Culvert	1 X 0.90 Dia	12.0
120	124.123	R.C.C SLAB	1 X 2.00m	13.7
121	124.179	HP Culvert	1 X 0.90 Dia	12.8
122	124.297	HP Culvert	1 X 0.60 Dia	13.0
123	124.486	HP Culvert	1 X 0.90 Dia	14.0
124	124.570	R.C.C SLAB	1 X 3.20m	14.0
125	124.821	R.C.C SLAB	1 X 1.40m	11.3

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
126	124.917	R.C.C SLAB	1 X 1.50m	11.3
127	125.023	HP Culvert	1 X 0.90 Dia	10.8
128	125.178	HP Culvert	1 X 0.60 Dia	12.0
129	125.374	R.C.C SLAB	1 X 1.00m	15.8
130	125.529	R.C.C SLAB	1 X 1.00m	12.8
131	125.642	HP Culvert	1 X 0.60 Dia	13.7
132	125.820	R.C.C SLAB	1 X 2.00m	8.0
133	125.906	HP Culvert	2 X 0.90 Dia	12.5
134	126.495	HP Culvert	1 X 1.00 Dia	14.5
135	126.601	R.C.C SLAB	1 X 5.46m	10.9
136	126.841	HP Culvert	1 X 0.60 Dia	12.2
137	127.000	HP Culvert	1 X 0.60 Dia	12.5
138	127.293	HP Culvert	2 X 0.90 Dia	14.5
139	127.549	HP Culvert	1 X 0.90 Dia	9.0
140	127.745	R.C.C SLAB	1 X 1.58m	10.0
141	127.796	HP Culvert	1 X 0.90 Dia	11.3
142	127.969	HP Culvert	1 X 0.90 Dia	15.2
143	128.124	R.C.C SLAB	1 X 2.23m	15.0
144	128.459	HP Culvert	1 X 1.20 Dia	10.0
145	128.619	HP Culvert	1 X 0.90 Dia	10.8
146	128.759	HP Culvert	1 X 0.90 Dia	12.0
147	129.172	HP Culvert	1 X 0.90 Dia	15.8
148	129.242	HP Culvert	1 X 0.60 Dia	15.8
149	129.445	HP Culvert	1 X 1.20 Dia	12.8
150	129.520	HP Culvert	1 X 0.60 Dia	13.7
151	129.593	HP Culvert	1 X 0.30 Dia	8.0
152	130.080	HP Culvert	1 X 1.20 Dia	12.5
153	130.289	R.C.C SLAB	1 X 1.67m	12.5
154	130.323	HP Culvert	1 X 0.90 Dia	14.5
155	130.403	HP Culvert	1 X 2.80 Dia	9.0
156	130.496	HP Culvert	1 X 0.90 Dia	10.0
157	130.637	R.C.C SLAB	1 X 1.60m	12.0
158	130.850	HP Culvert	1 X 0.90 Dia	15.8
159	130.974	HP Culvert	1 X 0.90 Dia	12.8
160	131.009	R.C.C SLAB	1 X 3.10m	13.7
161	131.248	HP Culvert	1 X 0.90 Dia	8.0
162	131.300	R.C.C SLAB	1 X 2.97m	12.5
163	131.606	HP Culvert	1 X 0.90 Dia	14.5
164	131.852	HP Culvert	1 X 0.90 Dia	9.0
165	131.916	R.C.C SLAB	1 X 2.91m	10.0
166	132.160	HP Culvert	1 X 1.50 Dia	11.3
167	132.250	HP Culvert	1 X 0.90 Dia	15.2
168	132.530	HP Culvert	1 X 1.00 Dia	15.0
169	132.556	HP Culvert	1 X 0.90 Dia	10.0
170	132.773	R.C.C SLAB	1 X 2.95m	12.0
171	132.900	R.C.C SLAB	1 X 5.83m	13.0
172	132.959	HP Culvert	1 X 0.90 Dia	14.0
173	132.998	R.C.C SLAB	1 X 2.95m	14.0
174	133.217	HP Culvert	1 X 0.90 Dia	11.3
175	133.410	HP Culvert	1 X 0.90 Dia	11.3
176	133.535	HP Culvert	1 X 1.00 Dia	10.8

Sl. No.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
177	133.686	HP Culvert	1 X 1.20 Dia	12.0
178	133.936	HP Culvert	1 X 1.00 Dia	15.8
179	134.134	R.C.C SLAB	1 X 2.70m	12.8
180	134.309	R.C.C SLAB	1 X 1.60m	13.7
181	134.664	HP Culvert	1 X 1.50 Dia	8.0

11. Busbays

The details of bus bays onthe Site are as follows:

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

12. Truck Laybyes

The details of trucklay byes are as follows:

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

13. Roadsidedrains

The details of the roadside drains are as follows:

Sl No	Chainage (km)		Length (m)	Side	Type
	From	To			
1	103.485	103.610	125	Left Side	Kachha
2	103.625	103.825	200	Left Side	Kachha
3	103.875	103.940	65	Left Side	Kachha
4	103.945	103.965	20	Left side	Pucca
5	103.965	104.030	65	Left Side	Kachha
6	104.030	104.080	50	Left side	Pucca
7	104.080	104.140	60	Left Side	Kachha
8	104.140	104.175	35	Left side	Pucca
9	104.190	104.230	40	Left side	Pucca
10	104.230	104.350	120	Left Side	Kachha
11	104.370	104.450	80	Left Side	Kachha
12	104.475	104.510	35	Left Side	Kachha
13	104.560	104.580	20	Left Side	Kachha
14	104.625	104.630	5	Left side	Pucca
15	104.630	105.025	395	Left Side	Kachha
16	105.075	105.150	75	Left Side	Kachha
17	105.200	105.525	325	Left Side	Kachha
18	105.525	105.775	250	Left side	Pucca
19	105.775	106.200	425	Left Side	Kachha
20	106.210	106.375	165	Left Side	Kachha
21	106.400	106.500	100	Left Side	Kachha
22	106.550	106.940	390	Left Side	Kachha
23	107.025	107.190	165	Left Side	Kachha
24	107.240	107.510	270	Left Side	Kachha
25	107.525	108.125	600	Left Side	Kachha

Sl No	Chainage (km)		Length (m)	Side	Type
	From	To			
26	108.210	108.300	90	Left Side	Kachha
27	108.325	108.680	355	Left Side	Kachha
28	108.770	108.825	55	Left Side	Kachha
29	108.875	109.100	225	Left Side	Kachha
30	109.125	109.450	325	Left Side	Kachha
31	109.450	109.500	50	Left side	Pucca
32	109.525	109.825	300	Left Side	Kachha
33	109.840	110.090	250	Left side	Pucca
34	110.090	110.850	760	Left Side	Kachha
35	110.890	111.190	300	Left Side	Kachha
36	111.190	111.220	30	Left side	Pucca
37	111.220	111.900	680	Left Side	Kachha
38	111.925	112.075	150	Left Side	Kachha
39	112.150	112.475	325	Left Side	Kachha
40	112.540	112.580	40	Left Side	Kachha
41	112.620	112.675	55	Left side	Pucca
42	112.675	112.790	115	Left Side	Kachha
43	112.790	112.825	35	Left side	Pucca
44	112.825	113.550	725	Left Side	Kachha
45	113.575	113.650	75	Left side	Pucca
46	113.700	114.020	320	Left side	Pucca
47	114.020	114.050	30	Left Side	Kachha
48	114.120	114.230	110	Left side	Pucca
49	114.230	114.250	20	Left Side	Kachha
50	114.275	114.300	25	Left side	Kachha
51	114.300	114.350	50	Left side	Pucca
52	114.600	114.675	75	Right side	Kachha
53	114.675	114.725	50	Right Side	Pucca
54	114.725	115.425	700	Right side	Kachha
55	115.500	116.150	650	Right side	Kachha
56	116.200	116.220	20	Right side	Kachha
57	116.240	116.425	185	Right side	Kachha
58	116.470	116.500	30	Right side	Kachha
59	116.675	116.975	300	Right side	Kachha
60	117.050	117.400	350	Right side	Kachha
61	117.450	118.225	775	Right side	Kachha
62	118.250	118.350	100	Right side	Kachha
63	118.375	118.550	175	Right side	Kachha
64	118.570	118.580	10	Right side	Kachha
65	118.625	118.775	150	Right side	Kachha
66	118.840	118.850	10	Right side	Kachha
67	118.880	119.210	330	Right side	Kachha
68	119.250	119.725	475	Right side	Kachha
69	119.725	119.810	85	Right side	Pucca
70	119.810	119.875	65	Right side	Kachha

Sl No	Chainage (km)		Length (m)	Side	Type
	From	To			
71	119.900	121.150	1250	Right side	Kachha
72	121.200	121.350	150	Right side	Kachha
73	121.425	121.450	25	Right side	Kachha
74	121.450	121.550	100	Both Side	Pucca
75	121.550	121.790	240	Left side	Pucca
76	121.790	122.240	450	Left Side	Kachha
77	122.325	122.640	315	Left Side	Kachha
78	122.700	123.120	420	Left Side	Kachha
79	123.225	123.310	85	Left Side	Kachha
80	123.310	123.330	20	Left side	Pucca
81	123.330	123.350	20	Left Side	Kachha
82	123.400	123.925	525	Left Side	Kachha
83	123.950	125.375	1425	Left Side	Kachha
84	125.475	131.275	5800	Left Side	Kachha
85	131.475	131.650	175	Left Side	Kachha
86	131.650	132.700	1050	Left Side	Kachha
87	132.740	134.025	1285	Left Side	Kachha
88	134.075	134.967	892	Left Side	Kachha

14. Majorjunctions

The details ofmajor junctions are as follows:

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

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

15. Minorjunctions

The details of the minor junctions are as follows:

Sl. No.	Location	Type of intersection	
		T-Junction	Cross Road
1	109.504	Y	3-Legged
2	121.454	+	4-Legged
3	121.555	Y	3-Legged
4	131.655	Y	3-Legged
5	133.832	Y	3-Legged
6	134.381	Y	3-Legged
7	134.593	Y	3-Legged
8	134.625	Y	3-Legged

6. Bypasses

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

Sl.No.	Nameofbypass (town)	Chainage(km)From kmtokm	Length (inKm)
Nil			

17. Otherstructures

[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		Length (in Km)				Crossings			
	From	To	400KV	220KV	110KV	66KV	400KV	220KV	110KV	66KV
Nil										

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

SL. NO	Chainage		HT/LT Lines (Nos.)			Crossings			Transformer		Conductor	
	From	To	33KV	11KV	LT	33KV	11KV	LT	No	Capacity	Type	Length
1	103.557	134.821	0	21	67							14.5 km

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

The site includes the following Public Health utilities:-

SL. NO	Chainage		Length (in Km)				Crossings				Water Tank	
	From	To	Water Supply Line		Sewage Line		Water Supply Line		Sewage Line		Capacity (inlts)	Nos.
			With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow	With Pumping	With Gravity Flow		
1	103.557	134.821	3.000								65000	7

(iii) Any Other line

Annex – II

(As per Clause 8.3 (i))

(Schedule-A)

Dates for providing Right of Way of Construction Zone

ThedatesonwhichtheAuthorityshallprovideRightofWayofConstructionZonetothe Contractor ondifferent stretches ofthe Site is stated below:

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

Annex -

III(Schedule-A)

Alignment Plans

TheexistingalignmentoftheProjectHighwayshallbemodifiedinthefollowingsectionsas per the alignment planindicated below:

(i) ThealignmentoftheProjectHighwayisenclosedinalignmentplan.Finishedroad levelindicatedinthealignmentplan shallbefollowed by thecontractorasminimum FRL.Inanycase,thefinishedroadleveloftheprojecthighway shallnotbelessthan those indicatedin thealignmentplan.Thecontractorshall,however, improve/upgrade the Roadprofileas indicatedinAnnex-III based onsite/design requirement.

(ii) TrafficSignageplanoftheProjectHighwayshowingnumbers&locationoftraffic signsisenclosed.Thecontractor shall,however,improve/upgradeuponthetraffic signageplanasindicatedinAnnex-IIIbasedonsite/designrequirementasperthe relevant specifications/IRC Codes/Manual.

Annex – IV

(Schedule-A)

Environment Clearances

The following environment clearances have beenobtained: [***]

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

Environmental Clearances are not required for the project.

Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. Rehabilitation and augmentation

Rehabilitation and augmentation shall include Two-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) & IRC: 52-2019] referred to as the Manual. If any standards specifications or details are not given in the Manual the minimum design/construction requirements shall be specified in this Schedule. In addition to these particulars all other essential project specific details as required should be provided 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 theAuthorityandshowninthealignmentplansspecifiedinAnnex-IIIofSchedule-A. Geometric deficiencies, if any, in the existing horizontal and vertical profiles shall be corrected as per the prescribed standards for hilly terrain to the extent land is available.

(ii) Width of Carriageway

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

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

Sl. No.	Built-up stretch (Township)	Location (km)		Width (m)	Typical Cross Section (Refer to Manual)	Remarks
		From	To			
1	Rengpang	105.550	106.225	7	As per attached TCS drawing	7 m Carriageway
2	Rengpang	111.460	111.800	7	As per attached TCS drawing	7 m Carriageway
3	Bolongdai	118.175	118.510	7	As per attached TCS drawing	7 m Carriageway
4	Nungba	118.510	119.200	7	As per attached TCS drawing	7 m Carriageway
5	Nungba	119.790	120.010	7	As per attached TCS drawing	7 m Carriageway
6	Puilon (Kambiron)	130.100	130.465	7	As per attached TCS drawing	7 m Carriageway
7	Puilon (Kambiron)	130.595	130.875	7	As per attached TCS drawing	7 m Carriageway
8	Puilon (Kambiron)	131.125	131.225	7	As per attached TCS drawing	7 m Carriageway

(b) Except as otherwise provided in this Agreement the width of the paved carriageway and cross-sectional features shall conform to paragraph 1.1 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 40-50 km/hr and for sharp curve and hair pin bend locations speed reduces up to 30kmph & 20 kmph, respectively.

(iii) Improvement of the existing road geometrics

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

Sl. No.	Stretch	Type of Deficiency	Remarks
1	101.325 to 101.381	Sharp Bend	Design Speed = 30kmph
2	101.543 to 101.608	Sharp Bend	Design Speed = 30kmph
3	101.653 to 101.665	Sharp Bend	Design Speed = 30kmph
4	101.707 to 101.734	Sharp Bend	Design Speed = 30kmph
5	101.77 to 101.778	Sharp Bend	Design Speed = 30kmph
6	101.854 to 101.863	Sharp Bend	Design Speed = 30kmph
7	102.169 to 102.185	Sharp Bend	Design Speed = 30kmph
8	102.222 to 102.254	Sharp Bend	Design Speed = 30kmph
9	102.294 to 102.324	Sharp Bend	Design Speed = 30kmph
10	102.423 to 102.43	Sharp Bend	Design Speed = 30kmph
11	102.491 to 102.511	Sharp Bend	Design Speed = 30kmph
12	102.597 to 102.651	Sharp Bend	Design Speed = 30kmph
13	102.71 to 102.714	Sharp Bend	Design Speed = 30kmph
14	102.759 to 102.776	Sharp Bend	Design Speed = 30kmph
15	102.817 to 102.825	Sharp Bend	Design Speed = 30kmph
16	102.865 to 102.892	Sharp Bend	Design Speed = 30kmph
17	102.944 to 103.026	Sharp Bend	Design Speed = 30kmph
18	103.062 to 103.078	Sharp Bend	Design Speed = 30kmph
19	103.133 to 103.18	Sharp Bend	Design Speed = 30kmph
20	103.572 to 103.656	Sharp Bend	Design Speed = 30kmph
21	103.829 to 103.866	Sharp Bend	Design Speed = 30kmph
22	104.095 to 104.107	Sharp Bend	Design Speed = 30kmph
23	104.164 to 104.168	Sharp Bend	Design Speed = 30kmph
24	104.204 to 104.256	Sharp Bend	Design Speed = 30kmph
25	104.364 to 104.424	Sharp Bend	Design Speed = 30kmph
26	104.485 to 104.488	Sharp Bend	Design Speed = 30kmph
27	104.55 to 104.564	Sharp Bend	Design Speed = 30kmph
28	104.684 to 104.686	Sharp Bend	Design Speed = 30kmph
29	104.712 to 104.742	Sharp Bend	Design Speed = 30kmph
30	104.78 to 104.809	Sharp Bend	Design Speed = 30kmph
31	104.854 to 104.863	Sharp Bend	Design Speed = 30kmph
32	104.898 to 104.921	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
33	104.966 to 104.978	Sharp Bend	Design Speed = 30kmph
34	105.059 to 105.065	Sharp Bend	Design Speed = 30kmph
35	105.109 to 105.137	Sharp Bend	Design Speed = 30kmph
36	105.174 to 105.182	Sharp Bend	Design Speed = 30kmph
37	105.499 to 105.507	Sharp Bend	Design Speed = 30kmph
38	106.353 to 106.362	Sharp Bend	Design Speed = 30kmph
39	106.446 to 106.497	Sharp Bend	Design Speed = 30kmph
40	106.571 to 106.608	Sharp Bend	Design Speed = 20kmph
41	106.953 to 107	Sharp Bend	Design Speed = 30kmph
42	107.065 to 107.081	Sharp Bend	Design Speed = 30kmph
43	107.229 to 107.283	Sharp Bend	Design Speed = 30kmph
44	107.335 to 107.345	Sharp Bend	Design Speed = 30kmph
45	107.393 to 107.396	Sharp Bend	Design Speed = 30kmph
46	107.449 to 107.459	Sharp Bend	Design Speed = 30kmph
47	107.921 to 107.941	Sharp Bend	Design Speed = 30kmph
48	107.992 to 108.003	Sharp Bend	Design Speed = 30kmph
49	108.051 to 108.139	Sharp Bend	Design Speed = 30kmph
50	108.195 to 108.227	Sharp Bend	Design Speed = 30kmph
51	108.258 to 108.264	Sharp Bend	Design Speed = 30kmph
52	108.595 to 108.636	Sharp Bend	Design Speed = 30kmph
53	108.682 to 108.694	Sharp Bend	Design Speed = 30kmph
54	108.745 to 108.811	Sharp Bend	Design Speed = 30kmph
55	109.069 to 109.150	Sharp Bend	Design Speed = 30kmph
56	109.397 to 109.437	Sharp Bend	Design Speed = 20kmph
57	109.518 to 109.560	Sharp Bend	Design Speed = 30kmph
58	109.582 to 109.600	Sharp Bend	Design Speed = 30kmph
59	109.631 to 109.646	Sharp Bend	Design Speed = 30kmph
60	109.765 to 109.825	Sharp Bend	Design Speed = 30kmph
61	109.891 to 109.916	Sharp Bend	Design Speed = 30kmph
62	109.962 to 109.976	Sharp Bend	Design Speed = 30kmph
63	110.392 to 110.439	Sharp Bend	Design Speed = 30kmph
64	110.497 to 110.532	Sharp Bend	Design Speed = 30kmph
65	110.612 to 110.642	Sharp Bend	Design Speed = 30kmph
66	110.773 to 110.826	Sharp Bend	Design Speed = 30kmph
67	110.887 to 110.918	Sharp Bend	Design Speed = 30kmph
68	111.016 to 111.024	Sharp Bend	Design Speed = 30kmph
69	111.071 to 111.082	Sharp Bend	Design Speed = 30kmph
70	111.130 to 111.181	Sharp Bend	Design Speed = 30kmph
71	111.226 to 111.236	Sharp Bend	Design Speed = 30kmph
72	111.287 to 111.306	Sharp Bend	Design Speed = 30kmph
73	111.388 to 111.421	Sharp Bend	Design Speed = 30kmph
74	111.452 to 111.482	Sharp Bend	Design Speed = 30kmph
75	111.512 to 111.528	Sharp Bend	Design Speed = 30kmph
76	111.587 to 111.609	Sharp Bend	Design Speed = 30kmph
77	111.655 to 111.675	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
78	111.721 to 111.728	Sharp Bend	Design Speed = 30kmph
79	112.090 to 112.093	Sharp Bend	Design Speed = 30kmph
80	112.148 to 112.160	Sharp Bend	Design Speed = 30kmph
81	112.283 to 112.308	Sharp Bend	Design Speed = 30kmph
82	112.565 to 112.567	Sharp Bend	Design Speed = 30kmph
83	112.599 to 112.628	Sharp Bend	Design Speed = 30kmph
84	112.658 to 112.680	Sharp Bend	Design Speed = 30kmph
85	112.745 to 112.788	Sharp Bend	Design Speed = 30kmph
86	112.905 to 112.911	Sharp Bend	Design Speed = 30kmph
87	112.962 to 112.966	Sharp Bend	Design Speed = 30kmph
88	113.022 to 113.043	Sharp Bend	Design Speed = 30kmph
89	113.093 to 113.101	Sharp Bend	Design Speed = 30kmph
90	113.157 to 113.159	Sharp Bend	Design Speed = 30kmph
91	113.215 to 113.235	Sharp Bend	Design Speed = 30kmph
92	113.271 to 113.308	Sharp Bend	Design Speed = 30kmph
93	113.359 to 113.429	Sharp Bend	Design Speed = 30kmph
94	113.476 to 113.532	Sharp Bend	Design Speed = 30kmph
95	113.685 to 113.712	Sharp Bend	Design Speed = 30kmph
96	113.831 to 113.879	Sharp Bend	Design Speed = 30kmph
97	113.928 to 113.932	Sharp Bend	Design Speed = 30kmph
98	113.971 to 113.992	Sharp Bend	Design Speed = 30kmph
99	114.048 to 114.078	Sharp Bend	Design Speed = 30kmph
100	115.933 to 115.942	Sharp Bend	Design Speed = 30kmph
101	115.995 to 116.051	Sharp Bend	Design Speed = 30kmph
102	116.087 to 116.113	Sharp Bend	Design Speed = 20kmph
103	116.162 to 116.165	Sharp Bend	Design Speed = 30kmph
104	116.209 to 116.224	Sharp Bend	Design Speed = 30kmph
105	116.708 to 116.734	Sharp Bend	Design Speed = 30kmph
106	116.876 to 116.899	Sharp Bend	Design Speed = 30kmph
107	116.944 to 116.951	Sharp Bend	Design Speed = 30kmph
108	117.007 to 117.033	Sharp Bend	Design Speed = 30kmph
109	117.276 to 117.304	Sharp Bend	Design Speed = 30kmph
110	118.924 to 119.050	Sharp Bend	Design Speed = 30kmph
111	119.096 to 119.114	Sharp Bend	Design Speed = 30kmph
112	119.284 to 119.343	Sharp Bend	Design Speed = 30kmph
113	119.443 to 119.458	Sharp Bend	Design Speed = 30kmph
114	119.499 to 119.523	Sharp Bend	Design Speed = 30kmph
115	119.571 to 119.605	Sharp Bend	Design Speed = 30kmph
116	119.660 to 119.667	Sharp Bend	Design Speed = 30kmph
117	119.770 to 119.800	Sharp Bend	Design Speed = 20kmph
118	119.877 to 119.920	Sharp Bend	Design Speed = 20kmph
119	119.962 to 119.987	Sharp Bend	Design Speed = 20kmph
120	120.069 to 120.139	Sharp Bend	Design Speed = 30kmph
121	120.199 to 120.245	Sharp Bend	Design Speed = 20kmph
122	120.297 to 120.383	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
123	120.436 to 120.448	Sharp Bend	Design Speed = 30kmph
124	120.506 to 120.517	Sharp Bend	Design Speed = 30kmph
125	120.564 to 120.576	Sharp Bend	Design Speed = 30kmph
126	120.628 to 120.671	Sharp Bend	Design Speed = 30kmph
127	121.446 to 121.508	Sharp Bend	Design Speed = 30kmph
128	121.628 to 121.679	Sharp Bend	Design Speed = 30kmph
129	121.826 to 121.846	Sharp Bend	Design Speed = 30kmph
130	121.892 to 121.930	Sharp Bend	Design Speed = 30kmph
131	122.429 to 122.487	Sharp Bend	Design Speed = 30kmph
132	123.499 to 123.543	Sharp Bend	Design Speed = 30kmph
133	123.907 to 123.947	Sharp Bend	Design Speed = 20kmph
134	124.025 to 124.061	Sharp Bend	Design Speed = 20kmph
135	124.322 to 124.333	Sharp Bend	Design Speed = 30kmph
136	124.391 to 124.419	Sharp Bend	Design Speed = 30kmph
137	124.536 to 124.548	Sharp Bend	Design Speed = 30kmph
138	124.599 to 124.613	Sharp Bend	Design Speed = 30kmph
139	124.669 to 124.713	Sharp Bend	Design Speed = 30kmph
140	124.76 to 124.7710	Sharp Bend	Design Speed = 30kmph
141	124.871 to 124.885	Sharp Bend	Design Speed = 30kmph
142	125.140 to 125.148	Sharp Bend	Design Speed = 30kmph
143	125.185 to 125.194	Sharp Bend	Design Speed = 30kmph
144	125.240 to 125.243	Sharp Bend	Design Speed = 30kmph
145	126.181 to 126.184	Sharp Bend	Design Speed = 30kmph
146	126.227 to 126.236	Sharp Bend	Design Speed = 30kmph
147	126.286 to 126.293	Sharp Bend	Design Speed = 30kmph
148	126.334 to 126.356	Sharp Bend	Design Speed = 30kmph
149	126.418 to 126.450	Sharp Bend	Design Speed = 30kmph
150	126.502 to 126.544	Sharp Bend	Design Speed = 20kmph
151	126.584 to 126.627	Sharp Bend	Design Speed = 30kmph
152	126.647 to 126.650	Sharp Bend	Design Speed = 30kmph
153	126.691 to 126.706	Sharp Bend	Design Speed = 30kmph
154	127.842 to 127.858	Sharp Bend	Design Speed = 30kmph
155	127.989 to 128.03	Sharp Bend	Design Speed = 20kmph
156	128.082 to 128.111	Sharp Bend	Design Speed = 30kmph
157	128.271 to 128.300	Sharp Bend	Design Speed = 30kmph
158	128.406 to 128.448	Sharp Bend	Design Speed = 30kmph
159	128.793 to 128.805	Sharp Bend	Design Speed = 30kmph
160	129.197 to 129.259	Sharp Bend	Design Speed = 30kmph
161	129.350 to 129.402	Sharp Bend	Design Speed = 30kmph
162	129.463 to 129.489	Sharp Bend	Design Speed = 30kmph
163	129.611 to 129.621	Sharp Bend	Design Speed = 30kmph
164	129.686 to 129.703	Sharp Bend	Design Speed = 30kmph
165	129.788 to 129.800	Sharp Bend	Design Speed = 30kmph
166	129.859 to 129.871	Sharp Bend	Design Speed = 30kmph
167	130.273 to 130.283	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
168	130.432 to 130.449	Sharp Bend	Design Speed = 30kmph
169	130.513 to 130.562	Sharp Bend	Design Speed = 30kmph
170	130.697 to 130.716	Sharp Bend	Design Speed = 30kmph
171	131.240 to 131.248	Sharp Bend	Design Speed = 30kmph

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 totheextentpossiblewithintheexistingrightofwayandproperroadsignsandsafety 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
1	105+550 to 105+725	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-13
2	105+725 to 105+900	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
3	105+900 to 106+030	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-13
4	106+030 to 106+100	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
5	106+100 to 106+225	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-13
6	111+460 to 111+800	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
7	118+175 to 118+460	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
8	118+460 to 118+525	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
9	118+525 to 118+575	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
10	118+575 to 118+630	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
11	118+630 to 118+700	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
12	118+700 to 118+760	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
13	118+760 to 118+820	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
14	118+820 to 118+870	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
15	118+870 to 118+925	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
16	118+925 to 119+000	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
17	119+000 to 119+050	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
18	119+050 to 119+100	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
19	119+100 to 119+150	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7B
20	119+150 to 119+200	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
21	119+790 to 120+010	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-7
22	130+100 to 130+325	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
23	130+325 to 130+375	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6A
24	130+375 to 130+465	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
25	130+595 to 130+875	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6
26	131+125 to 131+225	2X1.5 m paved shoulder & 2X1.0 m footpath	TCS-6

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

(c) Design andspecificationsofpavedshouldersandgranularmaterialshallconformtotherequirements specifiedintherelevant Manual.

(vi) Lateral and vertical clearances at underpasses

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

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

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

(vii) Lateral and vertical clearances at overpasses

(a) Lateralandverticalclearancesatoverpassesshallbeasperrequirementsspecifiedinthe relevant Manual.

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

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

(viii) Service roads

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 is 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 underpass/ 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 Number	TCS Description	Length (km)
TCS-3	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area with Triangular open drain on hill side and earthen shoulder on valley side (Reconstruction)	15.550
TCS-3A	Typical Cross Section of Two Lane Carriageway with Paved Shoulder in Rural area with Triangular open drain on hill side and earthen shoulder on valley side (New Construction)	4.430
TCS-4	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on Valley Side And Triangular Open drain on Hill side (Reconstruction)	1.725
TCS-5	Typical Cross Section of Two Lane Carriageway In Rural Area With Breast Wall on Hill Side And Earthen Shoulder on Valley side (Reconstruction)	1.675
TCS-5A	Typical Cross Section of Two Lane Carriageway In Rural Area With Breast Wall on Hill Side And Earthen Shoulder on Valley side (New Construction)	0.725
TCS-6	Typical Cross Section of Two Lane Carriageway In Built Up Area With Both Side Footpath Cum RCC Rectangular Covered Drain in Hilly Terrain (Reconstruction)	1.055
TCS-6A	Typical Cross Section of Two Lane Carriageway In Built Up Area With Both Side Footpath Cum RCC Rectangular Covered Drain in Hilly Terrain (New Construction)	0.050
TCS-7	Typical Cross Section of Two Lane Carriageway In Built-Up Area With Breast Wall on Hill Side And Footpath Cum RCC Rectangular Covered Drain on Valley side (Reconstruction)	0.895
TCS-7A	Typical Cross Section of Two Lane Carriageway In Rural Area With Breast Wall on Hill Side And Triangular Open Drain on Valley side (New Construction)	1.640
TCS-7B	Typical Cross Section of Two Lane Carriageway In Built-Up Area With Breast Wall on Hill Side And Footpath Cum RCC Rectangular Covered Drain on Valley side (New Construction)	0.575
TCS-11	Typical Cross Section of Two Lane Carriageway In Rural Area With Retaining Wall on Valley Side And Breast Wall on Hill side (Reconstruction)	0.075
TCS-12	Typical Cross Section of Two Lane Carriageway In Rural Area With Both Side Triangular Open Drain (New Construction)	1.175
TCS-13	Typical Cross Section of Two Lane Carriageway In Built-up Area With Triangular Open Drain on Hill Side and RCC Rectangular Covered Drain on Valley side (Reconstruction)	0.430
Total =		**30.000**

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
101280	101350	70	TCS-3
101350	101480	130	TCS-3A

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
101480	101530	50	TCS-4
101530	101675	145	TCS-3
101675	101750	75	TCS-3A
101750	101800	50	TCS-3
101800	101875	75	TCS-3A
101875	101950	75	TCS-4
101950	102000	50	TCS-5
102000	102125	125	TCS-5A
102125	102210	85	TCS-3
102210	102250	40	TCS-3A
102250	102350	100	TCS-3
102350	102400	50	TCS-4
102400	102450	50	TCS-3A
102450	102625	175	TCS-3
102625	102700	75	TCS-11
102700	102750	50	TCS-3
102750	102800	50	TCS-3A
102800	102940	140	TCS-3
102940	103020	80	TCS-3A
103020	103075	55	TCS-3
103075	103275	200	TCS-3A
103275	103350	75	TCS-3
103350	103450	100	TCS-3A
103450	103580	130	TCS-3
103580	103640	60	TCS-3A
103640	103700	60	TCS-4
103700	103775	75	TCS-3A
103775	103875	100	TCS-3
103875	103925	50	TCS-3A
103925	104000	75	TCS-3
104000	104050	50	TCS-4
104050	104270	220	TCS-3
104270	104320	50	TCS-4
104320	104470	150	TCS-3
104470	104625	155	TCS-3A
104625	104875	250	TCS-3
104875	105025	150	TCS-3
105025	105120	95	TCS-5
105120	105170	50	TCS-7A
105170	105220	50	TCS-3A
105220	105270	50	TCS-7A
105270	105360	90	TCS-3
105360	105485	125	TCS-12
105485	105550	65	TCS-3
105550	105725	175	TCS-13

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
105725	105900	175	TCS-7B
105900	106030	130	TCS-13
106030	106100	70	TCS-7B
106100	106225	125	TCS-13
106225	106300	75	TCS-3
106300	106350	50	TCS-12
106350	106450	100	TCS-3
106450	106525	75	TCS-3A
106525	106600	75	TCS-3
106600	106675	75	TCS-3A
106675	106775	100	TCS-5
106775	106850	75	TCS-5A
106850	107600	750	TCS-3
107600	107680	80	TCS-4
107680	107740	60	TCS-3A
107740	107790	50	TCS-4
107790	108025	235	TCS-3
108025	108175	150	TCS-3A
108175	108825	650	TCS-3
108825	108920	95	TCS-3A
108920	109235	315	TCS-3
109235	109275	40	TCS-3A
109275	109610	335	TCS-3
109610	109670	60	TCS-12
109670	109825	155	TCS-3
109825	109875	50	TCS-3A
109875	109930	55	TCS-3
109930	109980	50	TCS-4
109980	110100	120	TCS-12
110100	110325	225	TCS-3A
110325	110400	75	TCS-4
110400	110475	75	TCS-7A
110475	110700	225	TCS-3
110700	110750	50	TCS-3A
110750	110800	50	TCS-3
110800	110950	150	TCS-3A
110950	111050	100	TCS-3
111050	111125	75	TCS-3A
111125	111225	100	TCS-7A
111225	111280	55	TCS-5
111280	111400	120	TCS-3
111400	111460	60	TCS-3A
111460	111800	340	TCS-7
111800	112150	350	TCS-3
112150	112550	400	TCS-5

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
112550	112925	375	TCS-3
112925	113000	75	TCS-3A
113000	113050	50	TCS-3
113050	113100	50	TCS-3A
113100	113480	380	TCS-5
113480	113530	50	TCS-3
113530	113625	95	TCS-4
113625	113800	175	TCS-3A
113800	113900	100	TCS-4
113900	113975	75	TCS-3
113975	114150	175	TCS-5
114150	114225	75	TCS-5A
114225	114880	655	TCS-3
114880	114960	80	TCS-5A
114960	115010	50	TCS-7A
115010	115725	715	TCS-3
115725	115790	65	TCS-3A
115790	115850	60	TCS-4
115850	115900	50	TCS-3A
115900	115950	50	TCS-7A
115950	116030	80	TCS-3
116030	116085	55	TCS-4
116085	116280	195	TCS-7A
116280	116325	45	TCS-3A
116325	116375	50	TCS-5A
116375	116465	90	TCS-5
116465	116515	50	TCS-5A
116515	116650	135	TCS-3
116650	116700	50	TCS-3A
116700	116775	75	TCS-3
116775	116825	50	TCS-4
116825	117000	175	TCS-3
117000	117050	50	TCS-5
117050	117100	50	TCS-7A
117100	117550	450	TCS-3
117550	117780	230	TCS-5
117780	117825	45	TCS-5A
117825	118175	350	TCS-3
118175	118460	285	TCS-6
118460	118525	65	TCS-7B
118525	118575	50	TCS-7
118575	118630	55	TCS-7B
118630	118700	70	TCS-7
118700	118760	60	TCS-7B
118760	118820	60	TCS-7

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
118820	118870	50	TCS-7B
118870	118925	55	TCS-7
118925	119000	75	TCS-6
119000	119050	50	TCS-7B
119050	119100	50	TCS-7
119100	119150	50	TCS-7B
119150	119200	50	TCS-7
119200	119250	50	TCS-3
119250	119375	125	TCS-5A
119375	119530	155	TCS-3A
119530	119570	40	TCS-3
119570	119790	220	TCS-7A
119790	120010	220	TCS-7
120010	120110	100	TCS-3A
120110	120300	190	TCS-3
120300	120400	100	TCS-5A
120400	120475	75	TCS-3A
120475	120650	175	TCS-3
120650	120700	50	TCS-3A
120700	120750	50	TCS-3
120750	120810	60	TCS-12
120810	121450	640	TCS-3
121450	121500	50	TCS-4
121500	121650	150	TCS-3
121650	121750	100	TCS-7A
121750	122000	250	TCS-3
122000	122050	50	TCS-4
122050	122100	50	TCS-3A
122100	122315	215	TCS-3
122315	122435	120	TCS-4
122435	122550	115	TCS-3
122550	122600	50	TCS-3A
122600	122645	45	TCS-3
122645	122705	60	TCS-12
122705	122805	100	TCS-4
122805	122945	140	TCS-3
122945	123000	55	TCS-3A
123000	123100	100	TCS-3
123100	123155	55	TCS-12
123155	123200	45	TCS-3
123200	123255	55	TCS-12
123255	123310	55	TCS-3
123310	123375	65	TCS-12
123375	123425	50	TCS-3
123425	123675	250	TCS-7A

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
123675	124025	350	TCS-12
124025	124125	100	TCS-4
124125	124200	75	TCS-3
124200	124250	50	TCS-7A
124250	124305	55	TCS-3
124305	124375	70	TCS-3A
124375	124425	50	TCS-5
124425	125015	590	TCS-3
125015	125065	50	TCS-4
125065	125125	60	TCS-3A
125125	125725	600	TCS-3
125725	125775	50	TCS-3A
125775	126575	800	TCS-3
126575	126625	50	TCS-4
126625	126775	150	TCS-3
126775	126850	75	TCS-3A
126850	126975	125	TCS-3
126975	127025	50	TCS-12
127025	127125	100	TCS-3A
127125	127205	80	TCS-3
127205	127325	120	TCS-7A
127325	127475	150	TCS-3A
127475	127550	75	TCS-3
127550	127700	150	TCS-7A
127700	127800	100	TCS-3
127800	128045	245	TCS-3A
128045	128195	150	TCS-4
128195	128595	400	TCS-3
128595	128645	50	TCS-3A
128645	128695	50	TCS-3
128695	128745	50	TCS-3A
128745	128775	30	TCS-4
128775	128825	50	TCS-3A
128825	128945	120	TCS-3
128945	129025	80	TCS-3A
129025	129150	125	TCS-12
129150	129515	365	TCS-3
129515	129550	35	TCS-3A
129550	129775	225	TCS-3
129775	129850	75	TCS-3A
129850	129925	75	TCS-4
129925	130100	175	TCS-3
130100	130325	225	TCS-6
130325	130375	50	TCS-6A
130375	130465	90	TCS-6

Design Chainage (m)		Net Length (m)	TCS No.
From	To		
130465	130595	130	TCS-7A
130595	130875	280	TCS-6
130875	131125	250	TCS-3
131125	131225	100	TCS-6
131225	131280	55	TCS-3
Total Length =		**30000**	

3. Intersections and Grade Separators

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

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

Properlydesignedintersectionsshallbeprovidedatthelocationsandofthetypes and features given in the tables below:

(i) At-grade intersections

Major Intersections

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

Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	106+950	Y-Type	3-Legged
2	118+320	+-Type	4-Legged
3	118+420	Y-Type	3-Legged
4	128+105	Y-Type	3-Legged
5	130+211	T-Type	3-Legged
6	130+775	Y-Type	3-Legged
7	130+987	Y-Type	3-Legged
8	131+018	Y-Type	3-Legged

(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 giveninSection4oftheManualandthespecified 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

Not with standing anything to the contrary contained in this Agreement or the Manual. The Contractor shall design the pavement for design traffic of 20msa.

(iv) Reconstruction of stretches.

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

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

Sl. No.	Stretch from Km to Km	Remarks	TCS Type
1	101+280 to 101+350	Reconstruction	TCS-3
2	101+480 to 101+530	Reconstruction	TCS-4
3	101+530 to 101+675	Reconstruction	TCS-3
4	101+750 to 101+800	Reconstruction	TCS-3
5	101+875 to 101+950	Reconstruction	TCS-4
6	101+950 to 102+000	Reconstruction	TCS-5
7	102+125 to 102+210	Reconstruction	TCS-3
8	102+250 to 102+350	Reconstruction	TCS-3
9	102+350 to 102+400	Reconstruction	TCS-4
10	102+450 to 102+625	Reconstruction	TCS-3
11	102+625 to 102+700	Reconstruction	TCS-11
12	102+700 to 102+750	Reconstruction	TCS-3
13	102+800 to 102+940	Reconstruction	TCS-3
14	103+020 to 103+075	Reconstruction	TCS-3
15	103+275 to 103+350	Reconstruction	TCS-3
16	103+450 to 103+580	Reconstruction	TCS-3
17	103+640 to 103+700	Reconstruction	TCS-4

Sl. No.	Stretch from Km to Km	Remarks	TCS Type
18	103+775 to 103+875	Reconstruction	TCS-3
19	103+925 to 104+000	Reconstruction	TCS-3
20	104+000 to 104+050	Reconstruction	TCS-4
21	104+050 to 104+270	Reconstruction	TCS-3
22	104+270 to 104+320	Reconstruction	TCS-4
23	104+320 to 104+470	Reconstruction	TCS-3
24	104+625 to 104+875	Reconstruction	TCS-3
25	104+875 to 105+025	Reconstruction	TCS-3
26	105+025 to 105+120	Reconstruction	TCS-5
27	105+270 to 105+360	Reconstruction	TCS-3
28	105+485 to 105+550	Reconstruction	TCS-3
29	105+550 to 105+725	Reconstruction	TCS-13
30	105+900 to 106+030	Reconstruction	TCS-13
31	106+100 to 106+225	Reconstruction	TCS-13
32	106+225 to 106+300	Reconstruction	TCS-3
33	106+350 to 106+450	Reconstruction	TCS-3
34	106+525 to 106+600	Reconstruction	TCS-3
35	106+675 to 106+775	Reconstruction	TCS-5
36	106+850 to 107+600	Reconstruction	TCS-3
37	107+600 to 107+680	Reconstruction	TCS-4
38	107+740 to 107+790	Reconstruction	TCS-4
39	107+790 to 108+025	Reconstruction	TCS-3
40	108+175 to 108+825	Reconstruction	TCS-3
41	108+920 to 109+235	Reconstruction	TCS-3
42	109+275 to 109+610	Reconstruction	TCS-3
43	109+670 to 109+825	Reconstruction	TCS-3
44	109+875 to 109+930	Reconstruction	TCS-3
45	109+930 to 109+980	Reconstruction	TCS-4
46	110+325 to 110+400	Reconstruction	TCS-4
47	110+475 to 110+700	Reconstruction	TCS-3
48	110+750 to 110+800	Reconstruction	TCS-3
49	110+950 to 111+050	Reconstruction	TCS-3
50	111+225 to 111+280	Reconstruction	TCS-5
51	111+280 to 111+400	Reconstruction	TCS-3
52	111+460 to 111+800	Reconstruction	TCS-7
53	111+800 to 112+150	Reconstruction	TCS-3
54	112+150 to 112+550	Reconstruction	TCS-5
55	112+550 to 112+925	Reconstruction	TCS-3
56	113+000 to 113+050	Reconstruction	TCS-3
57	113+100 to 113+480	Reconstruction	TCS-5
58	113+480 to 113+530	Reconstruction	TCS-3
59	113+530 to 113+625	Reconstruction	TCS-4
60	113+800 to 113+900	Reconstruction	TCS-4
61	113+900 to 113+975	Reconstruction	TCS-3
62	113+975 to 114+150	Reconstruction	TCS-5
63	114+225 to 114+880	Reconstruction	TCS-3

Sl. No.	Stretch from Km to Km	Remarks	TCS Type
64	115+010 to 115+725	Reconstruction	TCS-3
65	115+790 to 115+850	Reconstruction	TCS-4
66	115+950 to 116+030	Reconstruction	TCS-3
67	116+030 to 116+085	Reconstruction	TCS-4
68	116+375 to 116+465	Reconstruction	TCS-5
69	116+515 to 116+650	Reconstruction	TCS-3
70	116+700 to 116+775	Reconstruction	TCS-3
71	116+775 to 116+825	Reconstruction	TCS-4
72	116+825 to 117+000	Reconstruction	TCS-3
73	117+000 to 117+050	Reconstruction	TCS-5
74	117+100 to 117+550	Reconstruction	TCS-3
75	117+550 to 117+780	Reconstruction	TCS-5
76	117+825 to 118+175	Reconstruction	TCS-3
77	118+175 to 118+460	Reconstruction	TCS-6
78	118+525 to 118+575	Reconstruction	TCS-7
79	118+630 to 118+700	Reconstruction	TCS-7
80	118+760 to 118+820	Reconstruction	TCS-7
81	118+870 to 118+925	Reconstruction	TCS-7
82	118+925 to 119+000	Reconstruction	TCS-6
83	119+050 to 119+100	Reconstruction	TCS-7
84	119+150 to 119+200	Reconstruction	TCS-7
85	119+200 to 119+250	Reconstruction	TCS-3
86	119+530 to 119+570	Reconstruction	TCS-3
87	119+790 to 120+010	Reconstruction	TCS-7
88	120+110 to 120+300	Reconstruction	TCS-3
89	120+475 to 120+650	Reconstruction	TCS-3
90	120+700 to 120+750	Reconstruction	TCS-3
91	120+810 to 121+450	Reconstruction	TCS-3
92	121+450 to 121+500	Reconstruction	TCS-4
93	121+500 to 121+650	Reconstruction	TCS-3
94	121+750 to 122+000	Reconstruction	TCS-3
95	122+000 to 122+050	Reconstruction	TCS-4
96	122+100 to 122+315	Reconstruction	TCS-3
97	122+315 to 122+435	Reconstruction	TCS-4
98	122+435 to 122+550	Reconstruction	TCS-3
99	122+600 to 122+645	Reconstruction	TCS-3
100	122+705 to 122+805	Reconstruction	TCS-4
101	122+805 to 122+945	Reconstruction	TCS-3
102	123+000 to 123+100	Reconstruction	TCS-3
103	123+155 to 123+200	Reconstruction	TCS-3
104	123+255 to 123+310	Reconstruction	TCS-3
105	123+375 to 123+425	Reconstruction	TCS-3
106	124+025 to 124+125	Reconstruction	TCS-4
107	124+125 to 124+200	Reconstruction	TCS-3
108	124+250 to 124+305	Reconstruction	TCS-3
109	124+375 to 124+425	Reconstruction	TCS-5

Sl. No.	Stretch from Km to Km	Remarks	TCS Type
110	124+425 to 125+015	Reconstruction	TCS-3
111	125+015 to 125+065	Reconstruction	TCS-4
112	125+125 to 125+725	Reconstruction	TCS-3
113	125+775 to 126+575	Reconstruction	TCS-3
114	126+575 to 126+625	Reconstruction	TCS-4
115	126+625 to 126+775	Reconstruction	TCS-3
116	126+850 to 126+975	Reconstruction	TCS-3
117	127+125 to 127+205	Reconstruction	TCS-3
118	127+475 to 127+550	Reconstruction	TCS-3
119	127+700 to 127+800	Reconstruction	TCS-3
120	128+045 to 128+195	Reconstruction	TCS-4
121	128+195 to 128+595	Reconstruction	TCS-3
122	128+645 to 128+695	Reconstruction	TCS-3
123	128+745 to 128+775	Reconstruction	TCS-4
124	128+825 to 128+945	Reconstruction	TCS-3
125	129+150 to 129+515	Reconstruction	TCS-3
126	129+550 to 129+775	Reconstruction	TCS-3
127	129+850 to 129+925	Reconstruction	TCS-4
128	129+925 to 130+100	Reconstruction	TCS-3
129	130+100 to 130+325	Reconstruction	TCS-6
130	130+375 to 130+465	Reconstruction	TCS-6
131	130+595 to 130+875	Reconstruction	TCS-6
132	130+875 to 131+125	Reconstruction	TCS-3
133	131+125 to 131+225	Reconstruction	TCS-6
134	131+225 to 131+280	Reconstruction	TCS-3

6. Roadside Drainage

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

RCC Covered Drain

Chainage (m)		Length of CD (m)	Net Length (m)	Side
From	To			
105550	105725	2.6	172.4	Valley
105725	105900	2.7	172.3	Valley
105900	106030	2.6	127.4	Valley
106030	106100	0	70.0	Valley
106100	106225	6.4	118.6	Valley
111460	111800	5.3	334.7	Valley
118175	118460	0	570.0	Both
118460	118525	0	65.0	Valley
118525	118575	2.6	47.4	Valley
118575	118630	0	55.0	Valley
118630	118700	2.6	67.4	Valley
118700	118760	0	60.0	Valley

118760	118820	0	60.0	Valley
118820	118870	0	50.0	Valley
118870	118925	0	55.0	Valley
118925	119000	0	150.0	Both
119000	119050	2.6	47.4	Valley
119050	119100	2.6	47.4	Valley
119100	119150	0	50.0	Valley
119150	119200	0	50.0	Valley
119790	120010	7.8	212.2	Valley
130100	130325	2.7	444.6	Both
130325	130375	2.7	94.6	Both
130375	130465	0	180.0	Both
130595	130875	5.3	549.4	Both
131125	131225	3.96	192.1	Both
Total =			**4043**	

RR Masonry Triangular Drain

Chainage (m)		Length of CD	Net Length (m)	Side
From	**To**			
101280	101350	2.7	67.3	Hill
101350	101480	0	130.0	Hill
101480	101530	0	50.0	Hill
101530	101675	0	145.0	Hill
101675	101750	6.06	68.9	Hill
101750	101800	0	50.0	Hill
101800	101875	0	75.0	Hill
101875	101950	5.3	69.7	Hill
102125	102210	5.26	79.7	Hill
102210	102250	0	40.0	Hill
102250	102350	7.96	92.0	Hill
102350	102400	0	50.0	Hill
102400	102450	0	50.0	Hill
102450	102625	0	175.0	Hill
102700	102750	2.6	47.4	Hill
102750	102800	0	50.0	Hill
102800	102940	2.6	137.4	Hill
102940	103020	0	80.0	Hill
103020	103075	0	55.0	Hill
103075	103275	3.96	196.0	Hill
103275	103350	2.7	72.3	Hill
103350	103450	0	100.0	Hill
103450	103580	7.7	122.3	Hill
103580	103640	0	60.0	Hill
103640	103700	0	60.0	Hill
103700	103775	0	75.0	Hill
103775	103875	9	91.0	Hill

Chainage (m)		Length of CD	Net Length	Side
103875	103925	0	50.0	Hill
103925	104000	2.6	72.4	Hill
104000	104050	2.6	47.4	Hill
104050	104270	5	215.0	Hill
104270	104320	0	50.0	Hill
104320	104470	5	145.0	Hill
104470	104625	3.96	151.0	Hill
104625	104875	2.6	247.4	Hill
104875	105025	2.6	147.4	Hill
105120	105170	0	50.0	Valley
105170	105220	5	45.0	Hill
105220	105270	0	50.0	Valley
105270	105360	2.6	87.4	Hill
105360	105485	0	250.0	Both
105485	105550	6.06	58.9	Hill
105550	105725	2.6	172.4	Hill
105900	106030	2.6	127.4	Hill
106100	106225	6.4	118.6	Hill
106225	106300	5.4	69.6	Hill
106300	106350	0	100.0	Both
106350	106450	2.6	97.4	Hill
106450	106525	5.26	69.7	Hill
106525	106600	2.6	72.4	Hill
106600	106675	0	75.0	Hill
106850	107600	19.24	730.8	Hill
107600	107680	0	80.0	Hill
107680	107740	2.6	57.4	Hill
107740	107790	2.7	47.3	Hill
107790	108025	13.06	221.9	Hill
108025	108175	0	150.0	Hill
108175	108825	14.3	635.7	Hill
108825	108920	2.6	92.4	Hill
108920	109235	14.04	301.0	Hill
109235	109275	0	40.0	Hill
109275	109610	5.12	329.9	Hill
109610	109670	0	120.0	Both
109670	109825	8.66	146.3	Hill
109825	109875	0	50.0	Hill
109875	109930	2.6	52.4	Hill
109930	109980	2.6	47.4	Hill
109980	110100	0	240.0	Both
110100	110325	3.96	221.0	Hill
110325	110400	2.6	72.4	Hill
110400	110475	0	75.0	Valley
110475	110700	9	216.0	Hill
110700	110750	0	50.0	Hill
110750	110800	8	42.0	Hill
110800	110950	0	150.0	Hill

Chainage (m)		Length of CD	Net Length	Side
110950	111050	2.6	97.4	Hill
111050	111125	0	75.0	Hill
111125	111225	2.7	97.3	Valley
111280	111400	2.6	117.4	Hill
111400	111460	0	60.0	Hill
111800	112150	2.6	347.4	Hill
112550	112925	8	367.0	Hill
112925	113000	0	75.0	Hill
113000	113050	2.6	47.4	Hill
113050	113100	0	50.0	Hill
113480	113530	0	50.0	Hill
113530	113625	3.84	91.2	Hill
113625	113800	6.14	168.9	Hill
113800	113900	2.7	97.3	Hill
113900	113975	0	75.0	Hill
114225	114880	14.56	640.4	Hill
114960	115010	2.6	47.4	Valley
115010	115725	10.5	704.5	Hill
115725	115790	0	65.0	Hill
115790	115850	0	60.0	Hill
115850	115900	2.7	47.3	Hill
115900	115950	0	50.0	Valley
115950	116030	0	80.0	Hill
116030	116085	2.6	52.4	Hill
116085	116280	0	195.0	Valley
116280	116325	3.84	41.2	Hill
116515	116650	2.6	132.4	Hill
116650	116700	0	50.0	Hill
116700	116775	2.6	72.4	Hill
116775	116825	0	50.0	Hill
116825	117000	2.6	172.4	Hill
117050	117100	0	50.0	Valley
117100	117550	5.2	444.8	Hill
117825	118175	2.6	347.4	Hill
119200	119250	0	50.0	Hill
119375	119530	2.6	152.4	Hill
119530	119570	0	40.0	Hill
119570	119790	2.7	217.3	Valley
120010	120110	2.6	97.4	Hill
120110	120300	2.6	187.4	Hill
120400	120475	0	75.0	Hill
120475	120650	5.3	169.7	Hill
120650	120700	0	50.0	Hill
120700	120750	2.6	47.4	Hill
120750	120810	0	120.0	Both
120810	121450	16.84	623.2	Hill
121450	121500	0	50.0	Hill
121500	121650	5.2	144.8	Hill

Chainage (m)		Length of CD	Net Length	Side
121650	121750	0	100.0	Valley
121750	122000	5.2	244.8	Hill
122000	122050	0	50.0	Hill
122050	122100	2.6	47.4	Hill
122100	122315	2.6	212.4	Hill
122315	122435	2.6	117.4	Hill
122435	122550	2.7	112.3	Hill
122550	122600	0	50.0	Hill
122600	122645	2.7	42.3	Hill
122645	122705	0	120.0	Both
122705	122805	0	100.0	Hill
122805	122945	2.6	137.4	Hill
122945	123000	0	55.0	Hill
123000	123100	0	100.0	Hill
123100	123155	0	110.0	Both
123155	123200	2.6	42.4	Hill
123200	123255	0	110.0	Both
123255	123310	6.06	48.9	Hill
123310	123375	0	130.0	Both
123375	123425	0	50.0	Hill
123425	123675	0	250.0	Valley
123675	124025	0	700.0	Both
124025	124125	0	100.0	Hill
124125	124200	2.7	72.3	Hill
124200	124250	0	50.0	Valley
124250	124305	0	55.0	Hill
124305	124375	2.6	67.4	Hill
124425	125015	10.6	579.4	Hill
125015	125065	0	50.0	Hill
125065	125125	2.6	57.4	Hill
125125	125725	9.14	590.9	Hill
125725	125775	0	50.0	Hill
125775	126575	10.6	789.4	Hill
126575	126625	0	50.0	Hill
126625	126775	2.7	147.3	Hill
126775	126850	0	75.0	Hill
126850	126975	9.26	115.7	Hill
126975	127025	0	100.0	Both
127025	127125	2.6	97.4	Hill
127125	127205	2.6	77.4	Hill
127205	127325	0	120.0	Valley
127325	127475	2.6	147.4	Hill
127475	127550	6.56	68.4	Hill
127550	127700	0	150.0	Valley
127700	127800	2.6	97.4	Hill
127800	128045	0	245.0	Hill
128045	128195	2.7	147.3	Hill
128195	128595	7.96	392.0	Hill

Chainage (m)		Length of CD	Net Length	Side
128595	128645	0	50.0	Hill
128645	128695	2.7	47.3	Hill
128695	128745	0	50.0	Hill
128745	128775	2.7	27.3	Hill
128775	128825	0	50.0	Hill
128825	128945	0	120.0	Hill
128945	129025	3.96	76.0	Hill
129025	129150	0	250.0	Both
129150	129515	33.94	331.1	Hill
129515	129550	0	35.0	Hill
129550	129775	2.6	222.4	Hill
129775	129850	0	75.0	Hill
129850	129925	3.96	71.0	Hill
129925	130100	3.96	171.0	Hill
130465	130595	14.5	115.5	Valley
130875	131125	2.6	247.4	Hill
131225	131279	0	54.0	Hill
Total =			**25587**	

Catch water Drain

Chainage (m)		Length of CD	Net Length (m)
From	To		
101350	101480	0	130.0
101675	101750	6.06	68.9
101800	101875	0	75.0
101950	102000	0	50.0
102000	102125	2.6	122.4
102210	102250	0	40.0
102400	102450	0	50.0
102750	102800	0	50.0
102940	103020	0	80.0
103075	103275	3.96	196.0
103350	103450	0	100.0
103580	103640	0	60.0
103700	103775	0	75.0
103875	103925	0	50.0
104470	104625	3.96	151.0
105025	105120	2.6	92.4
105120	105170	0	50.0
105170	105220	5	45.0
105220	105270	0	50.0
105360	105485	0	125.0
105725	105900	2.7	172.3

Chainage (m)		Length of CD	Net Length
106030	106100	0	70.0
106300	106350	0	50.0
106450	106525	5.26	69.7
106600	106675	0	75.0
106675	106775	0	100.0
106775	106850	0	75.0
107680	107740	2.6	57.4
108025	108175	0	150.0
108825	108920	2.6	92.4
109235	109275	0	40.0
109610	109670	0	60.0
109825	109875	0	50.0
109980	110100	0	120.0
110100	110325	3.96	221.0
110400	110475	0	75.0
110700	110750	0	50.0
110800	110950	0	150.0
111050	111125	0	75.0
111125	111225	2.7	97.3
111225	111280	0	55.0
111400	111460	0	60.0
111460	111800	5.3	334.7
112150	112550	3.84	396.2
112925	113000	0	75.0
113050	113100	0	50.0
113100	113480	5.2	374.8
113625	113800	6.14	168.9
113975	114150	0	175.0
114150	114225	0	75.0
114880	114960	0	80.0
114960	115010	2.6	47.4
115725	115790	0	65.0
115850	115900	2.7	47.3
115900	115950	0	50.0
116085	116280	0	195.0
116280	116325	3.84	41.2
116325	116375	0	50.0
116375	116465	0	90.0
116465	116515	0	50.0
116650	116700	0	50.0
117000	117050	2.7	47.3
117050	117100	0	50.0
117550	117780	2.6	227.4
117780	117825	0	45.0
118460	118525	0	65.0
118525	118575	2.6	47.4
118575	118630	0	55.0
118630	118700	2.6	67.4

Chainage (m)		Length of CD	Net Length
118700	118760	0	60.0
118760	118820	0	60.0
118820	118870	0	50.0
118870	118925	0	55.0
119000	119050	2.6	47.4
119050	119100	2.6	47.4
119100	119150	0	50.0
119150	119200	0	50.0
119250	119375	2.6	122.4
119375	119530	2.6	152.4
119570	119790	2.7	217.3
119790	120010	7.8	212.2
120010	120110	2.6	97.4
120300	120400	5.2	94.8
120400	120475	0	75.0
120650	120700	0	50.0
120750	120810	0	60.0
121650	121750	0	100.0
122050	122100	2.6	47.4
122550	122600	0	50.0
122645	122705	0	60.0
122945	123000	0	55.0
123100	123155	0	55.0
123200	123255	0	55.0
123310	123375	0	65.0
123425	123675	0	250.0
123675	124025	0	350.0
124200	124250	0	50.0
124305	124375	2.6	67.4
124375	124425	0	50.0
125065	125125	2.6	57.4
125725	125775	0	50.0
126775	126850	0	75.0
126975	127025	0	50.0
127025	127125	2.6	97.4
127205	127325	0	120.0
127325	127475	2.6	147.4
127550	127700	0	150.0
127800	128045	0	245.0
128595	128645	0	50.0
128695	128745	0	50.0
128775	128825	0	50.0
128945	129025	3.96	76.0
129025	129150	0	125.0
129515	129550	0	35.0
129775	129850	0	75.0
130465	130595	14.5	115.5
Total =			**10971**

Chainage (m)	Length of CD	Net Length

Total Length of Triangular Drain =	**36557**	**m**
Chute Drain (of avg 8 m height @ 50m Interval) =	**1755**	**m**

7. Design of Structures

(i) General

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

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

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

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
1	110+794	Carriageway Width = 11.0m Width of Railings = 1.0m (2x0.50m) Overall width = 12 m
2	129+184	

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

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

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

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

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

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

[Refer to provision of the relevant Manualand provide details]

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.	Culvert Location	Span /Opening (m)	Remarks*
1	101.344	2.0 X 3.0	Box Culvert
2	101.681	5.0 X 4.0	Box Culvert
3	101.901	2.0 X 3.0	Box Culvert
4	101.947	2.0 X 2.0	Box Culvert
5	102.048	2.0 X 2.0	Box Culvert
6	102.165	4.0 X 5.0	Box Culvert
7	102.283	4.0 X 5.0	Box Culvert
8	102.331	2.0 X 3.0	Box Culvert
9	102.708	2.0 X 2.0	Box Culvert
10	103.156	3.0 X 4.0	Box Culvert
11	103.307	2.0 X 3.0	Box Culvert
12	103.494	2.0 X 3.0	Box Culvert
13	103.580	4.0 X 3.0	Box Culvert
14	103.830	5.0 X 5.0	Box Culvert
15	103.860	2.0 X 2.0	Box Culvert
16	103.989	2.0 X 2.0	Box Culvert
17	104.032	2.0 X 2.0	Box Culvert
18	104.176	4.0 X 3.0	Box Culvert
19	104.400	4.0 X 3.0	Box Culvert
20	104.558	3.0 X 4.0	Box Culvert
21	104.647	2.0 X 2.0	Box Culvert
22	104.967	2.0 X 2.0	Box Culvert
23	105.087	2.0 X 2.0	Box Culvert
24	105.172	4.0 X 3.0	Box Culvert
25	105.276	2.0 X 2.0	Box Culvert
26	105.493	5.0 X 4.0	Box Culvert
27	105.598	2.0 X 2.0	Box Culvert
28	105.833	2.0 X 3.0	Box Culvert
29	105.980	2.0 X 2.0	Box Culvert
30	106.154	5.0 X 5.0	Box Culvert
31	106.235	2.0 X 3.0	Box Culvert
32	106.300	2.0 X 3.0	Box Culvert
33	106.395	2.0 X 2.0	Box Culvert
34	106.454	4.0 X 5.0	Box Culvert
35	106.580	2.0 X 2.0	Box Culvert
36	106.855	2.0 X 2.0	Box Culvert
37	107.015	2.0 X 3.0	Box Culvert
38	107.256	5.0 X 3.0	Box Culvert
39	107.332	2.0 X 2.0	Box Culvert
40	107.494	2.0 X 2.0	Box Culvert
41	107.465	2.0 X 2.0	Box Culvert
42	107.699	2.0 X 2.0	Box Culvert

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
43	107.755	2.0 X 3.0	Box Culvert
44	107.837	2.0 X 2.0	Box Culvert
45	107.918	4.0 X 5.0	Box Culvert
46	107.980	2.0 X 2.0	Box Culvert
47	108.018	2.0 X 2.0	Box Culvert
48	108.206	5.0 X 5.0	Box Culvert
49	108.307	2.0 X 2.0	Box Culvert
50	108.561	2.0 X 3.0	Box Culvert
51	108.696	2.0 X 2.0	Box Culvert
52	108.882	2.0 X 2.0	Box Culvert
53	108.972	2.0 X 2.0	Box Culvert
54	109.033	2.0 X 3.0	Box Culvert
55	109.128	2.0 X 2.0	Box Culvert
56	109.222	5.0 X 3.0	Box Culvert
57	109.419	4.0 X 4.0	Box Culvert
58	109.769	2.0 X 2.0	Box Culvert
59	109.817	5.0 X 4.0	Box Culvert
60	109.893	2.0 X 2.0	Box Culvert
61	109.947	2.0 X 2.0	Box Culvert
62	110.218	3.0 X 4.0	Box Culvert
63	110.336	2.0 X 2.0	Box Culvert
64	110.514	5.0 X 5.0	Box Culvert
65	110.700	2.0 X 2.0	Box Culvert
66	110.968	2.0 X 2.0	Box Culvert
67	111.156	2.0 X 3.0	Box Culvert
68	111.298	2.0 X 2.0	Box Culvert
69	111.468	2.0 X 3.0	Box Culvert
70	111.960	2.0 X 2.0	Box Culvert
71	112.310	3.0 X 3.0	Box Culvert
72	112.588	2.0 X 2.0	Box Culvert
73	112.661	2.0 X 3.0	Box Culvert
74	112.920	2.0 X 3.0	Box Culvert
75	113.033	2.0 X 2.0	Box Culvert
76	113.147	2.0 X 2.0	Box Culvert
77	113.542	3.0 X 3.0	Box Culvert
78	113.698	5.0 X 3.0	Box Culvert
79	113.842	2.0 X 3.0	Box Culvert
80	114.253	2.0 X 3.0	Box Culvert
81	114.355	2.0 X 2.0	Box Culvert
82	114.452	2.0 X 3.0	Box Culvert
83	114.669	3.0 X 4.0	Box Culvert
84	114.786	2.0 X 2.0	Box Culvert
85	114.963	2.0 X 2.0	Box Culvert
86	115.237	2.0 X 2.0	Box Culvert
87	115.464	2.0 X 2.0	Box Culvert

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
88	115.583	2.0 X 3.0	Box Culvert
89	115.721	2.0 X 2.0	Box Culvert
90	115.867	2.0 X 3.0	Box Culvert
91	116.043	2.0 X 2.0	Box Culvert
92	116.304	3.0 X 3.0	Box Culvert
93	116.635	2.0 X 2.0	Box Culvert
94	116.721	2.0 X 2.0	Box Culvert
95	116.859	2.0 X 2.0	Box Culvert
96	117.005	2.0 X 3.0	Box Culvert
97	117.368	2.0 X 2.0	Box Culvert
98	117.458	2.0 X 2.0	Box Culvert
99	117.758	2.0 X 2.0	Box Culvert
100	117.993	2.0 X 2.0	Box Culvert
101	118.559	2.0 X 2.0	Box Culvert
102	118.656	2.0 X 2.0	Box Culvert
103	119.005	2.0 X 2.0	Box Culvert
104	119.095	2.0 X 2.0	Box Culvert
105	119.291	2.0 X 2.0	Box Culvert
106	119.482	2.0 X 2.0	Box Culvert
107	119.649	2.0 X 3.0	Box Culvert
108	119.794	2.0 X 2.0	Box Culvert
109	119.962	2.0 X 2.0	Box Culvert
110	120.005	2.0 X 2.0	Box Culvert
111	120.049	2.0 X 2.0	Box Culvert
112	120.124	2.0 X 2.0	Box Culvert
113	120.324	2.0 X 2.0	Box Culvert
114	120.389	2.0 X 2.0	Box Culvert
115	120.507	2.0 X 2.0	Box Culvert
116	120.639	2.0 X 3.0	Box Culvert
117	120.733	2.0 X 2.0	Box Culvert
118	120.858	2.0 X 2.0	Box Culvert
119	120.885	2.0 X 2.0	Box Culvert
120	120.938	2.0 X 2.0	Box Culvert
121	121.056	2.0 X 2.0	Box Culvert
122	121.243	2.0 X 2.0	Box Culvert
123	121.326	3.0 X 3.0	Box Culvert
124	121.541	2.0 X 2.0	Box Culvert
125	121.642	2.0 X 2.0	Box Culvert
126	121.767	2.0 X 2.0	Box Culvert
127	121.906	2.0 X 2.0	Box Culvert
128	122.099	2.0 X 2.0	Box Culvert
129	122.252	2.0 X 2.0	Box Culvert
130	122.366	2.0 X 2.0	Box Culvert
131	122.530	2.0 X 3.0	Box Culvert
132	122.614	2.0 X 3.0	Box Culvert

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
133	123.161	2.0 X 2.0	Box Culvert
134	123.289	5.0 X 4.0	Box Culvert
135	124.183	2.0 X 3.0	Box Culvert
136	124.375	2.0 X 2.0	Box Culvert
137	124.435	2.0 X 2.0	Box Culvert
138	124.603	2.0 X 3.0	Box Culvert
139	124.754	2.0 X 3.0	Box Culvert
140	125.089	2.0 X 2.0	Box Culvert
141	125.233	2.0 X 2.0	Box Culvert
142	125.369	2.0 X 3.0	Box Culvert
143	125.682	3.0 X3.0	Box Culvert
144	125.845	2.0 X 3.0	Box Culvert
145	126.044	2.0 X 3.0	Box Culvert
146	126.118	2.0 X 2.0	Box Culvert
147	126.189	2.0 X 2.0	Box Culvert
148	126.655	2.0 X 3.0	Box Culvert
149	126.854	2.0 X 3.0	Box Culvert
150	126.892	2.0 X 2.0	Box Culvert
151	126.963	3.0 X 4.0	Box Culvert
152	127.047	2.0 X 2.0	Box Culvert
153	127.181	2.0 X 2.0	Box Culvert
154	127.385	2.0 X 2.0	Box Culvert
155	127.505	2.0 X 2.0	Box Culvert
156	127.543	3.0 X 4.0	Box Culvert
157	127.795	2.0 X 2.0	Box Culvert
158	128.126	2.0 X 3.0	Box Culvert
159	128.351	2.0 X 3.0	Box Culvert
160	128.419	4.0 X 5.0	Box Culvert
161	128.657	2.0 X 3.0	Box Culvert
162	128.749	2.0 X 3.0	Box Culvert
163	128.999	3.0 X 4.0	Box Culvert
164	129.254	4.0 X 5.0	Box Culvert
165	129.375	5.0 X 3.0	Box Culvert
166	129.427	2.0 X 3.0	Box Culvert
167	129.469	3.0 X 3.0	Box Culvert
168	129.689	2.0 X 2.0	Box Culvert
169	129.854	3.0 X 4.0	Box Culvert
170	129.983	3.0 X 4.0	Box Culvert
171	130.132	2.0 X 3.0	Box Culvert
172	130.372	2.0 X 3.0	Box Culvert
173	130.599	2.0 X 2.0	Box Culvert
174	130.773	2.0 X 3.0	Box Culvert
175	131.126	3.0 X 4.0	Box Culvert

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

(c) Widening of existing culverts:

AllexistingculvertswhicharenottobereconstructedshallbewidenedtotheRoadway width of the Project Highway as per the typical cross section given in provision of the relevant Manual. Repairs and strengthening of existing structures where required shall be carried out.

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

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

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	102.925	2.0 X 2.0	Box Culvert
2	111.770	2.0 X 2.0	Box Culvert
3	113.325	2.0 X 2.0	Box Culvert
4	122.850	2.0 X 2.0	Box Culvert
5	124.944	2.0 X 2.0	Box Culvert
6	130.944	2.0 X 2.0	Box Culvert

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

[Refer provision of the relevant Manualand provide details]

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

(e) 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 (km)	Salient details of existing bridge		Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Remarks
		Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)		
1	110+794	RCC Slab	1 x6 M	Insufficient width and not conform to IRC Loading	Proposed as RCC SLAB (1 X 10m)
2	129+184	RCC Slab	1x13 M	Insufficient width and not conform to IRC Loading	Proposed as RCC T Girder (1 X 16m)

(ii) The following narrow bridges shall be widened:

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

(b) Additional new bridges

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

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

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

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

[Refer provision of the relevant Manualand provide details:]

Sl. No.	Location at km	Remarks
Nil		

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

[Refer to provision of the relevant Manualand provide details]

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

(e) Drainage system for bridge decks

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

(f) Structures in marine environment

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

(v) Rail-road bridges

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

(b) Road over-bridges

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

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

(c) Road under-bridges

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

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

(v) Grade separated structures

[Refer provision of the relevant Manual]

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

(vi) Repairs and strengthening of bridges and structures

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

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

(a) Bridges

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

(b)ROB / RUB

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

(c) Overpasses/Underpasses and other structures

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

(vii) List of Major Bridges and Structures

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

Sl. No.	Location (Km)
Nil	

8. Traffic Control Devices and Road Safety Works

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

Sl. No	Traffic Signages, Road Marking and other appurtenances	Quantity	unit
1	Total No of Street Light=	82.2	Nos
2	Kilometer stones=	28	Nos
3	5th Kilometer stones=	7	Nos
4	Boundary Stones=	354	Nos
5	Delineators (100 cm long and circular shaped)+Hazard marker =	3290	Nos
6	Road Stud=	16491	Nos
7	900 mm Octagonal	14	Nos
8	600 mm circular	56	Nos
9	900 mm Tringular	381	Nos
10	800 mm x 600 mm rectangular	4	Nos
11	Rumble Strip=	500	sqm

(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) Hydro seeding

Total Area of Hydroseeding= 30638 sqm

12. Special Requirement for Hill Roads

a) Retaining Wall

Chainage (m)		Length of CD (m)	Net Length (m)	TCS No.	Side	Avg. Height (m)
From	To					
101480	101530	0	50.0	TCS-4	Valley	2
101875	101950	5.3	69.7	TCS-4	Valley	2
102350	102400	0	50.0	TCS-4	Valley	2
102625	102700	0	75.0	TCS-11	Valley	2
103640	103700	0	60.0	TCS-4	Valley	2
104000	104050	2.6	47.4	TCS-4	Valley	2
104270	104320	0	50.0	TCS-4	Valley	2
107600	107680	0	80.0	TCS-4	Valley	2
107740	107790	2.7	47.3	TCS-4	Valley	2
109930	109980	2.6	47.4	TCS-4	Valley	2
110325	110400	2.6	72.4	TCS-4	Valley	2
113530	113625	3.84	91.2	TCS-4	Valley	2
113800	113900	2.7	97.3	TCS-4	Valley	2
115790	115850	0	60.0	TCS-4	Valley	2
116030	116085	2.6	52.4	TCS-4	Valley	2
116775	116825	0	50.0	TCS-4	Valley	2
121450	121500	0	50.0	TCS-4	Valley	2
122000	122050	0	50.0	TCS-4	Valley	3
122315	122435	2.6	117.4	TCS-4	Valley	2
122705	122805	0	100.0	TCS-4	Valley	2
124025	124125	0	100.0	TCS-4	Valley	2
125015	125065	0	50.0	TCS-4	Valley	2
126575	126625	0	50.0	TCS-4	Valley	2
128045	128195	2.7	147.3	TCS-4	Valley	2
128745	128775	2.7	27.3	TCS-4	Valley	2
129850	129925	3.96	71.0	TCS-4	Valley	2
Total =			**1763**			

Length of 2.0 m Retaining Wall = 1713 m
Length of 3.0 m Retaining Wall = 50 m

b) Breast Wall

Chainage (m)		Length of CD	Net Length (m)	TCS No.	Side	Avg. Height (m)
From	To					
101950	102000	0	50.0	TCS-5	Hill	2
102000	102125	2.6	122.4	TCS-5A	Hill	2
102625	102700	0	75.0	TCS-11	Hill	2
105025	105120	2.6	92.4	TCS-5	Hill	2
105120	105170	0	50.0	TCS-7A	Hill	2
105220	105270	0	50.0	TCS-7A	Hill	2
105725	105900	2.7	172.3	TCS-7B	Hill	2
106030	106100	0	70.0	TCS-7B	Hill	2
106675	106775	0	100.0	TCS-5	Hill	2
106775	106850	0	75.0	TCS-5A	Hill	2
110400	110475	0	75.0	TCS-7A	Hill	2
111125	111225	2.7	97.3	TCS-7A	Hill	2
111225	111280	0	55.0	TCS-5	Hill	2
111460	111800	5.3	334.7	TCS-7	Hill	2
112150	112550	3.84	396.2	TCS-5	Hill	2
113100	113480	5.2	374.8	TCS-5	Hill	2
113975	114150	0	175.0	TCS-5	Hill	2
114150	114225	0	75.0	TCS-5A	Hill	2
114880	114960	0	80.0	TCS-5A	Hill	2
114960	115010	2.6	47.4	TCS-7A	Hill	2
115900	115950	0	50.0	TCS-7A	Hill	2
116085	116280	0	195.0	TCS-7A	Hill	2
116325	116375	0	50.0	TCS-5A	Hill	2
116375	116465	0	90.0	TCS-5	Hill	2
116465	116515	0	50.0	TCS-5A	Hill	2
117000	117050	2.7	47.3	TCS-5	Hill	2
117050	117100	0	50.0	TCS-7A	Hill	2
117550	117780	2.6	227.4	TCS-5	Hill	2
117780	117825	0	45.0	TCS-5A	Hill	2
118460	118525	0	65.0	TCS-7B	Hill	2
118525	118575	2.6	47.4	TCS-7	Hill	2
118575	118630	0	55.0	TCS-7B	Hill	2
118630	118700	2.6	67.4	TCS-7	Hill	2
118700	118760	0	60.0	TCS-7B	Hill	2
118760	118820	0	60.0	TCS-7	Hill	2
118820	118870	0	50.0	TCS-7B	Hill	2
118870	118925	0	55.0	TCS-7	Hill	2
119000	119050	2.6	47.4	TCS-7B	Hill	2
119050	119100	2.6	47.4	TCS-7	Hill	2
119100	119150	0	50.0	TCS-7B	Hill	2
119150	119200	0	50.0	TCS-7	Hill	2
119250	119375	2.6	122.4	TCS-5A	Hill	2
119570	119790	2.7	217.3	TCS-7A	Hill	2
119790	120010	7.8	212.2	TCS-7	Hill	2
120300	120400	5.2	94.8	TCS-5A	Hill	2
121650	121750	0	100.0	TCS-7A	Hill	2
123425	123675	0	250.0	TCS-7A	Hill	2

124200	124250	0	50.0	TCS-7A	Hill	2
124375	124425	0	50.0	TCS-5	Hill	2
127205	127325	0	120.0	TCS-7A	Hill	2
127550	127700	0	150.0	TCS-7A	Hill	2
130465	130595	14.5	115.5	TCS-7A	Hill	2
Total =			**5509**			

c) Metal Beam Crash Barrier

Chainage (m)		**Net Length (m)**	**Side**
From	**To**		
102550	102625	75.0	Valley
104050	104150	100.0	Valley
106900	107050	150.0	Valley
107530	107600	70.0	Valley
108700	108850	150.0	Valley
109050	109200	150.0	Valley
109500	109600	100.0	Valley
112220	112370	150.0	Valley
112050	112150	100.0	Valley
112400	112500	100.0	Valley
113350	113450	100.0	Valley
113800	113900	100.0	Valley
116150	116250	100.0	Valley
117230	117330	100.0	Valley
121800	121900	100.0	Valley
122430	122530	100.0	Valley
122920	123070	150.0	Valley
123720	123820	100.0	Valley
124640	124740	100.0	Valley
126470	126570	100.0	Valley
128220	128370	150.0	Valley
128770	128845	75.0	Valley
129320	129420	100.0	Valley
Total =		**2520.0**	

Total no. of Bridges on the project=	3 nos.
Approach length on valley side for each bridge (25 m on both side)	50 m
Hence, Crash barrier length for 3 bridges =	300 m
Therefore, total length of crash barrier =	**2820 m**

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 based on detailed investigations shall be determined by the Contractor in accordance with the Specifications and Standards. Any

variations in the lengths specified in this Schedule- B shall not constitute a Change of Scope save and except any variations in the length arising out of a Change of Scope expressly under taken in accordance with the provisions of Article 13.

(Schedule-B1)

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

Sheet-II (Annexure-I to Schedule-B1)

Utility Shifting.

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

Notes:

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

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

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

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

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

Schedule - C

(See Clause 2.1)

Project Facilities

1. Project Facilities

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

(a) Toll plaza[s]

(b) Roadside furniture;

(c) Pedestrian facilities;

(d) Truck Lay byes;

(e) Bus-bays and passenger shelters;

(f) Rest areas; and

(g) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza: -

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

b) Roadside furniture: -

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

C) Pedestrian Facility:-

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

d) Truck Lay bye:-

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

e) Bus Bay & Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Design Requirements	Other Essential Details
1	Bus Bay & Passenger shelter	105+760 (Both Side)	Bus Bays & Passenger shelter have been placed on both side of proposed roadway	Dimension of Bus Bay (L X B = 59.0 m X 3.0 m) Dimension of Passenger Shelter (L X B = 6.0 m X 2.0 m) (Refer Passenger Shelter Drawing)
2	Bus Bay & Passenger shelter	118+820 (Both Side)		
3	Bus Bay & Passenger shelter	130+840 (Both Side)		

f) Rest Areas

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

g) Others to be specified

Street Lighting:
Total 329 Nos. Street lighting shall be provided in built-up areas, bus bays and passenger shelters locations.

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

Schedule - D

(See Clause 2.1)

Specifications and Standards

1. Construction

The Contractor shall comply with the Specifications and Standards set forth in Annex- I of this Schedule-D for construction of the Project Highway.

2. Design Standards

The Project Highway including Project Facilities shall conform to design requirements set out in the following documents:

[Manual of Specifications and Standards for Two Lanning of Highways (IRC: SP: 73-2018), referred to herein as the Manual]

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

Annex – I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for [Two-Lanning of Highways (IRC:SP:73-2018)], referred to as the Manual, and MORTH Specifications for Road and Bridge Works. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer.

2. Deviations from the Specifications and Standards

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

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

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

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

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

Sl. No.	Stretch	Type of Deficiency	Remarks
1	101.325 to 101.381	Sharp Bend	Design Speed = 30kmph
2	101.543 to 101.608	Sharp Bend	Design Speed = 30kmph
3	101.653 to 101.665	Sharp Bend	Design Speed = 30kmph
4	101.707 to 101.734	Sharp Bend	Design Speed = 30kmph
5	101.77 to 101.778	Sharp Bend	Design Speed = 30kmph
6	101.854 to 101.863	Sharp Bend	Design Speed = 30kmph
7	102.169 to 102.185	Sharp Bend	Design Speed = 30kmph
8	102.222 to 102.254	Sharp Bend	Design Speed = 30kmph
9	102.294 to 102.324	Sharp Bend	Design Speed = 30kmph
10	102.423 to 102.43	Sharp Bend	Design Speed = 30kmph
11	102.491 to 102.511	Sharp Bend	Design Speed = 30kmph
12	102.597 to 102.651	Sharp Bend	Design Speed = 30kmph
13	102.71 to 102.714	Sharp Bend	Design Speed = 30kmph
14	102.759 to 102.776	Sharp Bend	Design Speed = 30kmph
15	102.817 to 102.825	Sharp Bend	Design Speed = 30kmph
16	102.865 to 102.892	Sharp Bend	Design Speed = 30kmph
17	102.944 to 103.026	Sharp Bend	Design Speed = 30kmph
18	103.062 to 103.078	Sharp Bend	Design Speed = 30kmph
19	103.133 to 103.18	Sharp Bend	Design Speed = 30kmph
20	103.572 to 103.656	Sharp Bend	Design Speed = 30kmph
21	103.829 to 103.866	Sharp Bend	Design Speed = 30kmph
22	104.095 to 104.107	Sharp Bend	Design Speed = 30kmph
23	104.164 to 104.168	Sharp Bend	Design Speed = 30kmph
24	104.204 to 104.256	Sharp Bend	Design Speed = 30kmph
25	104.364 to 104.424	Sharp Bend	Design Speed = 30kmph
26	104.485 to 104.488	Sharp Bend	Design Speed = 30kmph
27	104.55 to 104.564	Sharp Bend	Design Speed = 30kmph
28	104.684 to 104.686	Sharp Bend	Design Speed = 30kmph
29	104.712 to 104.742	Sharp Bend	Design Speed = 30kmph
30	104.78 to 104.809	Sharp Bend	Design Speed = 30kmph
31	104.854 to 104.863	Sharp Bend	Design Speed = 30kmph
32	104.898 to 104.921	Sharp Bend	Design Speed = 30kmph
33	104.966 to 104.978	Sharp Bend	Design Speed = 30kmph
34	105.059 to 105.065	Sharp Bend	Design Speed = 30kmph
35	105.109 to 105.137	Sharp Bend	Design Speed = 30kmph
36	105.174 to 105.182	Sharp Bend	Design Speed = 30kmph
37	105.499 to 105.507	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
38	106.353 to 106.362	Sharp Bend	Design Speed = 30kmph
39	106.446 to 106.497	Sharp Bend	Design Speed = 30kmph
40	106.571 to 106.608	Sharp Bend	Design Speed = 20kmph
41	106.953 to 107	Sharp Bend	Design Speed = 30kmph
42	107.065 to 107.081	Sharp Bend	Design Speed = 30kmph
43	107.229 to 107.283	Sharp Bend	Design Speed = 30kmph
44	107.335 to 107.345	Sharp Bend	Design Speed = 30kmph
45	107.393 to 107.396	Sharp Bend	Design Speed = 30kmph
46	107.449 to 107.459	Sharp Bend	Design Speed = 30kmph
47	107.921 to 107.941	Sharp Bend	Design Speed = 30kmph
48	107.992 to 108.003	Sharp Bend	Design Speed = 30kmph
49	108.051 to 108.139	Sharp Bend	Design Speed = 30kmph
50	108.195 to 108.227	Sharp Bend	Design Speed = 30kmph
51	108.258 to 108.264	Sharp Bend	Design Speed = 30kmph
52	108.595 to 108.636	Sharp Bend	Design Speed = 30kmph
53	108.682 to 108.694	Sharp Bend	Design Speed = 30kmph
54	108.745 to 108.811	Sharp Bend	Design Speed = 30kmph
55	109.069 to 109.15	Sharp Bend	Design Speed = 30kmph
56	109.397 to 109.437	Sharp Bend	Design Speed = 20kmph
57	109.518 to 109.56	Sharp Bend	Design Speed = 30kmph
58	109.582 to 109.6	Sharp Bend	Design Speed = 30kmph
59	109.631 to 109.646	Sharp Bend	Design Speed = 30kmph
60	109.765 to 109.825	Sharp Bend	Design Speed = 30kmph
61	109.891 to 109.916	Sharp Bend	Design Speed = 30kmph
62	109.962 to 109.976	Sharp Bend	Design Speed = 30kmph
63	110.392 to 110.439	Sharp Bend	Design Speed = 30kmph
64	110.497 to 110.532	Sharp Bend	Design Speed = 30kmph
65	110.612 to 110.642	Sharp Bend	Design Speed = 30kmph
66	110.773 to 110.826	Sharp Bend	Design Speed = 30kmph
67	110.887 to 110.918	Sharp Bend	Design Speed = 30kmph
68	111.016 to 111.024	Sharp Bend	Design Speed = 30kmph
69	111.071 to 111.082	Sharp Bend	Design Speed = 30kmph
70	111.13 to 111.181	Sharp Bend	Design Speed = 30kmph
71	111.226 to 111.236	Sharp Bend	Design Speed = 30kmph
72	111.287 to 111.306	Sharp Bend	Design Speed = 30kmph
73	111.388 to 111.421	Sharp Bend	Design Speed = 30kmph
74	111.452 to 111.482	Sharp Bend	Design Speed = 30kmph
75	111.512 to 111.528	Sharp Bend	Design Speed = 30kmph
76	111.587 to 111.609	Sharp Bend	Design Speed = 30kmph
77	111.655 to 111.675	Sharp Bend	Design Speed = 30kmph
78	111.721 to 111.728	Sharp Bend	Design Speed = 30kmph
79	112.09 to 112.093	Sharp Bend	Design Speed = 30kmph
80	112.148 to 112.16	Sharp Bend	Design Speed = 30kmph
81	112.283 to 112.308	Sharp Bend	Design Speed = 30kmph
82	112.565 to 112.567	Sharp Bend	Design Speed = 30kmph
83	112.599 to 112.628	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
84	112.658 to 112.68	Sharp Bend	Design Speed = 30kmph
85	112.745 to 112.788	Sharp Bend	Design Speed = 30kmph
86	112.905 to 112.911	Sharp Bend	Design Speed = 30kmph
87	112.962 to 112.966	Sharp Bend	Design Speed = 30kmph
88	113.022 to 113.043	Sharp Bend	Design Speed = 30kmph
89	113.093 to 113.101	Sharp Bend	Design Speed = 30kmph
90	113.157 to 113.159	Sharp Bend	Design Speed = 30kmph
91	113.215 to 113.235	Sharp Bend	Design Speed = 30kmph
92	113.271 to 113.308	Sharp Bend	Design Speed = 30kmph
93	113.359 to 113.429	Sharp Bend	Design Speed = 30kmph
94	113.476 to 113.532	Sharp Bend	Design Speed = 30kmph
95	113.685 to 113.712	Sharp Bend	Design Speed = 30kmph
96	113.831 to 113.879	Sharp Bend	Design Speed = 30kmph
97	113.928 to 113.932	Sharp Bend	Design Speed = 30kmph
98	113.971 to 113.992	Sharp Bend	Design Speed = 30kmph
99	114.048 to 114.078	Sharp Bend	Design Speed = 30kmph
100	115.933 to 115.942	Sharp Bend	Design Speed = 30kmph
101	115.995 to 116.051	Sharp Bend	Design Speed = 30kmph
102	116.087 to 116.113	Sharp Bend	Design Speed = 20kmph
103	116.162 to 116.165	Sharp Bend	Design Speed = 30kmph
104	116.209 to 116.224	Sharp Bend	Design Speed = 30kmph
105	116.708 to 116.734	Sharp Bend	Design Speed = 30kmph
106	116.876 to 116.899	Sharp Bend	Design Speed = 30kmph
107	116.944 to 116.951	Sharp Bend	Design Speed = 30kmph
108	117.007 to 117.033	Sharp Bend	Design Speed = 30kmph
109	117.276 to 117.304	Sharp Bend	Design Speed = 30kmph
110	118.924 to 119.05	Sharp Bend	Design Speed = 30kmph
111	119.096 to 119.114	Sharp Bend	Design Speed = 30kmph
112	119.284 to 119.343	Sharp Bend	Design Speed = 30kmph
113	119.443 to 119.458	Sharp Bend	Design Speed = 30kmph
114	119.499 to 119.523	Sharp Bend	Design Speed = 30kmph
115	119.571 to 119.605	Sharp Bend	Design Speed = 30kmph
116	119.66 to 119.667	Sharp Bend	Design Speed = 30kmph
117	119.77 to 119.8	Sharp Bend	Design Speed = 20kmph
118	119.877 to 119.92	Sharp Bend	Design Speed = 20kmph
119	119.962 to 119.987	Sharp Bend	Design Speed = 20kmph
120	120.069 to 120.139	Sharp Bend	Design Speed = 30kmph
121	120.199 to 120.245	Sharp Bend	Design Speed = 20kmph
122	120.297 to 120.383	Sharp Bend	Design Speed = 30kmph
123	120.436 to 120.448	Sharp Bend	Design Speed = 30kmph
124	120.506 to 120.517	Sharp Bend	Design Speed = 30kmph
125	120.564 to 120.576	Sharp Bend	Design Speed = 30kmph
126	120.628 to 120.671	Sharp Bend	Design Speed = 30kmph
127	121.446 to 121.508	Sharp Bend	Design Speed = 30kmph
128	121.628 to 121.679	Sharp Bend	Design Speed = 30kmph
129	121.826 to 121.846	Sharp Bend	Design Speed = 30kmph

Sl. No.	Stretch	Type of Deficiency	Remarks
130	121.892 to 121.93	Sharp Bend	Design Speed = 30kmph
131	122.429 to 122.487	Sharp Bend	Design Speed = 30kmph
132	123.499 to 123.543	Sharp Bend	Design Speed = 30kmph
133	123.907 to 123.947	Sharp Bend	Design Speed = 20kmph
134	124.025 to 124.061	Sharp Bend	Design Speed = 20kmph
135	124.322 to 124.333	Sharp Bend	Design Speed = 30kmph
136	124.391 to 124.419	Sharp Bend	Design Speed = 30kmph
137	124.536 to 124.548	Sharp Bend	Design Speed = 30kmph
138	124.599 to 124.613	Sharp Bend	Design Speed = 30kmph
139	124.669 to 124.713	Sharp Bend	Design Speed = 30kmph
140	124.76 to 124.771	Sharp Bend	Design Speed = 30kmph
141	124.871 to 124.885	Sharp Bend	Design Speed = 30kmph
142	125.14 to 125.148	Sharp Bend	Design Speed = 30kmph
143	125.185 to 125.194	Sharp Bend	Design Speed = 30kmph
144	125.24 to 125.243	Sharp Bend	Design Speed = 30kmph
145	126.181 to 126.184	Sharp Bend	Design Speed = 30kmph
146	126.227 to 126.236	Sharp Bend	Design Speed = 30kmph
147	126.286 to 126.293	Sharp Bend	Design Speed = 30kmph
148	126.334 to 126.356	Sharp Bend	Design Speed = 30kmph
149	126.418 to 126.45	Sharp Bend	Design Speed = 30kmph
150	126.502 to 126.544	Sharp Bend	Design Speed = 20kmph
151	126.584 to 126.627	Sharp Bend	Design Speed = 30kmph
152	126.647 to 126.65	Sharp Bend	Design Speed = 30kmph
153	126.691 to 126.706	Sharp Bend	Design Speed = 30kmph
154	127.842 to 127.858	Sharp Bend	Design Speed = 30kmph
155	127.989 to 128.03	Sharp Bend	Design Speed = 20kmph
156	128.082 to 128.111	Sharp Bend	Design Speed = 30kmph
157	128.271 to 128.3	Sharp Bend	Design Speed = 30kmph
158	128.406 to 128.448	Sharp Bend	Design Speed = 30kmph
159	128.793 to 128.805	Sharp Bend	Design Speed = 30kmph
160	129.197 to 129.259	Sharp Bend	Design Speed = 30kmph
161	129.35 to 129.402	Sharp Bend	Design Speed = 30kmph
162	129.463 to 129.489	Sharp Bend	Design Speed = 30kmph
163	129.611 to 129.621	Sharp Bend	Design Speed = 30kmph
164	129.686 to 129.703	Sharp Bend	Design Speed = 30kmph
165	129.788 to 129.8	Sharp Bend	Design Speed = 30kmph
166	129.859 to 129.871	Sharp Bend	Design Speed = 30kmph
167	130.273 to 130.283	Sharp Bend	Design Speed = 30kmph
168	130.432 to 130.449	Sharp Bend	Design Speed = 30kmph
169	130.513 to 130.562	Sharp Bend	Design Speed = 30kmph
170	130.697 to 130.716	Sharp Bend	Design Speed = 30kmph
171	131.24 to 131.248	Sharp Bend	Design Speed = 30kmph

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

Sl No	Chainage		RADIUS (M)
	From (km)	To(km)	
806	101.325	101.381	30
807	101.543	101.608	30
808	101.653	101.665	30
810	101.770	101.778	30
811	101.854	101.863	30
813	101.985	102.032	50
814	102.169	102.185	30
816	102.294	102.324	30
817	102.423	102.430	30
818	102.491	102.511	40
819	102.597	102.651	30
820	102.710	102.714	50
821	102.759	102.776	50
822	102.817	102.825	50
823	102.865	102.892	50
824	102.944	103.026	60
825	103.062	103.078	50
826	103.133	103.180	30
827	103.249	103.266	60
829	103.572	103.656	37
830	103.829	103.866	30
832	103.982	104.016	60
833	104.095	104.107	30
834	104.164	104.168	50
835	104.204	104.256	30
836	104.364	104.424	35
837	104.485	104.488	30
838	104.550	104.564	30
839	104.684	104.686	40
841	104.780	104.809	30
843	104.898	104.921	40
844	104.966	104.978	50
846	105.059	105.065	30
848	105.174	105.182	30
849	105.382	105.414	50
850	105.499	105.507	30
851	105.567	105.577	70
852	105.649	105.694	50
853	105.816	105.958	60
854	106.139	106.218	50
855	106.353	106.362	30
856	106.446	106.497	30
857	106.571	106.608	20
858	106.752	106.777	50
859	106.953	107.000	30

Sl No	Chainage		RADIUS (M)
	From (km)	To(km)	
860	107.065	107.081	40
862	107.229	107.283	30
863	107.335	107.345	50
864	107.393	107.396	40
865	107.449	107.459	40
867	107.562	107.593	50
869	107.733	107.781	60
871	107.921	107.941	60
872	107.992	108.003	30
873	108.051	108.139	60
874	108.195	108.227	30
876	108.305	108.343	50
878	108.595	108.636	50
879	108.682	108.694	40
880	108.745	108.811	40
881	108.932	108.958	70
882	109.069	109.150	45
883	109.212	109.237	60
884	109.397	109.437	20
885	109.518	109.560	50
887	109.631	109.646	30
888	109.765	109.825	30
889	109.891	109.916	30
890	109.962	109.976	60
892	110.205	110.234	50
893	110.392	110.439	40
894	110.497	110.532	30
895	110.612	110.642	30
896	110.773	110.826	30
897	110.887	110.918	30
899	111.071	111.082	30
900	111.130	111.181	30
901	111.226	111.236	30
902	111.287	111.306	50
903	111.388	111.421	30
904	111.452	111.482	30
905	111.512	111.528	60
906	111.587	111.609	30
907	111.655	111.675	60
908	111.721	111.728	30
911	111.973	112.029	70
912	112.090	112.093	30
913	112.148	112.160	40
915	112.283	112.308	30
916	112.414	112.457	50
917	112.565	112.567	30

Sl No	Chainage		RADIUS (M)
	From (km)	To(km)	
919	112.658	112.680	30
920	112.745	112.788	30
921	112.905	112.911	40
922	112.962	112.966	40
923	113.022	113.043	30
924	113.093	113.101	50
925	113.157	113.159	40
926	113.215	113.235	30
928	113.359	113.429	50
929	113.476	113.532	40
931	113.685	113.712	30
932	113.831	113.879	40
933	113.928	113.932	50
934	113.971	113.992	60
935	114.048	114.078	30
936	114.297	114.320	70
938	114.442	114.446	50
939	114.587	114.612	70
940	114.814	114.823	50
944	115.725	115.743	50
945	115.933	115.942	30
946	115.995	116.051	60
947	116.087	116.113	20
948	116.162	116.165	50
949	116.209	116.224	50
950	116.285	116.329	70
954	116.708	116.734	30
955	116.801	116.823	60
956	116.876	116.899	60
957	116.944	116.951	30
958	117.007	117.033	40
961	117.276	117.304	30
962	117.450	117.459	50
963	117.532	117.563	70
965	117.979	118.105	70
966	118.192	118.230	50
968	118.317	118.342	50
970	118.618	118.673	50
971	118.748	118.764	60
972	118.867	118.878	70
973	118.924	119.050	60
974	119.096	119.114	30
975	119.185	119.198	60
976	119.284	119.343	30
977	119.443	119.458	40
978	119.499	119.523	60

Sl No	Chainage		RADIUS (M)
	From (km)	To(km)	
979	119.571	119.605	30
980	119.660	119.667	40
982	119.877	119.920	25
984	120.069	120.139	40
985	120.199	120.245	23
986	120.297	120.383	50
987	120.436	120.448	40
988	120.506	120.517	40
989	120.564	120.576	50
990	120.628	120.671	30
992	120.848	120.857	60
997	121.446	121.508	30
998	121.628	121.679	30
999	121.826	121.846	30
1000	121.892	121.930	60
1005	122.429	122.487	40
1006	122.609	122.630	50
1009	122.971	123.006	60
1010	123.222	123.276	50
1011	123.378	123.384	50
1012	123.499	123.543	30
1013	123.710	123.808	55
1014	123.907	123.947	20
1015	124.025	124.061	20
1016	124.172	124.222	50
1017	124.322	124.333	40
1018	124.391	124.419	30
1019	124.536	124.548	30
1020	124.599	124.613	60
1021	124.669	124.713	40
1022	124.760	124.771	50
1024	124.871	124.885	40
1027	125.185	125.194	50
1028	125.240	125.243	40
1034	125.875	125.888	60
1035	125.970	125.982	70
1038	126.227	126.236	40
1039	126.286	126.293	40
1041	126.418	126.450	40
1042	126.502	126.544	20
1045	126.691	126.706	40
1050	127.842	127.858	30
1051	127.989	128.030	20
1052	128.082	128.111	30
1053	128.271	128.300	30
1054	128.406	128.448	30

Sl No	Chainage		RADIUS (M)
	From (km)	To(km)	
1055	128.528	128.572	50
1057	128.793	128.805	30
1058	128.993	129.033	50
1059	129.197	129.259	30
1060	129.350	129.402	30
1061	129.463	129.489	30
1062	129.611	129.621	50
1063	129.686	129.703	30
1064	129.788	129.800	30
1065	129.859	129.871	40
1069	130.273	130.283	40
1070	130.432	130.449	40
1071	130.513	130.562	40
1072	130.697	130.716	30
1074	130.999	131.046	70
1076	131.240	131.248	30

(iii) [Note 1: Deviations from the aforesaid Specifications and Standards shall be listed out here. Such deviations shall be specified only if they are considered essential in view of project-specific requirements.]

Schedule - H

(See Clauses 10.1 (iv) and 19.3)

Contract Price Weightages

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

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

Item	Weightage in % of CP	Stage for Payment	Percentage
1	2	3	4
Road Works including Culverts, widening and repair of culverts	81.75 %	**A- Widening and strengthening of existing road**	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Non bituminous Base course	[Nil]
		(4) Bituminous Basecourse	[Nil]
		(5) Wearing Coat	[Nil]
		(6) Widening and repair of culverts	[Nil]
		B.1-Reconstruction/New 2-Lane Realignment /Bypass (Flexible Pavement)	
		(1) Earthwork up to top of the sub- grade	33.89%
		(2) Sub-base Course	13.39%
		(3) Non bituminous Base course	14.84%
		(4) Bituminous Basecourse	14.1%
		(5) Wearing Coat	8.11%
		B.2-Reconstruction/New 8-Lane Realignment/ Bypass (Rigid Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Dry Lean Concrete (DLC) Course	[Nil]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		C.1-Reconstruction/ New Service Road (Flexible Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Non bituminous Base course	[Nil]
		(4) Bituminous Basecourse	[Nil]
		(5) Wearing Coat	[Nil]
		C.2- Reconstruction/New Service road (Rigid Pavement)	
		(1) Earthwork up to top of the sub- grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) Dry Lean Concrete (DLC) Course	[Nil]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		D- Reconstruction & New Culverts on existing road, realignments, bypasses Culverts (length <6m)	15.67%
Minor bridge/	0.98%	**A.1-widening and repairing of Minor Bridges**	

Item	Weightage in % of CP	Stage for Payment	Percentage
Underpasses/ Overpasses		**(length >6 m&<60m)**	
		Minor Bridges	[Nil]
		A.2- New Minor bridges (length >6 mand<60m)	
		(1) Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	48.31%
		(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.	46.53%
		(3) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	5.16%
		(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]
		B.1- Widening and repairs of underpasses/overpasses	
		Underpasses/ Overpasses	[Nil]
		B.2-NewUnderpasses/Overpasses	
		(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/pier cap.	[Nil]
		(2)Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	[Nil]
		(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]
Major bridge(length>60 m) works and ROB/RUB/elevated sections/flyovers including viaducts, if any	0.00 %	**A.1- Widening and repairs of Major Bridges**	
		(1)Foundation	[Nil]
		(2)Sub-structure	[Nil]
		(3)Super-structure(including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/return walls	[Nil]

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

Item	Weightage in % of CP	Stage for Payment	Percentage
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]
		C.2- New Elevated Section/Flyovers/Grade Separators	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3)Super-Structure(Including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]
		(6) Wing walls/Return walls	[Nil]
		(7)Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	[Nil]
Other Works	17.27 %	(i) Toll Plaza	[Nil]
		(ii) Road side drains	26.33%
		(iii) Road signs, markings, km stones, safety devices etc	6.5%
		(iv) Project facilities	
		a) Bus Bays	1.93%
		b) Truck Lay-byes	[Nil]
		c) Passenger Shelter	0.29%
		d) Rest Area	[Nil]
		e) Diversion Works	1.55%
		(v) Road side Plantation	[Nil]
		(vi) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[Nil]
		(vii) Safety &Traffic Management during const.	[Nil]
		(viii) Breast Wall	41.33%
		(ix) Toe Wall	[Nil]
		(x) Retaining Wall	10.48%
		(xi) Crash Barrier	2.2%
		(xi) Boundary wall	[Nil]
		(xii) Site Clearance & Dismantling	5.03%
		(xiii) Protection Works	2.26%
		(xiv) Utility Shifting	2.1%

1.3 Procedure of estimating the value of work done

1.3.1 Road works

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

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
A- Widening & Strengthening of road		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in a length of not less than 5(five)percent of the total length.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Base course	[Nil]	
(5) Wearing Coat	[Nil]	
(6) Widening and repair of culverts	[Nil]	Cost of ten completed culverts shall be determined on pro-rata basis with respect to the total number of culverts.
B.1- Reconstruction/New2-Lane Realignment/Bypass(Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 0.5(half) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	33.89%	
(2) Sub-base Course	13.39%	
(3) Non bituminous Base course	14.84%	
(4) Bituminous Base course	14.1%	
(5) Wearing Coat	8.11%	
B.2- Reconstruction/New 8-Lane Realignment/Bypass (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC) Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
C.1- Reconstruction/New Service Road/ Slip Road (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Basecourse	[Nil]	
(5) Wearing Coat	[Nil]	
C.2- Reconstruction/New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro-rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC)Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
D-Reconstruction & New Culverts on existing road, realignments, bypasses		Cost of each culverts shall be determined on pro-rata basis with respect to the total number of culverts. Payment shall be made on the completion of at
Culverts (length <6m)	15.67%	

Stage of Payment	Percentage weightage	Payment Procedure
		least one culverts

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

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

Where,

P = Contract Price

L = Total length in km

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

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

1.3.2 Minor Bridges and Underpasses/Overpasses.

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

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m&<60m)	Nil	Cost of each minor bridge shall be determined on pro-rata basis with respect to the total linear length of the minor bridges. Payment shall be made on the completion of widening & repair works of a minor bridge
A.2- New Minor Bridges (length > 6m & < 60m)		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	48.31%	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.	46.53%	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of

Stage of Payment	Weightage	Payment Procedure
		stage specified as above
(3)Approaches :On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	5.16%	Approaches: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified in the column of "Stage of Payment" in this sub-clause.
(4) Guide Bunds and River Training Works: On completion of Guide Bunds and river training works complete in all respects	[Nil]	Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bund sand River training Works in all respects as specified
B.1- Widening and repairs of underpasses/overpasses	[Nil]	Cost of each underpass/overpass shall be determined on pro-rata basis with respect to the total linear length of the underpasses/ overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2- New Underpasses/Overpasses		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	[Nil]	Foundation: Cost of each Underpass/ Overpass shall be determined on pro- rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of foundation of each Underpasses/ Overpasses. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super- structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	[Nil]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

1.3.3 Major Bridge works, ROB/RUB and Structures.

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

Table 1.3.3

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

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

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

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

Stage of Payment	Weightage	Payment Procedure
(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.

1.3.4 Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) Toll Plaza	[Nil]	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro-rata basis with respect to the total of all toll plaza.
(2) Roadside drains	26.33%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(3) Road signs, markings, km stones, safety devices etc.	6.5%	
(4) Project Facilities		Payment shall be made on pro-rata basis for completed facilities.
a) Bus Bays	1.93%	
b) Truck Lay-byes	[Nil]	
c) Passenger Shelter	0.29%	
d) Rest Area	[Nil]	
e) Diversion Works	1.55%	
(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	[Nil]	Unit of measurement is linear length. Payment shall be made

Stage of Payment	Weightage	Payment Procedure
bridges, elevated sections/flyover/grade separators and ROBs/ RUBs		on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(7) Safety and traffic management during construction	[Nil]	Payment shall be made on prorate basis every six months.
(8) Protection Works		Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(a) Breast Wall	41.33%	
(b) Toe Wall	[Nil]	
(c)Retaining Wall	10.48%	
(c) Crash Barrier	2.2%	
(9) Site Clearance & Dismantling	5.03%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(10) Protection Works	2.26%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.
(11) Utility Shifting	2.1%	Unit of measurement is linear length. Payment shall be made on pro-rata basis on completion of a stage in a length of not less than 5% (five percent)of the total length.

2. Procedure for payment for Maintenance

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

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