Schedules

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 TheSite

(i) Site of the [Two-Lane] Project Highway shall include the land, 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-II of thisSchedule-A.

(iii) An inventory of the Site including the land, buildings, structures, roadworks, trees and anyother immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause8.2 (i) of this Agreement.

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

(v) The status of the environment clearances obtained orawaitedisgiven in Annex-IV.

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

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

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

(iii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor,and such inventory shall form part of the memorandum referred to in Clause8.2 (i) of this Agreement.

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

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

Annex –I

(Schedule-A)

Site

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

1. Site

The PKG-1 of the project road section starts Near Chirakutaends Near Mowatari, before ChaparBypass(Survey Ch.5.580km to Ex.Ch. 25.633km)(Existing KM 901.100 to Km 921.145 of old NH-31). The Design length of the PKG-1 comes out as 17.737km (Design Ch. 0.000km to Ch. 17.737km).Thepackage comes under Dhubri district of Assam.

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

2. Land

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

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
1	5.580	5.630	901.100	901.162	0.000	0.050	20	28	48
2	5.630	5.680	901.162	901.212	0.050	0.100	28	19	47
3	5.680	5.730	901.212	901.262	0.100	0.150	27	20	47
4	5.730	5.780	901.262	901.312	0.150	0.200	25	20	45
5	5.780	5.830	901.312	901.362	0.200	0.250	23	21	44
6	5.830	5.880	901.362	901.412	0.250	0.300	22	22	44
7	5.880	5.930	901.412	901.462	0.300	0.350	20	23	43
8	5.930	5.980	901.462	901.512	0.350	0.400	18	27	45
9	5.980	6.030	901.512	901.562	0.400	0.450	19	30	49
10	6.030	6.080	901.562	901.612	0.450	0.500	20	29	49
11	6.080	6.130	901.612	901.662	0.500	0.550	17	27	44
12	6.130	6.180	901.662	901.712	0.553	0.603	17	25	42
13	6.180	6.230	901.712	901.762	0.603	0.653	20	25	45
14	6.230	6.280	901.762	901.812	0.653	0.703	21	27	48
15	6.280	6.330	901.812	901.862	0.703	0.753	23	28	51
16	6.330	6.380	901.862	901.912	0.753	0.803	23	26	49
17	6.380	6.430	901.912	901.962	0.803	0.853	23	26	49
18	6.430	6.480	901.962	902.012	0.853	0.903	23	24	47
19	6.480	6.530	902.012	902.062	0.903	0.953	23	24	47
20	6.530	6.580	902.062	902.112	0.953	1.003	26	27	53
21	6.580	6.630	902.112	902.162	1.003	1.053	26	27	53

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
22	6.630	6.680	902.162	902.212	1.053	1.103	26	25	51
23	6.680	6.730	902.212	902.262	1.103	1.153	26	25	51
24	6.730	6.780	902.262	902.312	1.153	1.203	28	23	51
25	6.780	6.830	902.312	902.362	1.203	1.253	29	25	54
26	6.830	6.880	902.362	902.412	1.253	1.303	31	26	57
27	6.880	6.933	902.412	902.462	1.303	1.353	29	24	53
28	6.933	6.985	902.462	902.512	1.353	1.403	19	31	50
29	6.985	7.035	902.512	902.562	1.403	1.453	20	32	52
30	7.035	7.080	902.562	902.610	1.453	1.500	6	6	12
31	7.080	14.480	902.562	910.018	1.500	6.938	-	-	Sonamukhi&Tilapara Bypass
32	14.480	14.510	910.018	910.050	6.938	6.968	10	8	18
33	14.510	14.560	910.050	910.100	6.968	7.018	15	9	24
34	14.560	14.610	910.100	910.150	7.018	7.068	13	8	21
35	14.610	14.660	910.150	910.200	7.068	7.118	11	7	18
36	14.660	14.710	910.200	910.250	7.118	7.168	8	8	16
37	14.710	14.760	910.250	910.300	7.168	7.218	9	10	19
38	14.760	14.810	910.300	910.350	7.218	7.268	12	9	21
39	14.810	14.860	910.350	910.400	7.268	7.318	11	6	17
40	14.860	14.910	910.400	910.450	7.318	7.368	15	6	21
41	14.910	14.960	910.450	910.500	7.368	7.418	14	8	22
42	14.960	15.010	910.500	910.550	7.418	7.468	14	6	20
43	15.010	15.060	910.550	910.600	7.468	7.518	12	6	18
44	15.060	15.110	910.600	910.650	7.518	7.568	9	9	18
45	15.110	15.160	910.650	910.700	7.568	7.618	6	12	18
46	15.160	15.210	910.700	910.750	7.618	7.668	6	12	18
47	15.210	15.260	910.750	910.800	7.668	7.718	6	12	18
48	15.260	15.310	910.800	910.850	7.718	7.768	6	8	14
49	15.310	15.360	910.850	910.900	7.768	7.818	6	8	14
50	15.360	15.410	910.900	910.950	7.818	7.868	7	21	28
51	15.410	15.460	910.950	911.000	7.868	7.918	8	25	33
52	15.460	15.510	911.000	911.050	7.918	7.968	12	25	37
53	15.510	15.560	911.050	911.100	7.968	8.018	13	18	31
54	15.560	15.610	911.100	911.150	8.018	8.068	14	9	23
55	15.610	15.660	911.150	911.200	8.068	8.118	14	17	31
56	15.660	15.710	911.200	911.250	8.118	8.168	14	15	29
57	15.710	15.760	911.250	911.300	8.168	8.218	14	14	28
58	15.760	15.810	911.300	911.350	8.218	8.268	13	14	27
59	15.810	15.860	911.350	911.400	8.268	8.318	12	17	29
60	15.860	15.910	911.400	911.450	8.318	8.368	14	16	30

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
61	15.910	15.960	911.450	911.500	8.368	8.418	10	15	25
62	15.960	16.010	911.500	911.550	8.418	8.468	12	16	28
63	16.010	16.060	911.550	911.600	8.468	8.518	12	16	28
64	16.060	16.110	911.600	911.650	8.518	8.568	11	16	27
65	16.110	16.160	911.650	911.700	8.568	8.618	13	14	27
66	16.160	16.210	911.700	911.750	8.618	8.668	17	15	32
67	16.210	16.260	911.750	911.800	8.668	8.718	16	22	38
68	16.260	16.310	911.800	911.850	8.718	8.768	16	13	29
69	16.310	16.360	911.850	911.900	8.768	8.818	13	16	29
70	16.360	16.410	911.900	911.950	8.818	8.868	11	16	27
71	16.410	16.460	911.950	912.000	8.868	8.918	12	14	26
72	16.460	16.510	912.000	912.050	8.918	8.968	10	12	22
73	16.510	16.560	912.050	912.100	8.968	9.018	13	13	26
74	16.560	16.610	912.100	912.150	9.018	9.068	15	16	31
75	16.610	16.660	912.150	912.200	9.068	9.118	17	16	33
76	16.660	16.710	912.200	912.250	9.118	9.168	16	16	32
77	16.710	16.760	912.250	912.300	9.168	9.218	15	17	32
78	16.760	16.810	912.300	912.350	9.218	9.268	15	18	33
79	16.810	16.860	912.350	912.400	9.268	9.318	11	20	31
80	16.860	16.910	912.400	912.450	9.318	9.368	13	18	31
81	16.910	16.960	912.450	912.500	9.368	9.418	9	10	19
82	16.960	17.010	912.500	912.550	9.418	9.468	11	8	19
83	17.010	17.068	912.550	912.622	9.468	9.518	9	6	15
84	17.068	18.550	912.622	914.122	9.518	10.668	-	-	Realignment Location
85	18.550	18.600	914.122	914.172	10.668	10.718	8	6	14
86	18.600	18.650	914.172	914.222	10.718	10.768	6	7	13
87	18.650	18.700	914.222	914.272	10.768	10.818	6	9	15
88	18.700	18.750	914.272	914.322	10.818	10.868	6	9	15
89	18.750	18.800	914.322	914.372	10.868	10.918	6	10	16
90	18.800	18.850	914.372	914.422	10.918	10.968	6	8	14
91	18.850	18.900	914.422	914.472	10.968	11.018	6	10	16
92	18.900	18.950	914.472	914.522	11.018	11.068	6	9	15
93	18.950	19.000	914.522	914.572	11.068	11.118	6	7	13
94	19.000	19.050	914.572	914.622	11.118	11.168	6	6	12
95	19.050	19.100	914.622	914.672	11.168	11.218	6	6	12
96	19.100	19.150	914.672	914.722	11.218	11.268	6	6	12
97	19.150	19.200	914.722	914.772	11.268	11.318	6	6	12
98	19.200	19.250	914.772	914.822	11.318	11.368	6	6	12
99	19.250	19.300	914.822	914.872	11.368	11.418	6	6	12
100	19.300	19.350	914.872	914.922	11.418	11.468	6	6	12
101	19.350	19.400	914.922	914.972	11.468	11.518	6	6	12

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
102	19.400	19.450	914.972	915.022	11.518	11.568	16	11	27
103	19.450	19.500	915.022	915.072	11.568	11.618	11	6	17
104	19.500	19.550	915.072	915.122	11.618	11.668	6	6	12
105	19.550	19.600	915.122	915.172	11.668	11.718	6	6	12
106	19.600	19.650	915.172	915.222	11.718	11.768	6	6	12
107	19.650	19.700	915.222	915.272	11.768	11.818	6	30	36
108	19.700	19.750	915.272	915.322	11.818	11.868	6	35	41
109	19.750	19.800	915.322	915.372	11.868	11.918	8	33	41
110	19.800	19.850	915.372	915.422	11.918	11.968	6	41	47
111	19.850	19.900	915.422	915.472	11.968	12.018	6	48	54
112	19.900	19.950	915.472	915.522	12.018	12.068	6	47	53
113	19.950	20.000	915.522	915.572	12.068	12.118	6	45	51
114	20.000	20.050	915.572	915.622	12.118	12.168	8	25	33
115	20.050	20.100	915.622	915.672	12.168	12.218	11	29	40
116	20.100	20.150	915.672	915.722	12.218	12.268	11	25	36
117	20.150	20.200	915.722	915.772	12.268	12.318	13	21	34
118	20.200	20.250	915.772	915.822	12.318	12.368	18	17	35
119	20.250	20.300	915.822	915.872	12.368	12.418	19	15	34
120	20.300	20.350	915.872	915.922	12.418	12.468	14	14	28
121	20.350	20.400	915.922	915.972	12.468	12.518	30	6	36
122	20.400	20.450	915.972	916.022	12.518	12.568	30	6	36
123	20.450	20.500	916.022	916.072	12.568	12.618	31	10	41
124	20.500	20.550	916.072	916.122	12.618	12.668	30	9	39
125	20.550	20.600	916.122	916.172	12.668	12.718	21	19	40
126	20.600	20.650	916.172	916.222	12.718	12.768	16	21	37
127	20.650	20.700	916.222	916.272	12.768	12.818	19	25	44
128	20.700	20.750	916.272	916.322	12.818	12.868	26	13	39
129	20.750	20.800	916.322	916.372	12.868	12.918	22	12	34
130	20.800	20.850	916.372	916.422	12.918	12.968	19	11	30
131	20.850	20.900	916.422	916.472	12.968	13.018	17	16	33
132	20.900	20.950	916.472	916.522	13.018	13.068	16	18	34
133	20.950	21.000	916.522	916.572	13.068	13.118	22	19	41
134	21.000	21.050	916.572	916.622	13.118	13.168	18	21	39
135	21.050	21.100	916.622	916.672	13.168	13.218	16	24	40
136	21.100	21.150	916.672	916.722	13.218	13.268	13	33	46
137	21.150	21.200	916.722	916.772	13.268	13.318	7	23	30
138	21.200	21.250	916.772	916.822	13.318	13.368	12	22	34
139	21.250	21.300	916.822	916.872	13.368	13.418	14	20	34
140	21.300	21.350	916.872	916.922	13.418	13.468	14	25	39
141	21.350	21.400	916.922	916.972	13.468	13.518	14	26	40
142	21.400	21.450	916.972	917.022	13.518	13.568	11	24	35

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
143	21.450	21.500	917.022	917.072	13.568	13.618	10	21	31
144	21.500	21.550	917.072	917.122	13.618	13.668	9	22	31
145	21.550	21.600	917.122	917.172	13.668	13.718	10	23	33
146	21.600	21.650	917.172	917.222	13.718	13.768	9	22	31
147	21.650	21.700	917.222	917.272	13.768	13.818	8	14	22
148	21.700	21.750	917.272	917.322	13.818	13.868	9	11	20
149	21.750	21.800	917.322	917.372	13.868	13.918	12	15	27
150	21.800	21.850	917.372	917.422	13.918	13.968	12	20	32
151	21.850	21.910	917.422	917.472	13.968	14.018	17	17	34
152	21.910	21.950	917.472	917.522	14.018	14.068	15	22	37
153	21.950	22.000	917.522	917.572	14.068	14.118	14	16	30
154	22.000	22.050	917.572	917.622	14.118	14.168	14	13	27
155	22.050	22.100	917.622	917.672	14.168	14.218	14	13	27
156	22.100	22.150	917.672	917.722	14.218	14.268	13	15	28
157	22.150	22.200	917.722	917.772	14.268	14.318	14	17	31
158	22.200	22.250	917.772	917.822	14.318	14.368	14	16	30
159	22.250	22.300	917.822	917.872	14.368	14.418	14	16	30
160	22.300	22.350	917.872	917.922	14.418	14.468	14	15	29
161	22.350	22.400	917.922	917.972	14.468	14.518	14	16	30
162	22.400	22.450	917.972	918.022	14.518	14.568	16	14	30
163	22.450	22.500	918.022	918.072	14.568	14.618	18	12	30
164	22.500	22.550	918.072	918.122	14.618	14.668	18	12	30
165	22.550	22.600	918.122	918.172	14.668	14.718	16	13	29
166	22.600	22.650	918.172	918.222	14.718	14.768	14	15	29
167	22.650	22.700	918.222	918.272	14.768	14.818	14	16	30
168	22.700	22.750	918.272	918.322	14.818	14.868	14	15	29
169	22.750	22.800	918.322	918.372	14.868	14.918	13	14	27
170	22.800	22.850	918.372	918.422	14.918	14.968	14	15	29
171	22.850	22.900	918.422	918.472	14.968	15.018	13	15	28
172	22.900	22.950	918.472	918.522	15.018	15.068	14	15	29
173	22.950	23.000	918.522	918.572	15.068	15.118	16	15	31
174	23.000	23.050	918.572	918.622	15.118	15.168	15	16	31
175	23.050	23.100	918.622	918.672	15.168	15.218	15	16	31
176	23.100	23.150	918.672	918.722	15.218	15.268	14	16	30
177	23.150	23.200	918.722	918.772	15.268	15.318	14	17	31
178	23.200	23.250	918.772	918.822	15.318	15.368	15	16	31
179	23.250	23.300	918.822	918.872	15.368	15.418	18	14	32
180	23.300	23.350	918.872	918.922	15.418	15.468	20	12	32
181	23.350	23.400	918.922	918.972	15.468	15.518	-	20	20
182	23.400	23.450	918.972	919.022	15.518	15.568	-	12	12
183	23.450	23.500	919.022	919.072	15.568	15.618	-	11	11
184	23.500	23.550	919.072	919.122	15.618	15.668	-	12	12

Sl. No.	Survey Chainage(Km) Starting Chainage of Bilasipura KM 0.000		Existing Chainage as per NH-31 (km)		Design Ch. (Km)		Existing Right of Way (m)		Total EROW Width (m)
	From	To	From	To	From	To	Left	Right	
185	23.550	23.600	919.122	919.172	15.668	15.718	-	13	13
186	23.600	23.650	919.172	919.222	15.718	15.768	-	15	15
187	23.650	23.700	919.222	919.272	15.768	15.818	-	16	16
188	23.700	23.750	919.272	919.322	15.818	15.868	-	15	15
189	23.750	23.800	919.322	919.372	15.868	15.918	15	13	28
190	23.800	23.850	919.372	919.422	15.918	15.968	15	13	28
191	23.850	23.900	919.422	919.472	15.968	16.018	15	14	29
192	23.900	23.950	919.472	919.522	16.018	16.068	14	15	29
193	23.950	24.000	919.522	919.572	16.068	16.118	14	15	29
194	24.000	24.050	919.572	919.622	16.118	16.168	13	16	29
195	24.050	24.100	919.622	919.672	16.168	16.218	13	16	29
196	24.100	24.150	919.672	919.722	16.218	16.268	15	15	30
197	24.150	24.200	919.722	919.772	16.268	16.318	16	16	32
198	24.200	24.250	919.772	919.822	16.318	16.368	14	16	30
199	24.250	24.300	919.822	919.872	16.368	16.418	15	15	30
200	24.300	24.350	919.872	919.922	16.418	16.468	14	15	29
201	24.350	24.400	919.922	919.972	16.468	16.518	13	16	29
202	24.400	24.450	919.972	920.022	16.518	16.568	13	15	28
203	24.450	24.500	920.022	920.072	16.568	16.618	13	16	29
204	24.500	24.550	920.072	920.122	16.618	16.668	12	16	28
205	24.550	24.600	920.122	920.172	16.668	16.718	12	16	28
206	24.600	24.650	920.172	920.222	16.718	16.768	14	21	35
207	24.650	24.700	920.222	920.272	16.768	16.818	12	20	32
208	24.700	24.750	920.272	920.322	16.818	16.868	14	19	33
209	24.750	24.800	920.322	920.372	16.868	16.918	14	19	33
210	24.800	24.850	920.372	920.422	16.918	16.968	13	19	32
211	24.850	24.900	920.422	920.472	16.968	17.018	13	19	32
212	24.900	24.950	920.472	920.522	17.018	17.068	13	17	30
213	24.950	25.000	920.522	920.572	17.068	17.118	15	14	29
214	25.000	25.050	920.572	920.622	17.118	17.168	15	13	28
215	25.050	25.100	920.622	920.672	17.168	17.218	16	14	30
216	25.100	25.150	920.672	920.722	17.218	17.268	16	15	31
217	25.150	25.200	920.722	920.772	17.268	17.318	15	14	29
218	25.200	25.250	920.772	920.822	17.318	17.368	15	14	29
219	25.250	25.300	920.822	920.872	17.368	17.418	14	15	29
220	25.300	25.350	920.872	920.922	17.418	17.468	15	15	30
221	25.350	25.400	920.922	920.972	17.468	17.518	15	16	31
222	25.400	25.450	920.972	921.022	17.518	17.568	14	17	31
223	25.450	25.500	921.022	921.072	17.568	17.618	14	16	30
224	25.500	25.550	921.072	921.122	17.618	17.668	13	13	26
225	25.550	25.633	921.122	921.145	17.668	17.737	15	13	28

3. Carriageway

The present carriageway of the Project Highway consists two lane with earthen shoulder configuration from Survey Ch. 5.580km to Survey Ch.25.633km. The type of the existing pavement of the section is flexible.

4. Major Bridges

The Site includes the following Major Bridge: -

SL. No.	Survey Chainage (km)	Existing Chainage as per NH-31 (km)	Design Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
				Foundation	Sub-structure	Super-structure		
NIL								
*Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list								

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

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

S. No.	Survey Chainage (km)	Existing Chainage as per NH-31 (km)	Design Chainage (km)	Type of Structure		No.ofSpanswith span length(m)	Width (m)	ROB/ RUB
				Foundation	Superstructure			
Nil								

6. Grade separators

The Site includes the following grade separators:

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

7. Minor bridges

The Site includes the following minor bridges:

SL. No.	Survey Chainage (km)	Existing Chainage as per NH-31 (km)	Design Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
				Foundation	Sub-structure	Super-structure		
1	6.244	901.776	0.664	Open	RCC Wall	RCC Slab	1 x 6m	12.5
2	15.347	910.887	7.801	Open	RCC Wall	RCC Slab	3 x 7.95m	8.0
3	15.994	911.555	8.447	Open	RCC Wall	RCC Slab	1 x 6m	11.2
4	16.797	912.359	9.250	Open	RCC Wall	RCC Slab	1 x 6m	11.5
5	19.347	914.920	11.468	Open	RCC Wall	RCC Slab	1x9.3m+1x8.9m	8.0

SL. No.	Survey Chainage (km)	Existing Chainage as per NH-31 (km)	Design Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
				Foundation	Sub-structure	Super-structure		
6	20.331	915.902	12.439	Open	RCC Wall	PSC Girder	1 x 40.7m	8.0
7	23.738	919.302	15.843	Open	RCC Wall	RCC Slab	1 x 6.0m	12.8
8	25.452	921.030	17.557	Open	RCC Wall	RCC Slab	5 x 7.5m	8.0
* Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list								

8. Railway level crossings

The Site includes the following railway level crossings:

Sl. No.	Chainage (km)	Location	Remarks
Nil			

9. Under-passes (vehicular, on-vehicular)

The Site includes the following under-passes:

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	Survey Chainage (km)	Existing Chainage as per NH-31 (km)	Design Chainage (km)	Type of Structures (Pipe/Slab/ Box/Arch)	Span Arrangement (no x length) (m)	Width of culvert (m)
1	7.028	902.556	1.447	Slab	1X5.77m	12.60
2	19.519	915.089	11.637	Slab	1X0.9m	10.5
3	19.642	915.212	11.755	Hume Pipe	2 X1.2m	17.7
4	21.893	917.457	13.998	Slab	1 X 3.0m	11.2
5	23.222	918.782	15.326	Slab	1 X 1.0m	11
6	24.306	919.871	16.411	Hume Pipe	1 X 1.2m	19.7
7	24.556	920.135	16.661	Hume Pipe	1 X 1.2m	20
8	24.924	920.503	17.029	Hume Pipe	1 X 1.2m	19
* Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list						

11. Bus bays

The details of bus bays onthe Site are as follows:

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

			Side	Side
Nil				

12. Truck Lay byes

The details of truck lay byes are as follows:

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

13. Road-side drains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutcha)
1	16.800	17.000	Pucca (Both)	-
2	19.542	19.773	Pucca (LHS)	-
* Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list				

14. Major junctions

The details of major junctions are as follows:

S. No.	Location					At grade	Separated	Category of Cross Road			
	Survey Ch.		Existing Chainage as per NH-31 (km)	Design Ch.							
	From km	to km		From km	To km			NH	SH	MDR	Others
Nil											

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

15. Minor junctions

The details of the minor junctions are as follows:

Sl. No.	Location					Type	
	Survey Ch.		Existing Chainage as per NH-31 (km)	Design Ch.			
	From km	To km		From km	To km	T-Junction	Cross Road
1	5.580		901.105	0.000		3-legged	Towards Bilasipara
2	6.041		901.575	0.462		3-legged	Towards KMP
3	6.180		901.710	0.598		3-legged	Towards Bulkapara
4	6.370		901.900	0.783		3-legged	Towards Village Road
5	6.680		902.200	1.093		3-legged	Towards Bharat Brick Industry

Sl. No.	Location					Type	
	Survey Ch.		Existing Chainage as per NH-31 (km)	Design Ch.			
	From km	To km		From km	To km	T-Junction	Cross Road
6	6.787		902.312	1.203		3-legged	Towards Village Road
7	14.540		910.080	7.000		3-legged	Towards Village Road
8	14.818		910.358	7.278		3-legged	Towards Sonapur
9	15.170		910.700	-		3-legged	Towards Konokali
10	15.550		911.105	7.998		3-legged	Towards Chand Bundigain
11	15.960		911.524	8.413		3-legged	Towards Hate Pota Mosto Pat
12	16.068		911.625	8.518		3-legged	Towards New Hati Pota
13	16.564		912.125	9.016		3-legged	Towards Morok
14	16.924		912.486	9.376		3-legged	Towards Islam Aria Bazzar
15	20.120		915.689	12.228		3-legged	Towards Marojartila
16	20.386		915.958	12.498		3-legged	Towards Fuljhurpara
17	20.785		916.355	12.894		3-legged	Towards Joy Guru Brick Industry
18	20.970		916.538	13.078		3-legged	Towards Village Road
19	21.030		916.600	13.138		3-legged	Towards Village Road
20	21.380		916.945	13.483		3-legged	Towards Momota Brick Field
21	21.532		917.100	13.638		3-legged	Towards Village Road
22	21.705		917.276	13.818		3-legged	Towards T G Brick Field
23	21.815		917.382	13.923		3-legged	Towards Chakchaka
24	22.300		917.868	14.408		3-legged	Towards Arer Jhar 1no Word
25	22.725		918.285	14.831		3-legged	Towards Arer JharPokirpara
26	22.960		918.517	15.068		3-legged	Towards Arer JharPutimari
27	23.075		918.635	15.182		3-legged	Towards Kodomtola
28	23.157		918.719	15.265		3-legged	Towards Village Road
29	23.300		918.860	15.406		3-legged	Towards Village Road
30	23.447		919.016	15.558		3-legged	Towards Village Road
31	23.528		919.095	15.635		3-legged	Towards Village Road
32	24.292		919.860	16.398		3-legged	Towards Mowatary
33	24.813		920.394	16.918		3-legged	Towards Kharidagosiygow
34	24.873		920.450	16.978		4-legged	Towards Kharidagosiygow(LHS),Towards Kharidagosiygow(RHS)
35	24.900		920.480	17.008		3-legged	Towards Kharidagosiygow
36	25.026		920.608	17.134		4-legged	Towards Kharidagosiygow(LHS),Towards Kharidagosiygow(RHS)
37	25.100		920.680	17.208		3-legged	Towards Kharidagosiygow
38	25.268		920.847	17.374		3-legged	Towards Village Road
39	25.340		920.919	17.446		3-legged	Towards Kharidagosiygow

*Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list

16. Bypasses

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

S.No.	Name of bypass	Survey Chainage(km)			Design Chainage (km)		
	(town)	From (km)	to (km)	Length (in Km)	From(km)	To(km)	Length (km)
1	Sonamukhi &Tilapara	7.080	14.480	7.400	1.500	6.938	5.438

17. Other structures

[Provide details of other structures, if any.]

Nil

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)

S.NO	Chainage		Length (in Km)			Crossings				Transformers	
	From (Km)	To (Km)	33KV	11KV	LT	132KV	33KV	11KV	LT	No	Capacity
1	5.580	5.700	0.240	0.240	0.240						
2	5.700	6.000	0.600	0.600	0.600						
3	5.765								0.04		
4	5.946								0.04		
5	5.970									1	
6	6.000	6.500	1.000	1.000	0.400						
7	6.030							0.04			
8	6.080							0.04			
9	6.500	6.800	0.600	0.600							
10	6.360									1	
11	6.740							0.05			
12	6.680									1	
13	6.800	7.000	0.400	0.400							
14	14.480	15.000		0.520							
15	14.880							0.04			
16	15.400	16.000		0.600							
17	15.450								0.05		
18	16.000	16.500	1.000								
19	16.090							0.05			
20	16.350							0.04			

S.NO	Chainage		Length (in Km)			Crossings				Transformers	
	From (Km)	To (Km)	33KV	11KV	LT	132KV	33KV	11KV	LT	No	Capacity
21	16.480							0.05			
22	16.500	17.020		1.040							
23	16.667							0.05			
24	16.730							0.05			
25	16.950							0.04			
26	17.020								0.04		
27	18.600	19.200		1.200	1.200						
28	18.690							0.04		1	
29	18.750							0.05			
30	18.810							0.04			
31	18.880							0.05			
32	19.010							0.04			
33	19.130							0.05		1	
34	19.200	19.400		0.200							
35	19.500							0.04			
36	19.800	20.800	1.000	2.000	2.000						
37	19.830							0.05		1	
38	20.120								0.04		
39	20.160								0.05		
40	20.450								0.04		
41	20.620									1	
42	20.800	21.100	0.6	0.6							
43	20.810								0.04		
44	21.100	21.300		0.400	0.400						
45	21.290								0.05	1	
46	21.300	21.800	0.500	0.500	0.500						
47	21.390								0.04		
48	21.800	22.300	0.500	0.500							
49	21.880									1	
50	22.300	22.800	0.500	0.500	0.500						
51	22.590							0.05			
52	22.750								0.04		
53	22.800	23.800	1.000	2.00	2.00						
54	22.820							0.05		1	
55	22.870							0.05			
56	22.930							0.04			
57	23.880							0.05		1	
58	23.170							0.05			
59	23.300									1	
60	23.390							0.05		1	
61	23.450							0.04			
62	23.800							0.04			
63	23.800	24.800		2.00	2.00						
64	23.970							0.04		1	

S.NO	Chainage		Length (in Km)			Crossings				Transformers	
	From (Km)	To (Km)	33KV	11KV	LT	132KV	33KV	11KV	LT	No	Capacity
65	24.030							0.05			
66	24.360									1	
67	23.800	25.620		3.64	3.64						
68	24.870							0.05			
69	24.900							0.05			
70	24.950									1	
71	25.550							0.04			
72	25.120								0.05		
73	25.130							0.04			
74	25.230							0.05			
75	25.380									1	
76	25.520							0.05			
*Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list											

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

The site includes the following Public Health utilities:-

SLNo	Chainage		Length(in Km)	Crossings(in km)
	From (Km)	To (Km)	Water Supply line	Water Supply line
1	15.142	15.232	0.090	
2	15.212	15.232	0.020	
3	15.232			0.010
4	15.385			0.010
5	15.385	16.010	1.250	
6	16.010			0.010
7	18.590			0.010
8	18.590	19.250	0.660	
9	22.303	23.163	0.860	
10	22.303	23.843	1.540	
11	23.163			0.010
12	23.745	24.305	0.560	
13	24.015			0.010
14	24.305	25.425	1.120	
*Since from Survey Ch. 7.080km to Survey Ch. 14.480km bypass has been proposed, details of existing bridge/structure/junction/existing utilities in this section are not included in this list				

(iii) Any Other line

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

Annex – II

(As per Clause 8.3 (i))

(Schedule-A)

Dates for providing Right of Way of Construction Zone

The dates on which the Authority shall provide Right of Way of Construction Zone to the Contractor on different stretches of the Site are stated below:

Sr. No.	From km To km	Length (Km)	Proposed ROW (m)	Date of providing ROW*
1	**2**	**3**	**4**	**5**
Full Right of Way (full width)	Excluding Bus bays	17.407	Rural Area:35m /40m Built-up Location:35m Bypass Location :45m-50m Forest Location: 35m/40m	At appointed date
Balance Right of Way (Width)	Bus bays	0.330	50m	Within 150 days of declaration of appointed date

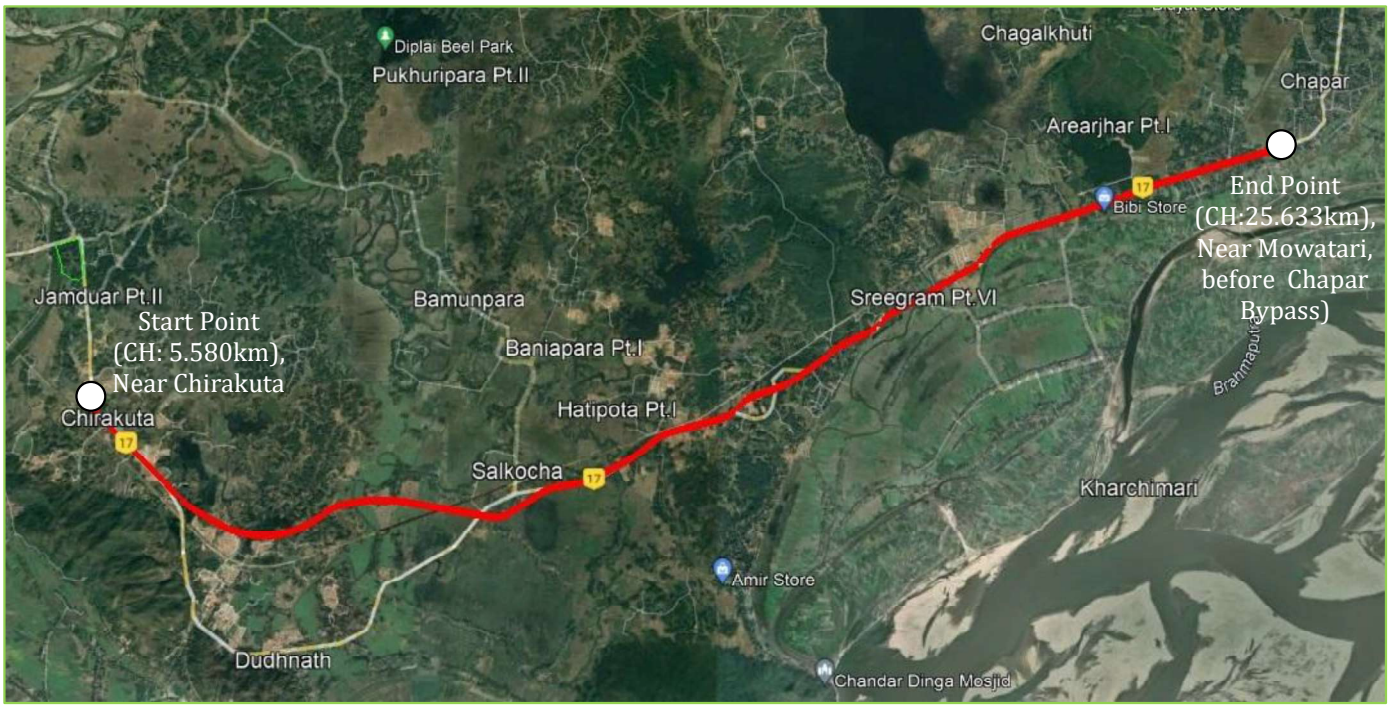
*The dates specified herein shall in no case be beyond 150 (one hundred and fifty) days after the Appointed Date.

Annex-III

(Schedule-A)

Alignment Plans

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



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

(ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however,

(iii) Improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per the relevant specifications/IRC Codes/Manual.

Annex – IV

(Schedule-A)

Environment Clearances

The following environment clearances have been obtained:

[***] The following environment clearances are

awaited:[***]

<table>
<tr><th>Sr. No.</th><th>Clearances</th><th>Present Status</th></tr>
<tr><td>1</td><td>Environment clearance</td><td>Not Required</td></tr>
<tr><td>2</td><td>Forest Clearance</td><td>Required forest clearance.

i) The proposal was earlier uploaded in the parivesh portal.
ii)Joint verification is completed with forest department.
Iii) Revised proposal is being prepared.

The project stretch passes through SrigramRF&Sarpamari RF. Details are given below.
<table>
<tr><th colspan="2">As per Existng Survey Ch(km)</th><th colspan="2">As per Existng NH-31 Ch(km)</th><th colspan="2">As per Design Ch(km)</th><th rowspan="2">Side</th><th rowspan="2">Effective Length(km)</th><th rowspan="2">Length(km)</th><th rowspan="2">Remaks</th></tr>
<tr><th>From</th><th>To</th><th>From</th><th>To</th><th>From</th><th>To</th></tr>
<tr><td>-</td><td>-</td><td>-</td><td>-</td><td>9.950</td><td>10.168</td><td>Both</td><td>0.436</td><td>0.218</td><td rowspan="4">Also 1.416 Km effective length of Srigram RF and Sarpamari RF passed through the proposed alignment (Realignment Stretch)</td></tr>
<tr><td>-</td><td>-</td><td>-</td><td>-</td><td>10.168</td><td>10.678</td><td>Left</td><td>0.51</td><td>0.51</td></tr>
<tr><td>-</td><td>-</td><td>-</td><td>-</td><td>10.168</td><td>10.703</td><td>Right</td><td>0.535</td><td>0.535</td></tr>
<tr><td>18.561</td><td>19.249</td><td>914.129</td><td>914.817</td><td>10.678</td><td>11.366</td><td>Left</td><td>0.688</td><td>0.688</td></tr>
</table></td></tr>
<tr><td>3</td><td>Wildlife Approval</td><td>Not Required</td></tr>
</table>

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 [Four-Laning and Strengthening] of the Project Highway as described in Annex-I of this Schedule-B and in Schedule-C.

3. Specifications and Standards

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

Annex – I

(Schedule-B)

Description of [Four-Laning]

[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 [Four Laning of Highways (IRC: SP: 84-2014 & 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 in order to define the Scope of the Project clearly and precisely.]

1. Widening of the Existing Highway

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

(ii) Width of Carriageway

(a) Four-Lanning [with] paved shoulders shall be undertaken. The paved carriageway shall be [7(seven)m x2] wide in accordance with the typical cross sections drawings in the Manual.

Provided that in the built-up areas [refer to paragraphs 2.1 (ii) (a) of the Manual and provide necessary details]: the width of the carriageway shall be as specified in the following table:

Sl. No.	Built-up stretch (Township)	Location (kmto km)	Width (m)	Typical Cross Section (Refer to Manual)	Remarks
Nil					

(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

The design speed shall be 80-100 km per hr. for plain/ rolling terrain.

(iii) Improvement of the existing road geometrics

[Refer to paragraph 2.1 (v) of the Manual and provide details]

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

Sl. No.	Stretch (from km to km)	Type of deficiency	Remarks
Nil			

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

v) Type of shoulders

[Refer to paragraph 2.5.2 of the Manual and specify]

(a) In built-uplocations, Drain cum footpaths/fully paved shoulders shall be provided in the following stretches:

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/ footpaths	Reference to TCS
1	Km 8.210 to km 8.800	2 X 2.5 m Paved Shoulder/ 2 X 1.0m width Drain Cum Footpath	TCS-4F
2	Km 12.125 to km 12.175	2 X 2.5 m Paved Shoulder/ 2 X 1.0m width Drain Cum Footpath	TCS-4F
3	Km 12.723 to km 13.454	2 X 2.5 m Paved Shoulder/ 2 X 1.0m width Drain Cum Footpath	TCS-4F
4	Km 14.633 to km 15.170	2 X 2.5 m Paved Shoulder/ 2 X 1.0m width Drain Cum Footpath	TCS-4F
5	Km 16.340 to km 17.225	2 X 2.5 m Paved Shoulder/ 2 X 1.0m width Drain Cum Footpath	TCS-4F

(b) In open country, [paved shoulders of 2.5 m width and balance 1.5m width shall be covered with 150 mm thick compacted layer of granular material].

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

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

(vi) Lateral and vertical clearances at underpasses

(a) Lateral and vertical clearance 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)	Span/opening(m)	Remarks
1	0.346	1 x 8.0m x 5.0m	SVUP
2	1.000	1 x 8.0m x 5.0m	SVUP
3	1.528	1 x 8.0m x 5.0m	SVUP
4	4.754	1 x 15m	SVUP
5	5.869	1 x 40m	VUP
6	6.332	1 x 8.0m x 5.0m	SVUP
7	6.725	1 x 24m	VUP

*The cross road at SVUP location(Ch.6.333km) to be developed with granular subbase of 200mm thick and paver block within the Proposed Right of Way.

*Vertical clearance shall be 5.5m (minimum) for VUP and 4.0m (minimum) for SVUP from finished road level of cross roads.

(vii) Lateral and vertical clearances at overpasses

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

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

Sl. No.	Location (Chainage)	Span/Opening (m)	Remarks
1	3.608	2 x 21m	VOP

*Vertical clearance shall be 5.5m (minimum) and lateral clearance shall be 20.0m (for each side).

*The cross road(length of 50m) at VOP location to be developed with minimum of 40mmBC, 80mm DBM, 250mm WMM,200mm GSB . Retaining wall of minimum 100m length have been proposed to accommodate the development of cross road, within the Existing Right of Way.

(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	Reference to TCS	Remarks
1	Km 0.000 to km 0.373	Both sides	2X0.373=0.746	TCS 4F1	2x5.5m
2	Km 0.373 to km 0.598	Both sides	2X0.225=0.450	Tapered	Varying Width
3	Km 0.800 to km 1.540	Both sides	2X0.740=1.480	-	2x5.5m

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	Reference to TCS	Remarks
4	Km 6.350 to km 7.225	Both sides	2X0.875=1.750	TCS 6B	2x5.5m
5	Km 7.225 to km 7.450	Both sides	2X0.225=0.450	Tapered	Varying Width
6	Km 7.985 to km 8.210	Both sides	2X0.225=0.450	Tapered	Varying Width
7	Km 8.210 to km 8.880	Both sides	2X0.670=1.340	TCS 4F	2x5.5m
8	Km 8.880 to km 9.223	Both sides	2X0.343=0.686	TCS 6B1	2x5.5m
9	Km 9.223 to km 9.500	Both sides	2X0.277=0.554	-	2x5.5m
10	Km 9.500 to km 9.678	Both sides	2X0.178=0.356	-	2x5.5m
11	Km 9.678 to km 9.950	Both sides	2X0.272=0.544	-	2x5.5m
12	Km 10.668 to km 11.366	Right sides	1X0.698=0.698	-	1x5.5m
13	Km 11.900 to km 12.125	Both sides	2X0.225=0.450	Tapered	Varying Width
14	Km 12.125 to km 12.175	Both sides	2X0.050=0.100	TCS 4F	2x5.5m
15	Km 12.175 to km 12.400	Both sides	2X0.225=0.450	Tapered	Varying Width
16	Km 12.498 to km 12.723	Both sides	2X0.225=0.450	Tapered	Varying Width
17	Km 12.723 to km 13.454	Both sides	2X0.731=1.462	TCS 4F	2x5.5m
18	Km 13.454 to km 13.725	Both sides	2X0.271=0.542	TCS 4F1	2x5.5m
19	Km 13.725 to km 13.950	Both sides	2X0.225=0.450	Tapered	Varying Width
20	Km 14.408 to km 14.633	Both sides	2X0.225=0.450	Tapered	Varying Width
21	Km 14.633 to km 15.170	Both sides	2X0.537=1.074	TCS 4F	2x5.5m
22	Km 15.170 to km 15.395	Both sides	2X0.225=0.450	Tapered	Varying Width
23	Km 15.395 to km 15.575	One side	1X0.180=0.180	TCS 4F2	2x5.5m
24	Km 15.575 to km 15.800	One side	1X0.225=0.225	Tapered	Varying Width

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	Reference to TCS	Remarks
25	Km 16.115 to km 16.340	Both sides	2X0.225=0.450	Tapered	Varying Width
26	Km 16.340 to km 17.225	Both sides	2X0.885=1.770	TCS 4F	2x5.5m
27	Km 17.225 to km 17.450	Both sides	2X0.225=0.450	Tapered	Varying Width

*The specified length of Service Road indicated in this location is minimum

(ix) Grade separated structures

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

[Refer to requirements specified in the relevant Manual]

Sl. No.	Location of Structure	Length (m)	Number and length of spans (m)	Total Width (m)	Approach gradient	Remarks
1	Ch. 0.346Km	9.3	1 x 8.0mx5.0m	2x14.5m(CW) + 2 x 0.5m(Crash Barrier)=30m	-	RCC Box, SVUP
2	Ch. 1.000Km	9.3	1 x 8.0mx5.0m	2x15.5m(CW) + 2 x 0.5m(Crash Barrier)=32m	-	RCC Box, SVUP
3	Ch. 1.528Km	9.3	1 x 8.0mx5.0m	2x9.5m(CW) + 4 x 0.5m(Crash Barrier) + 3m(Clear Median Width)+2x1.5m(Footpath Width)+2x0.5m(Kerb with Railing Width)=28m	2.50%	RCC Box, SVUP
4	Ch. 3.608Km	45.0	2 x 21m	11m(CW) + 2 x 0.5m(Crash Barrier) =12m	-	RCC T Girder, VOP
5	Ch. 4.754Km	15.0	1 x 15m	2x9.5m(CW) + 4 x 0.5m(Crash Barrier) + 3m(Clear Median Width)=24m	2.50%	Simply Supported Voided Slab, SVUP
6	Ch. 5.869Km	40.0	1 x 40m			PSC T Girder, VUP
7	Ch. 6.332Km	9.3	1 x 8.0mx5.0m			RCC Box, SVUP(Skew, 45^0)
8	Ch. 6.725Km	25.3	1 x 24m	2x9.5m(CW) + 4 x 0.5m(Crash Barrier) + 3m(Clear Median Width)+2x1.5m(Footpath Width)+2x0.5m(Kerb with Railing 9Width)=28m		RCC Integral Voided Slab, VUP

Sl. No.	Location of Structure	Length (m)	Number and length of spans (m)	Total Width (m)	Approach gradient	Remarks
9	Km 9.223 to Km 9.678	455.0	13x35m	2 x 10.5m(CW) + 2 x 0.5m(Crash Barrier) + 1x 1.0m(median)=23m		PSC Box Girder(Flyover)

In SVUP, VUP & Flyover approach locations, Reinforced Earth Wall shall be provided in the following stretches:

Location		Length (km)
From(km)	To(km)	
1.200	1.540	0.340
6.350	7.225	0.875
8.880	9.223	0.343
Total Length=		1.558

*The specified length of Reinforced earth wall is the minimum requirement

(b) In the case of grade separated structures the type of structure and the level of the Project Highway and the crossroads shall be as follows: [Refer to provision of the Manual and specify the type of vehicular underpass/ overpass structure and whether the crossroad 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	
1	Ch. 0.346Km	SVUP, 1 x 8.0mx5.0m	-	-	-	-
2	Ch. 1.000Km	SVUP, 1 x 8.0mx5.0m	-	-	-	-
3	Ch. 1.528Km	SVUP, 1 x 8.0mx5.0m	-	-	-	-
4	Ch. 3.608Km	VOP, 2 x 21m	-	-	-	-
5	Ch. 4.754Km	SVUP, 1 x 15m	-	-	-	-
6	Ch. 5.869Km	VUP, 1 x 40m	-	-	-	-
7	Ch. 6.332Km	SVUP, 1 x 8.0mx5.0m	-	-	-	-
8	Ch. 6.725Km	VUP, 1 x 24m	-	-	-	-
9	Km 9.223 to Km 9.678	Flyover, 13x35m	-	-	-	-

(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		

The details of Elephant Under passes is given below.

Sl.No.	Location(km)	Span Arrangement (No. x Span in m)	Type of Structure	Total Width (m)	Remarks
Nil					

In EUP approach locations, Reinforced Earth Wall shall be provided in the following stretches:

Location		Length (km)
From(km)	To(km)	
Nil		

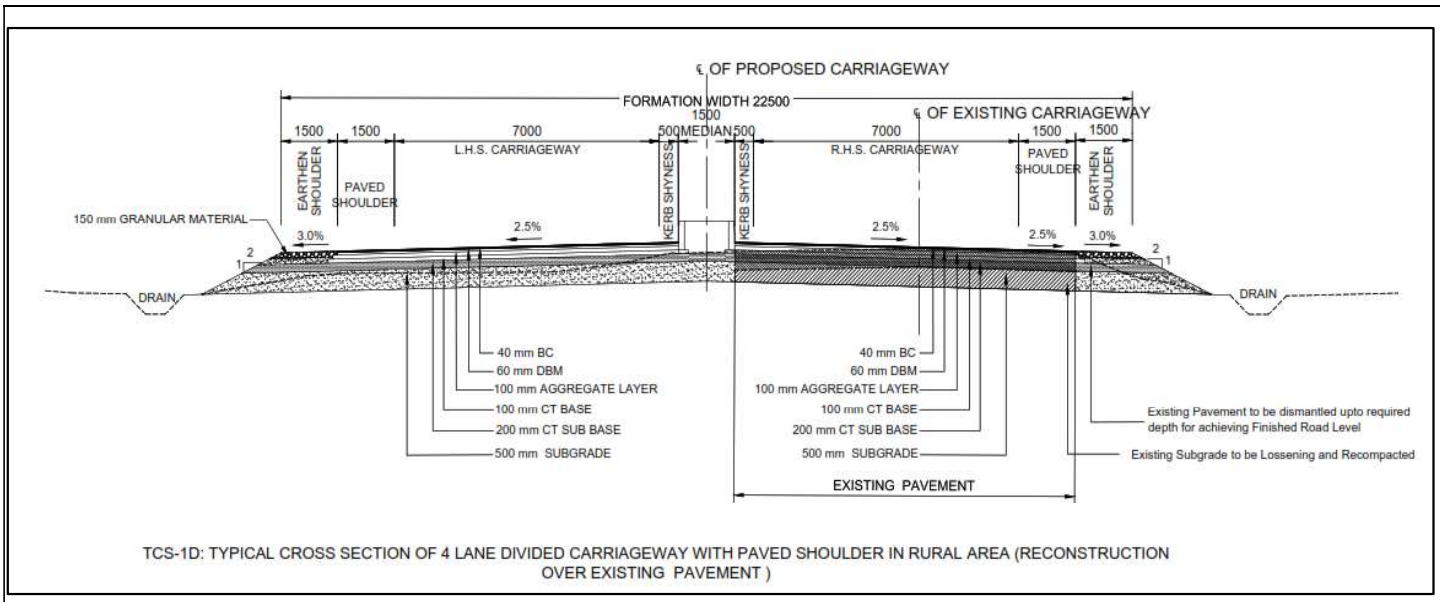
*The specified length of Reinforced earth wall is the minimum requirement

(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

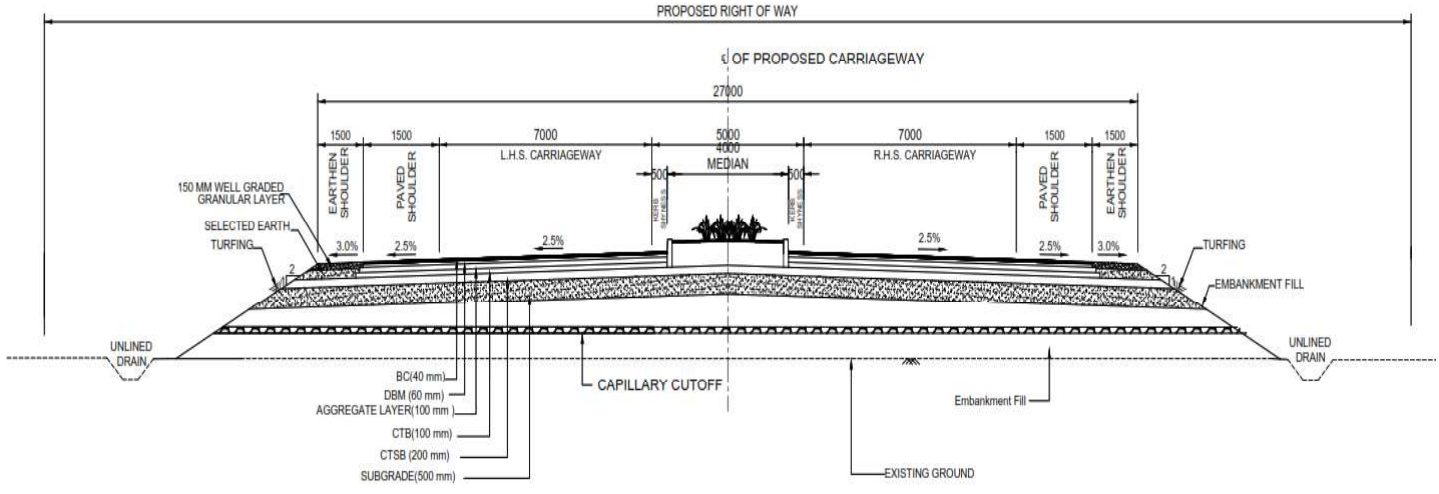
Sl. No.	Description	Length (m)
TCS 1D	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN RURAL AREA(RECONSTUCTION OVER EXISTING PAVEMENT)	2227
TCS 2	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH	900
TCS 2A	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH WITH BOTH SIDE RETAINING WALL AND STONE PITCHING ALONG WITH BERM	2353
TCS 2C	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH WITH BOTH SIDE RETAINING WALL	609
TCS 4F	TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH BOTH SIDE SERVICE ROAD IN BUILT-UP AREA (RECONSTUCTION OVER EXISTING PAVEMENT WITH FULL GRANULAR LAYER SCARIFICATION WITH NEW SUBGRADE)	2873
TCS 4F1	TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH BOTH SIDE SERVICE ROAD IN RURAL AREA (RECONSTUCTION OVER EXISTING PAVEMENT)	969
TCS 4F2	TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH RIGHT SIDE SERVICE ROAD IN RURAL AREA(RECONSTUCTION OVER EXISTING PAVEMENT)	180
TCS 5D	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN FOREST STRETCH WITH BOTH SIDE R.C.C RETAINING WALL	738
TCS 5E	TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH RIGHT SIDE SERVICE ROAD IN FOREST STRETCH (RECONSTRUCTION OVER EXISTING PAVEMENT WITH FULL GRANULAR LAYER SCARIFICATION WITH NEW SUBGRADE)	678
TCS 6B	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN VUP/SVUP APPROACHES WITH BOTH SIDE SERVICE ROAD	1215
TCS 6B1	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN FLYOVER APPROACHES WITH BOTH SIDE SERVICE ROAD WITH DRAIN	343

Sl. No.	Description	Length (m)
	ROB+VIADUCT+VUP	1220
	TAPPERED PORTION	2700
	FLYOVER	455
	TOLL PLAZA	277
	Total Length=	**17737**

Typical cross-sections (TCS) drawings are given below:

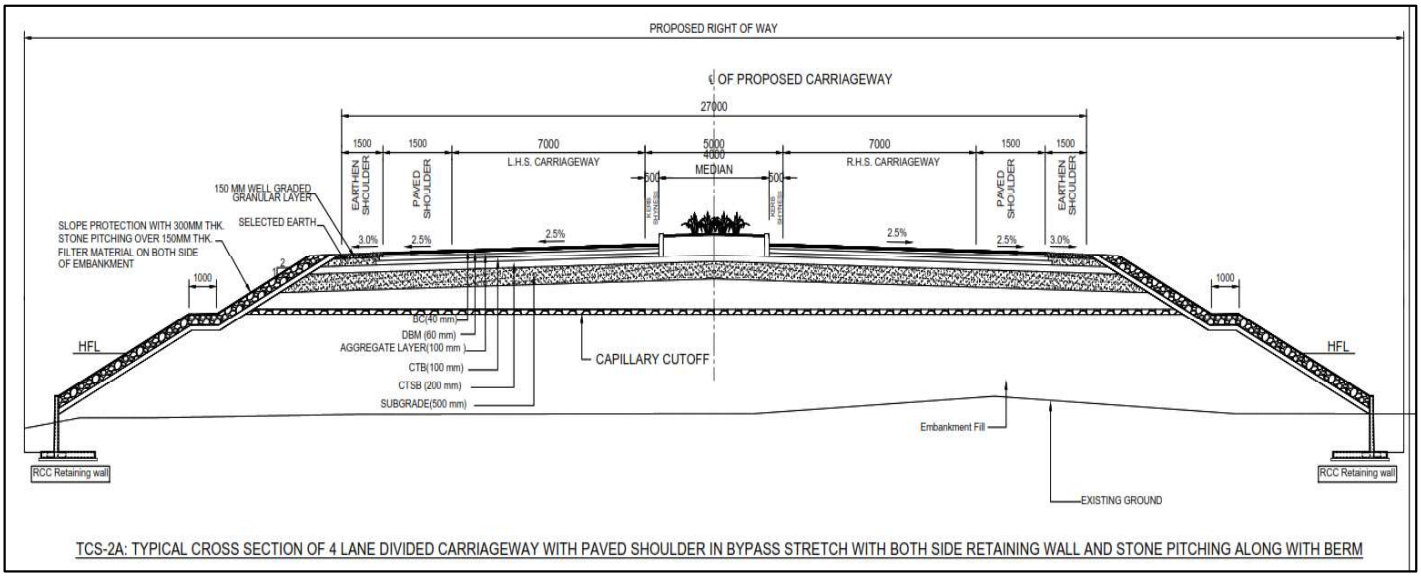


TCS-1D: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN RURAL AREA (RECONSTRUCTION OVER EXISTING PAVEMENT)

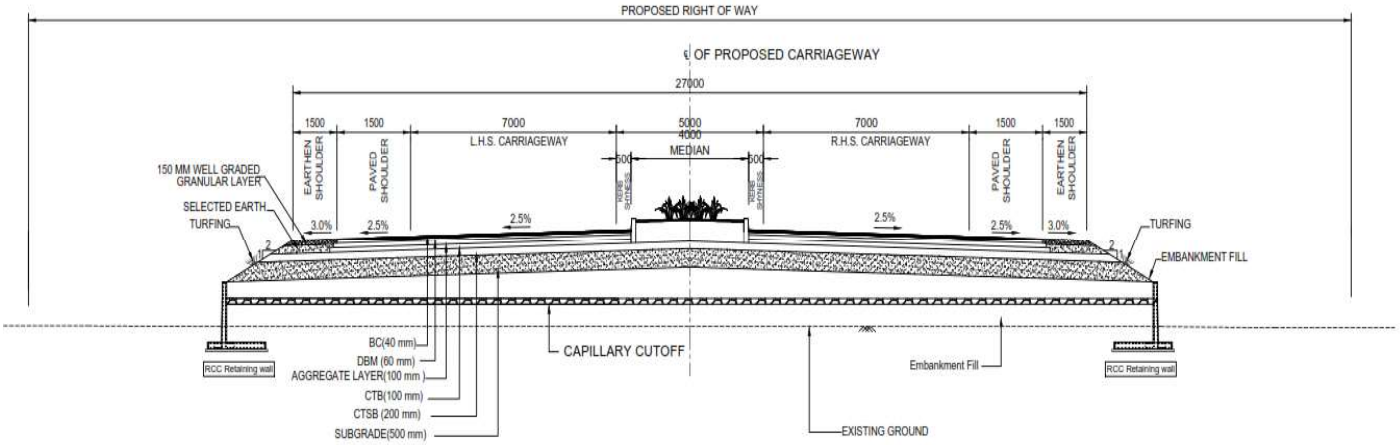


TCS-2: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch.5.580km to Ch.25.633km (Design Ch.0.000km to Ch.17.737km)(Km901.100 to Km 921.145 of old NH-31) for Package-1 of Bilasipura-Guwahati road(NH-17) (Section: Near Chirakuta to Near Mowatari, before Chapar Bypass) in the state of Assam on HAM mode

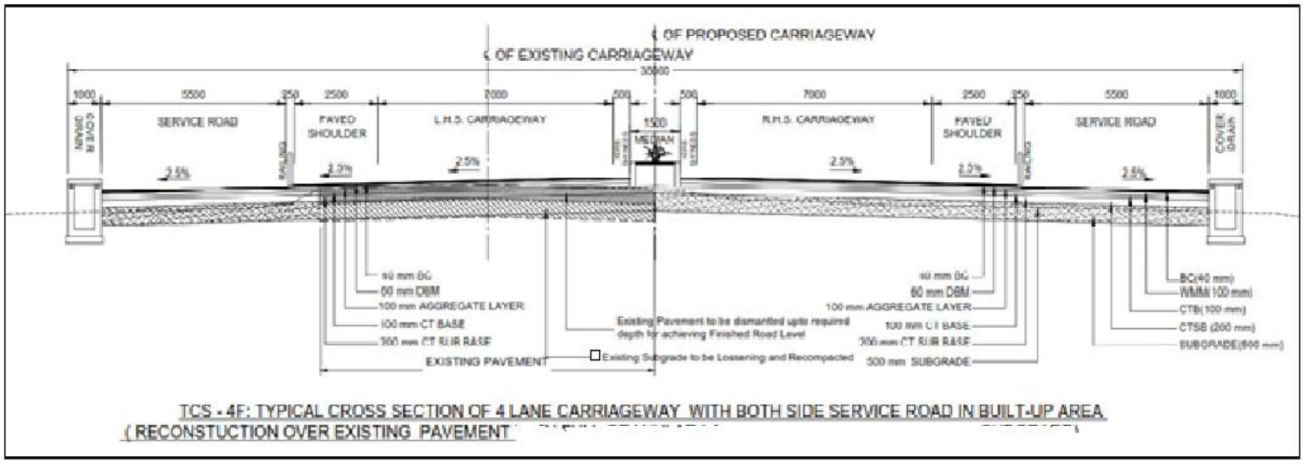


TCS-2A: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH WITH BOTH SIDE RETAINING WALL AND STONE PITCHING ALONG WITH BERM

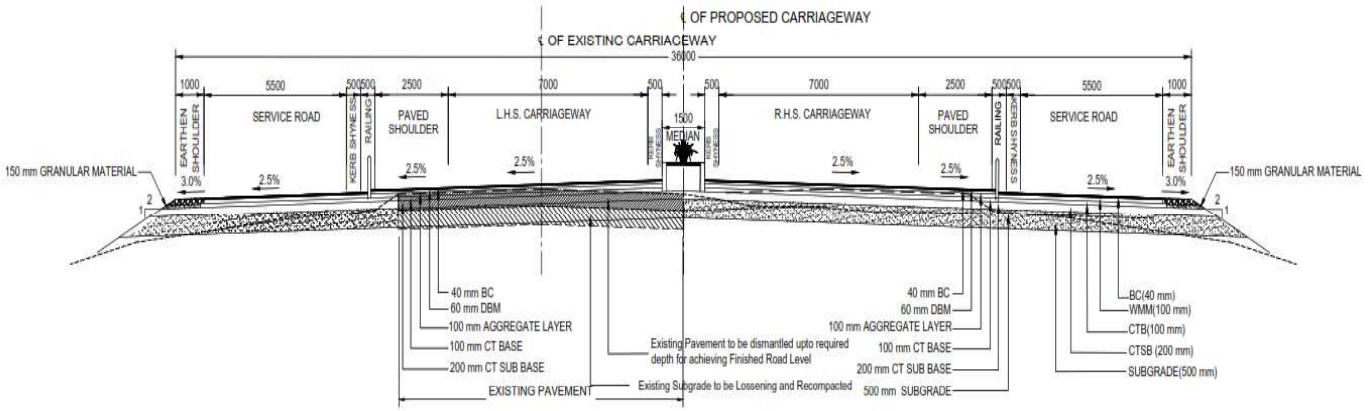


TCS-2C: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN BYPASS STRETCH WITH BOTH SIDE RETAINING WALL

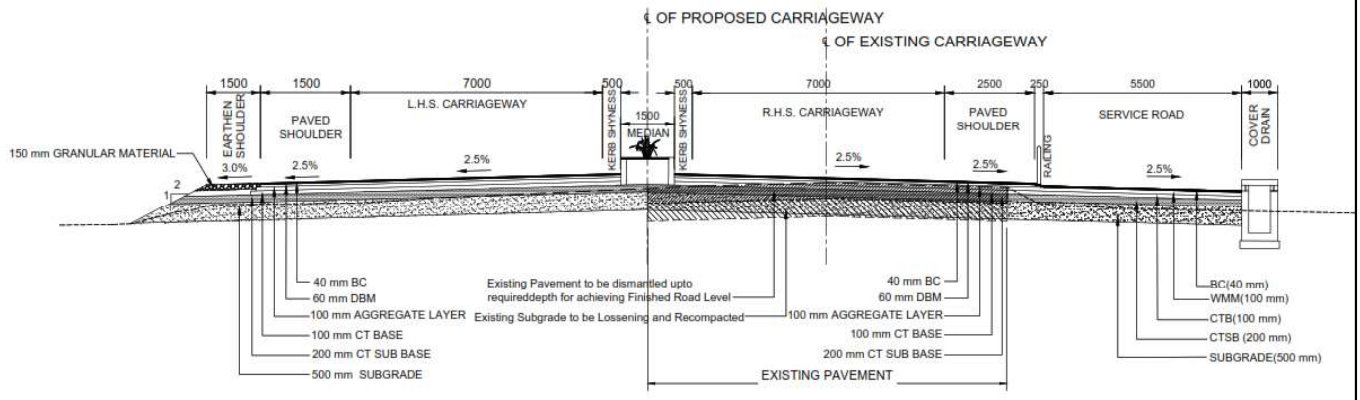
All Dimensions are in mm



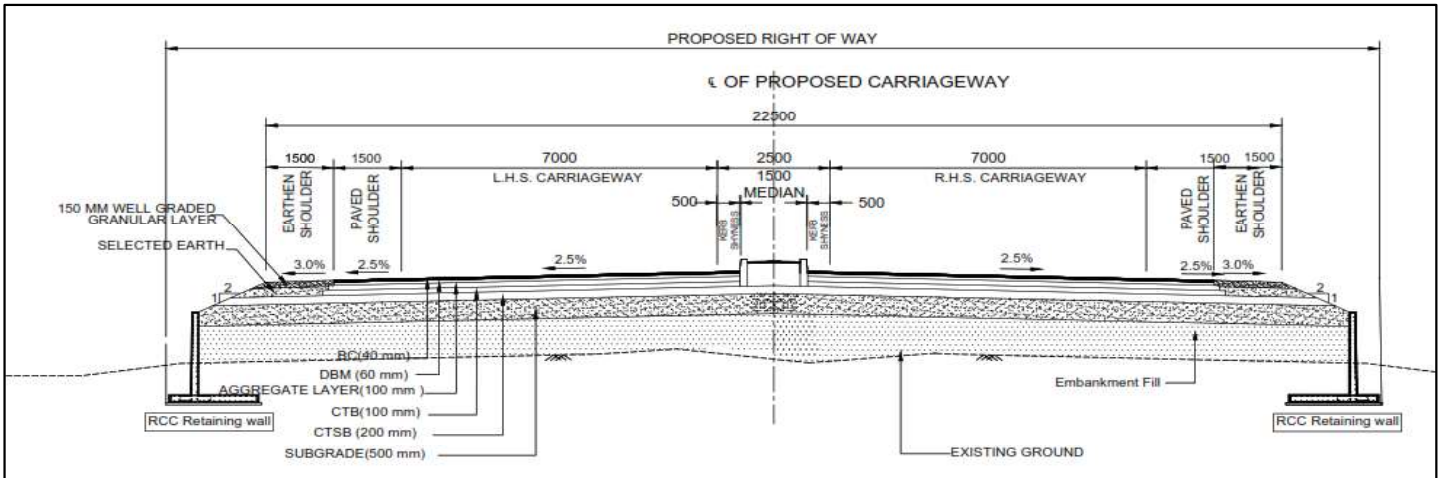
TCS - 4F: TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH BOTH SIDE SERVICE ROAD IN BUILT-UP AREA (RECONSTUCTION OVER EXISTING PAVEMENT



TCS - 4F1: TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH BOTH SIDE SERVICE ROAD IN RURAL AREA
(RECONSTUCTION OVER EXISTING PAVEMENT)

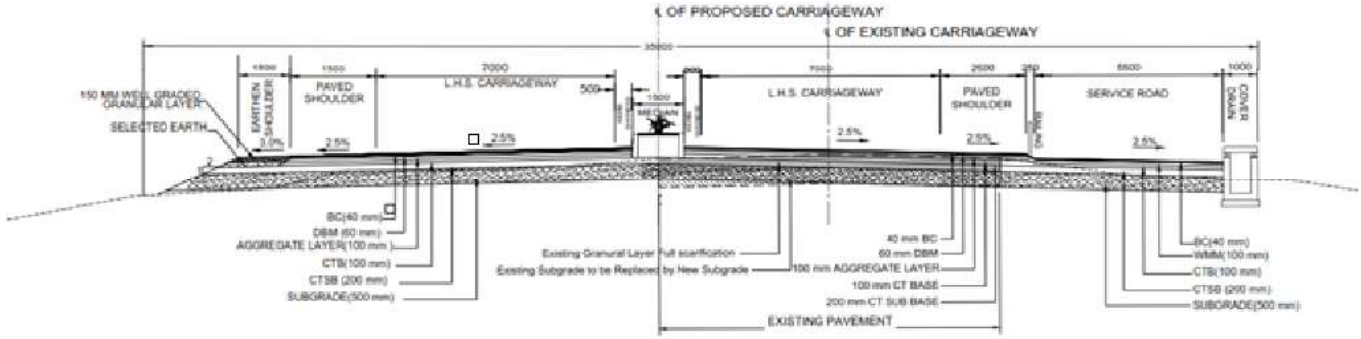


TCS - 4F2: TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH RIGHT SIDE SERVICE ROAD IN RURAL AREA
(RECONSTUCTION OVER EXISTING PAVEMENT)

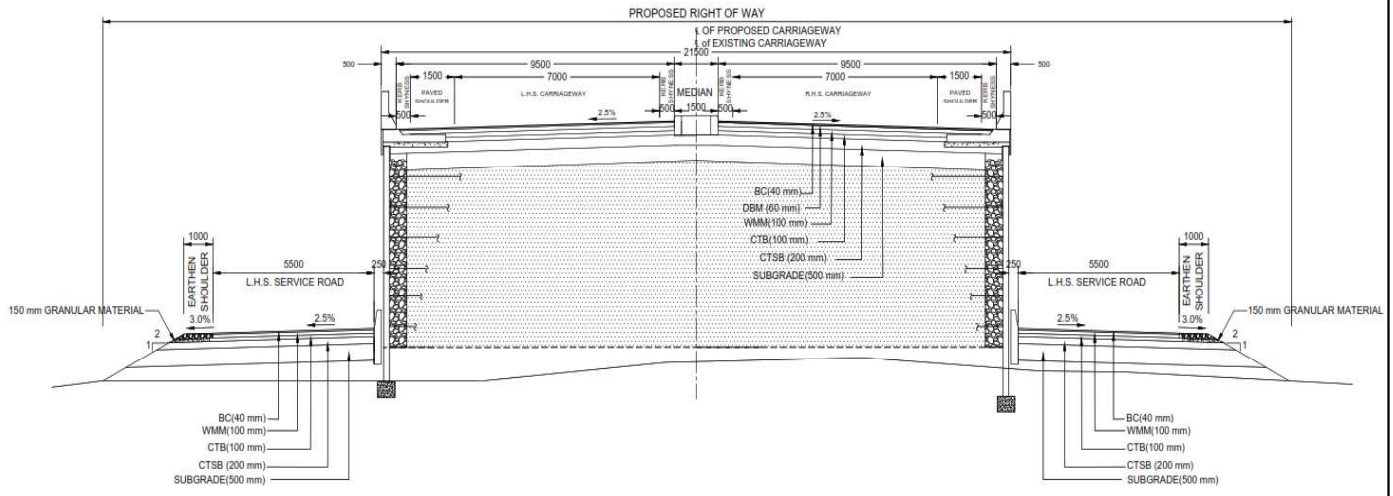


TCS-5D: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN FOREST STRETCH WITH BOTH SIDE R.C.C RETAINING WALL

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch.5.580km to Ch.25.633km (Design Ch.0.000km to Ch.17.737km)(Km901.100 to Km 921.145 of old NH-31) for Package-1 of Bilasipura-Guwahati road(NH-17) (Section: Near Chirakuta to Near Mowatari, before Chapar Bypass) in the state of Assam on HAM mode



TCS - 5E: TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH RIGHT SIDE SERVICE ROAD (RECONSTUCTION OVER EXISTING PAVEMENT



TCS-6B: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN VUP/SVUP APPROACHES WITH BOTH SIDE SERVICE ROAD

CTSB (200 mm)
SUBGRADE(500 mm)

TCS-6B1: TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN FLYOVER APPROACHES WITH BOTH SIDE SERVICE ROAD WITH DRAIN

Sl No	Chainage(m)		Length (m)	TCS Type
	From	To		
1	0	373	373	TCS 4F1
2	373	598	225	Tapered
3	598	875	277	Toll Plaza
4	875	1200	325	TCS 4F1
5	1200	1540	340	TCS 6B
6	1540	2460	920	TCS 2A
7	2460	2500	40	TCS 2C
8	2500	3330	830	TCS 2A
9	3330	3400	70	TCS 2C

Sl No	Chainage(m)		Length (m)	TCS Type
	From	To		
10	3400	3520	120	TCS 2A
11	3520	4170	650	TCS 2
12	4170	4240	70	TCS 2A
13	4240	4490	250	TCS 2
14	4490	4748	258	TCS 2C
15	4748	5968	1220	ROB+VIADUCT+VUP
16	5968	6109	141	TCS 2A
17	6109	6350	241	TCS 2C
18	6350	7225	875	TCS 6B
19	7225	7450	225	Tapered(TCS 6B-TCS 1D)
20	7450	7985	535	TCS 1D
21	7985	8210	225	Tapered(TCS 1D-TCS 4F)
22	8210	8880	670	TCS 4F
23	8880	9223	343	TCS 6B1
24	9223	9500	277	Flyover
25	9500	9678	178	Flyover1
26	9678	9950	272	TCS 2A
27	9950	10688	738	TCS 5D
28	10688	11366	678	TCS 5E
29	11366	11900	534	TCS 1D
30	11900	12125	225	Tapered(TCS 1D-TCS 4F)
31	12125	12175	50	TCS 4F
32	12175	12400	225	Tapered(TCS 4F-TCS 1D)
33	12400	12498	98	TCS 1D
34	12498	12723	225	Tapered(TCS 1D-TCS 4F)
35	12723	13454	731	TCS 4F
36	13454	13725	271	TCS 4F1
37	13725	13950	225	Tapered(TCS 4F1-TCS 1D)
38	13950	14408	458	TCS 1D
39	14408	14633	225	Tapered (TCS 1D-TCS 4F)
40	14633	15170	537	TCS 4F
41	15170	15395	225	Tapered (TCS 4F-TCS 1F)
42	15395	15575	180	TCS 4F2
43	15575	15800	225	Tapered (TCS 4F2-TCS 1D)
44	15800	16115	315	TCS 1D
45	16115	16340	225	Tapered (TCS 1D-TCS 4F)
46	16340	17225	885	TCS 4F
47	17225	17450	225	Tapered (TCS 4F-TCS 1D)
48	17450	17737	287	TCS 1D
	Total Length		**17737**	

3. Intersections and Grade Separators

All intersections and grade separators shall be as per Section3 of the Manual. Existing intersections which are deficient shall be improved to the prescribed standards.

[Refer to provision of the relevant Manual and specify the requirements. Explain where

necessary with drawings/sketches/general arrangement].

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

(i) At-grade intersections

Major Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features	Remarks
1	Ch.1.600km	3-legged	Junction is provided at the start point of Sonamukhi &Tilapara Bypass	Improvement with grade separated structure with service road
2	Ch.6.730km	3-legged	Junction is provided at the end point of Sonamukhi&Tilapara Bypass	Improvement with grade separated structure with service road
3	Ch.9.550km	3-legged	Junction is provided at the start point of Hatipota Realignment	Improvement with grade separated structure with service road

Minor Intersections

Sl. No.	Location		Type		Remarks
	From km	To km	3/4 Legged	Cross Road	
1	0.000		3-legged	Towards Bilasipara	Improvement with service road and merging lane
2	0.462		3-legged	Towards KMP	
3	0.598		3-legged	Towards Bulkapara	
4	0.783		3-legged	Towards Village Road	
5	1.093		3-legged	Towards Bharat Brick Industry	
6	1.203		3-legged	Towards Village Road	
7	7.000		3-legged	Towards Village Road	
8	7.278		3-legged	Towards Sonapur	
9	7.998		3-legged	Towards Chand Bundigain	
10	8.413		3-legged	Towards Hate Pota Mosto Pat	
11	8.518		3-legged	Towards New Hati Pota	
12	9.016		3-legged	Towards Morok	
13	9.376		3-legged	Towards Islam Aria Bazzar	
14	10.668		3-legged	End point of Hatipota Realignment	
15	12.228		3-legged	Towards Marojartila	
16	12.498		3-legged	Towards Fuljhurpara	

Sl. No.	Location		Type		Remarks
	From km	To km	3/4 Legged	Cross Road	
17	12.894		3-legged	Towards Joy Guru Brick Industry	
18	13.078		3-legged	Towards Village Road	
19	13.138		3-legged	Towards Village Road	
20	13.483		3-legged	Towards Momota Brick Field	
21	13.638		3-legged	Towards Village Road	
22	13.818		3-legged	Towards T G Brick Field	
23	13.923		3-legged	Towards Chakchaka	
24	14.408		3-legged	Towards Arer Jhar 1no Word	
25	14.831		3-legged	Towards Arer JharPokirpara	
26	15.068		3-legged	Towards Arer JharPutimari	
27	15.182		3-legged	Towards Kodomtola	
28	15.265		3-legged	Towards Village Road	
29	15.406		3-legged	Towards Village Road	
30	15.558		3-legged	Towards Village Road	
31	15.635		3-legged	Towards Village Road	
32	16.398		3-legged	Towards Mowatary	
33	16.918		3-legged	Towards Kharidagosiygow	
34	16.978		4-legged	Towards Kharidagosiygow(LHS),Towards Kharidagosiygow(RHS)	
35	17.008		3-legged	Towards Kharidagosiygow	
36	17.134		4-legged	Towards Kharidagosiygow(LHS),Towards Kharidagosiygow(RHS)	
37	17.208		3-legged	Towards Kharidagosiygow	
38	17.374		3-legged	Towards Village Road	
39	17.446		3-legged	Towards Kharidagosiygow	

*In case any other deficient junction with cross roads is identified during the Construction Period in addition to those mentioned above, shall be improved as per Manual and will not qualify for Change of Scope

*Cross-drainage structures(HP/Box culvert) at cross road locations as per site requirement shall be constructed and these will not be part of change of scope.

(ii) Grade separated intersection with/without ramps

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

4. Road Embankment and Cut Section

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

construction of new road embankment/cuttings shall conform to the Specifications and Standards given in Section4 of the Manual and the specified cross-sectional details. Deficiencies in the plan and profile of the existing road shall be corrected.

(iii) 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 for a design life of 20 years considering minimum of 44 MSA (From Ch. 0.000Km to Ch. 17.737km).

(ii) Type of pavement

[Refer to the provision of relevant Manual and state specific requirement, if any, of providing cement concrete pavement.]

Flexible pavement shall be designed as per IRC: 37-2018(Fourth Revision) and the details given below

Main Carriageway
For Widening/RE Wall portion/ Reconstruction/New Construction BC -40 mm DBM -60 mm Aggregate Layer- 100 mm CT Base-100 mm CT Sub-Base- 200 mm Total -500 mm
Service Road
BC -40 mm Aggregate Layer- 100 mm CT Base-100 mm CT Sub-Base- 200 mm Total -440 mm

*The above details are minimum stipulations to be followed

- Toll Plaza location the proposed minimum thickness of the pavement is PQC=300mm, DLC=150mm & GSB=150mm.

(iii) Design requirements

[Refer to the provision of 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.

(b) Design Traffic

Not with standing anything to the contrary contained in this Agreement or the Manual. The Contractor shall design the pavement for a minimum design traffic of 44 million standard axles (From Ch. 0.000Km to Ch.17.737km).

(iv) Reconstruction of stretches

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

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

Sl no	Chainage (km)		Length	TCS No
	From	To.	(m)	
1	0	373	373	TCS 4F1
2	373	598	225	Tapered
3	875	1200	325	TCS 4F1
4	7225	7450	225	Tapered
5	7450	7985	535	TCS 1D
6	7985	8210	225	Tapered
7	8210	8880	670	TCS 4F
8	10688	11366	678	TCS 5E
9	11366	11900	534	TCS 1D
10	11900	12125	225	Tapered
11	12125	12175	50	TCS 4F
12	12175	12400	225	Tapered
13	12400	12498	98	TCS 1D
14	12498	12723	225	Tapered
15	12723	13454	731	TCS 4F
16	13454	13725	271	TCS 4F1
17	13725	13950	225	Tapered
18	13950	14408	458	TCS 1D
19	14408	14633	225	Tapered
20	14633	15170	537	TCS 4F
21	15170	15395	225	Tapered
22	15395	15575	180	TCS 4F2
23	15575	15800	225	Tapered
24	15800	16115	315	TCS 1D
25	16115	16340	225	Tapered
26	16340	17225	885	TCS 4F
27	17225	17450	225	Tapered
28	17450	17737	287	TCS 1D
Total Length=			**9627**	

6. Roadside Drainage

Drainage system including surface and subsurface drains for the Project Highway shall be provided as per the provision of relevant Manual.

RCC Cover drain has been proposed in Built-up Location. The details is given below:

RCC Covered Drain

Chainage (m)		Side	Length (m)	Remarks
From	To			
7985	8210	Both	2X225=450	Tapered Portion
8210	8880	Both	2X670=1340	TCS-4F
8880	9223	Both	2X343=686	TCS-6B1
9223	9500	Both	2X277=554	-
10668	11366	One	1X698=698	TCS-5E
11900	12125	Both	2X225=450	Tapered Portion
12125	12175	Both	2X50=100	TCS-4F
12175	12400	Both	2X225=450	Tapered Portion
12498	12723	Both	2X225=450	Tapered Portion
12723	13454	Both	2X731=1462	TCS-4F
14408	14633	Both	2X225=450	Tapered Portion
14633	15170	Both	2X537=1074	TCS-4F
15170	15395	Both	2X225=450	Tapered Portion
15395	15575	One	1X180=360	TCS-4F2
15575	15800	One	1X225=225	Tapered Portion
16115	16340	Both	2X225=450	Tapered Portion
16340	17225	Both	2X885=1770	TCS-4F
17225	17450	Both	2X225=450	Tapered Portion
Total Length of 1.0m Width Covered Drain =			**11869**	

* The EPC Contractor shall ensure proper functioning of the road side drains by designing them as per site conditions and considering the outfall locations."

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) meter length. If the carriageway width is different from7.5 (seven point five) meters in the table below.]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
1	5.040	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Overall width =24m
2	5.660	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Overall width =24m
3	5.929	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Overall width =24m

(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*
1	1.900	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m
2	4.203	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m
3	7.801	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m
4	8.446	• Carriageway Width= 2x9.5m (Main bridge carriageway width) + 2x8m (service road carriageway width) • Width of Crash Barrier =8x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.30m • Clear Median =2x1m+0.5m • Overall width =45.1 m

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features*
5	9.250	• Carriageway Width = 8.0m • Width of Crash Barrier =2x0.5m • Footpath Width= 1.5m • Kerb Width = 0.30m • Overall width of each bridge =10.8m(on both side)
6	11.467	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m
7	12.439	• Carriageway Width = 9.5m • Width of Crash Barrier =2x0.5m • Footpath Width= 1.5m • Kerb Width = 0.50m • Overall width =12.5 m
8	15.843	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m
9	17.557	• Carriageway Width= 2x9.5m • Median Width= 3m • Width of Crash Barrier =4x0.5m • Footpath Width= 2x1.5m • Kerb Width = 2x0.50m • Overall width =28m

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

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

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

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

Sl.No.	Bridge at km	Utility service Tobecarried	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.

(iv) Culverts

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

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

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

Sl. No.	Culvert location (Design Ch.) (Km)	Span of existing culvert (m)	Span of proposed culvert (m)	Repairs to be carried out	Remarks
1	1.447	1X5.77 M	1 X 4.0 X 5.0_EC	Reconstruction	Cast-in-situ
2	11.637	1X0.9 M	1 X 2.0m X 2.0m	Reconstruction	RCC segmental box
3	11.755	2 X1.2m	1 X 3.0m X 4.0m	Reconstruction	Cast-in-situ
4	13.998	1 X 3.0m	1 X 3.0m X 4.0m	Reconstruction	Cast-in-situ
5	15.326	1 X 1.0m	1 X 2.0m X 3.0m	Reconstruction	RCC segmental box
6	16.411	1 X 1.2m	1 X 3.0m X 4.0m	Reconstruction	Cast-in-situ
7	16.661	1 X 1.2m	1 X 2.0m X 3.0m	Reconstruction	RCC segmental box
8	17.029	1 X 1.2m	1 X 2.0m X 3.0m	Reconstruction	RCC segmental box

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

(c) Widening of existing culverts:

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

Sl. No.	Culvert location (Design Ch.) (Km)	Span of existing culvert (m)	Span of proposed 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 (Design Ch.) (Km)	Span /Opening (m)	Remarks*
1	0.233	1 X 4.0 m X 5.0 m	Cast-in-situ
2	0.424	1 X 4.0 m X 5.0 m	Cast-in-situ
3	0.923	1 X 4.0 m X 5.0 m	Cast-in-situ
4	1.192	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
5	1.688	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
6	2.065	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
7	2.300	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
8	2.468	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
9	2.725	1 X 4.0 m X 5.0 m _EC	Cast-in-situ

Sl. No.	Culvert Location (Design Ch.) (Km)	Span /Opening (m)	Remarks*
10	2.855	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
11	3.125	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
12	3.221	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
13	3.310	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
14	3.405	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
15	4.356	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
16	4.505	1 X 4.0 m X 5.0 m	Cast-in-situ
17	4.562	1 X 4.0 m X 5.0 m	Cast-in-situ
18	4.667	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
19	6.265	1 X 4.0 m X 5.0 m	Cast-in-situ
20	6.527	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
21	6.682	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
22	6.769	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
23	6.889	1 X 4.0 m X 5.0 m	Cast-in-situ
24	7.107	1 X 2.0 m X 2.0 m	RCC segmental box
25	7.374	1 X 2.0 m X 2.0 m	RCC segmental box
26	7.652	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
27	7.932	1 X 2.0 m X 2.0 m	RCC segmental box
28	8.098	1 X 2.0 m X 3.0 m	RCC segmental box
29	8.709	1 X 2.0 m X 2.0 m	RCC segmental box
30	9.031	1 X 2.0 m X 3.0 m	RCC segmental box
31	9.649	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
32	9.879	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
33	10.399	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
34	10.519	1 X 4.0 m X 5.0 m	Cast-in-situ
35	12.219	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
36	12.731	1 X 4.0 m X 5.0 m	Cast-in-situ
37	13.048	1 X 4.0 m X 5.0 m	Cast-in-situ
38	13.358	1 X 4.0 m X 5.0 m _EC	Cast-in-situ
39	13.780	1 X 2.0 m X 2.0 m	RCC segmental box
40	14.234	1 X 2.0 m X 2.0 m	RCC segmental box
41	14.825	1 X 3.0 m X 4.0 m	Cast-in-situ
42	15.585	1 X 2.0 m X 3.0 m	RCC segmental box
43	16.043	1 X 2.0 m X 2.0 m	RCC segmental box
44	16.277	1 X 3.0 m X 4.0 m	Cast-in-situ
45	17.309	1 X 2.0 m X 2.0 m	RCC segmental box
46	17.692	1 X 2.0 m X 2.0 m	RCC segmental box

*The span and opening of these culverts as specified are indicative. The design of waterway has to be done as per site requirement, considering the site requirements. Any change in this configuration shall not attract provisions of Article 13 of this Agreement.

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

[Refer provision of the relevant Manual and provide details]

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

(e) Floor protection works shall be as specified in the relevant IRC Codesand Specifications.

(iii) Bridges

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

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

[Refer provision of the relevant Manual and provide details]

Sl. No.	Salient details of existing bridge			Salient details of proposed bridge			Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Total Width (m)	Remarks
	Bridge location(km)	Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)	Bridge location(km)	Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)			
1	6.244	RCC Slab	1 x 6m	0.664	RCC Box	1 x 6m x 6m	-	30.2	Reconstruction Minor Bridge
2	15.347	RCC Slab	3 x 7.95m	7.801	RCC Integral Voided Slab	1 x 24m	-	28	Reconstruction Minor Bridge
3	15.994	RCC Slab	1 x 6m	8.446	RCC Box	1 x 6m x 3m	-	45.1	Reconstruction Minor Bridge with Service road bridges
4	16.797	RCC Slab	1 x 6m	9.250	RCC Box (vertical gradient)	1 x 8m x 4m	-	21.6	Reconstruction minor bridge (Both side service road bridge)
5	19.347	RCC Slab	9.3m+8.9m	11.467	RCC Integral Voided Slab(with longitudinal gradient)	1 x 24m	-	28	Reconstruction Minor Bridge
6	23.738	RCC Slab	1 x 6m	15.843	RCC Box	1 x 6m x 3m	-	28	Reconstruction Minor Bridge
7	25.452	RCC Slab	5 x 7.5m	17.557	RCC Box	5 x 8m x 6m	-	28	Reconstruction Minor Bridge

*Attach GAD

* The span and opening of these bridges as specified are indicative. The design of waterway has to be done as per site requirement, considering the site requirements. Any change in this configuration shall not attract provisions of Article 13 of this Agreement

(ii) The following narrow bridges shall be widened:

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

@ Attach cross-section

(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)	Total Width (m)	Remarks. If any
1	1.900	2 x 24m	28	RCC Integral Voided Slab, New construction Minor Bridge
2	4.203	1 x 40m	28	PSC T Girder, New construction Minor Bridge
3	5.040	1 x 35m + 11 x 40m + 1 x 20.8m + 2 x 30m	24	RCC T Beam + PSC T Girder , Viaduct
4	5.660	1 x 20.8m + 1 x 30m+ 6 x 40m + 2 x 35m + 1 x 15m	24	RCC T Beam + PSC T Girder + Simply Supported Voided Slab, Viaduct
5	5.929	2 x 40m	24	PSC T Girder, Viaduct
6	12.439	1 x 42m	12.5	PSC T Girder, Additional Two lane Minor Bridge

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

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

Sl.No.	Location at km	Remarks
1	12.439	**-**

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

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

Sl.No.	Location at km	Remarks
Nil		

(e) Drainage system for bridge decks

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

(f) Structures in marine environment

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

(iv) Rail-road bridges

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

(b) Road over-bridges

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

Sl. No.	Location of Level crossing (Chainage km)	Length of ROB (m)	Width of the ROB
1	5.371	1 x 36m + (1 x 72m) + 1 x 36m	**Bowstring Girder + Composite Girder:** Carriageway Width= 2x9.5m Overall width =29.2m

(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)	Remarks
Nil			

(v) Grade separated structures

[Refer provision of the relevant Manual]

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2(ix) 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
1	12.439	Patch repair of Concrete Surface, Removal of existing wearing coat, Laying of new wearing Course (Bituminous Concrete+MasticAsphalt+Tack Coat), Painting on concrete surface

(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 andStructures

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

Sl.No.	Location (km)
Viaduct	
1	5.040
2	5.660
3	5.929
ROB	
1	5.371

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	unit	Quantity
1	Right Hand Side Curve(900 mm Triangular)	Nos.	58
2	Left Hand Side Curve(900 mm Triangular)	Nos.	52
3	School (900 mm Triangular)	Nos.	36
4	Side road left(900 mm Triangular)	Nos.	80
5	Side road right(900 mm Triangular)	Nos.	76
6	Bus Stop(800 mm x 600 mm rectangular)	Nos.	2
7	Direction Sign<.0.9 sqm	Nos.	10
8	Stop Sign(900 mm Octagonal)	Nos.	156
9	Horn prohibited(600mm Circular)	Nos.	36
10	Hazard Marker (one way) (900mm x300 mm rectangular)	Nos.	264
11	Object Marker (one way) (900mm x300 mm rectangular)	Nos.	2
12	Rumble strip	Nos.	160
13	Road Stud	Nos.	2696
14	Built-up area(900 mm Triangular)	Nos.	20
15	Delineator	Nos.	600
16	Lane marking, edge marking	Sqm	14300
17	Cats Eye	Nos.	21202
18	Hexagonal woven mesh fencing	Rm	8436
19	Solar Bilnker	Nos	4

*All above quantities are minimum to be installed/executed

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

9. Road side Furniture

(i) Roadside furniture shall be provided in accordance with the provision of relevant Manual.

(ii) Overhead traffic signs: location and size

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

Sl. No.	Location (Km)	Size
1	0.150	Minimum Clear Span of 24.5m.(Ref TCS-1D)and minimum clear height from road top level shall be 6.0m

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. Hazard Location

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

a) Breast wall

Location		Side	Length (km)
From(km)	To(km)		
3.570	3.630	Both	0.120
3.710	3.850	Left	0.140
11.665	11.835	Left	0.170
		Total length=	0.430

*The specified length of Breast wall is the minimum requirement

b) Retaining wall

Location		Side	Length (km)
From(km)	To(km)		
Main Carriageway			
0.200	1.200	Both	2.000
1.540	1.650	Both	0.220
1.610	1.650	Both	0.080
1.650	2.460	Both	1.620
2.460	2.510	Both	0.100
2.510	2.550	Both	0.080
2.550	2.900	Both	0.700
2.900	2.980	Both	0.160
2.980	3.100	Both	0.240
3.100	3.330	Both	0.460
3.330	3.400	Both	0.140
3.400	3.520	Both	0.240
3.710	3.850	One	0.140
4.180	4.240	Both	0.120
4.500	4.740	Both	0.480
5.965	6.106	Both	0.282
6.106	6.350	Both	0.488
9.678	9.950	Both	0.544
9.950	10.688	Both	1.476
11.365	11.585	Both	0.440
11.865	12.225	Both	0.720
12.225	12.700	Both	0.950
Service Road			

Location		Side	Length (km)
From(km)	To(km)		
9.500	9.950	Both	0.900
Total length=			12.580

*The specified length of Retaining wall is the minimum requirement

c) Toe wall

Main Carriageway:

Location		Side	Length (km)
From(km)	To(km)		
0.000	0.598	Both	1.196
0.800	1.540	Both	1.480
10.685	11.365	Left	0.680
11.585	11.865	Both	0.560
15.435	15.815	Left	0.380
Total length=			**4.296**

*The specified length of Toe wall is the minimum requirement

d) Reinforced Earth Wall

Location		Length (km)
From(km)	To(km)	
1.200	1.540	0.340
6.350	7.225	0.875
8.880	9.223	0.343
Total length=		**1.558**

*The specified length of Reinforcedearthwall is the minimum requirement

e) Turfing

Turfing has been provided of 114792sqm

*The specified area ofTurfingis the minimum requirement

f) Thrie-Metal Beam Crash Barrier

Thrie-Metal beam crash barrier of 10700m length has been proposed in the project stretch.

*The specified length Thrie-Metal beam Crash Barrier is the minimum requirement

g) Stone Pitching

Location		side	Length(km)
From(km)	To(km)		
Main Carriageway			
1.540	1.650	Both	0.220
1.650	2.460	Both	1.620
2.500	3.330	Both	1.660

Location		side	Length(km)
From(km)	To(km)		
3.400	3.520	Both	0.240
4.050	4.350	Both	0.600
4.170	4.240	Both	0.140
5.968	6.109	Both	0.282
9.678	9.950	Both	0.544
Total length=			5.306

*The specified length of Stone Pitchingis the minimum requirement

h) Chute Drain

Chute drain has been proposed of 1060m

*The specified length of Chute Drainis the minimum requirement

i) Ground Improvement by Sand Piling details are given below.

Chainage(km)		Length(km)
from	to	
1.600	3.500	1.900
6.415	6.665	0.250
Total Length=		**2.150**

12. Special Requirement for Hill Roads

Not applicable.

13. Change of Scope

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

(Schedule B-1)

1. The shifting of utilities and felling of trees shall be carried out by the Contractor. The cost of the same shall be borne by the Authority. The details of proposed utilities are as follows:

The details of proposed electrical utility is given below.

S.No	Description	Unit	Quantity
1	SP- 76	No	181
2	SP-80	No	420
3	SP-60	No	1386
4	PSC-9.75	No	60
5	Transformer	No	35

The details of proposed PHE utility is given below

S.No	Description	Unit	Quantity
1	75MM	RM	880
2	100MM- GI	RM	200
3	125MM-GI	RM	40
4	80MM-GI	RM	80
5	110MM	RM	3025
6	90MM	RM	40
7	50MM	RM	560

** The quantity given above is indicative, the contractor has to finalize the actual requirement of shifting of various utilities in due consultation with Authority's Engineer and Authority, duly verified by the concerned utility authorities and approved by authority".

APPENDIX B – I of Annexure – I
(Schedule B-2)

The Plan & Profile & General Arrangement Drawing(GAD) of structures of the project Highway are given in soft copy.

Schedule - C

(See Clause 2.1)

Project Facilities

1. Project Facilities

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

(a) Toll plaza[s]

(b) Road side furniture;

(c) Pedestrian facilities;

(d) Tree plantation;

(e) Truck Lay byes;

(f) Bus-bays and passenger shelters;

(g) Rest areas; and

(h) 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	Remarks
1	0.736	Chirakuta	8 Lane Toll Plaza

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.

b) Road side furniture:-

Sl. No.	Description	Location	Design Standard
1	Traffic sign & pavement marking	Entire Length (As per Schedule B)	As per Manual
2	Km Stone, 5th kilometre stone	Entire Length	As per Manual
3	Boundary Stone	Entire Length	As per Manual
4	Road side 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 covered drain cum foot path shall be provided in the built up area (refer typical cross – section drawing). Pedestrian facilities shall be provided at the locations of Built up 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 with Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Name of the Place
1	Bus Bay with Passenger shelter	14.268(Both side)	Near Aryarjhar

f) Rest Areas

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

g) Roadside Amenities

Nil

h) Others to be specified

Foot Over Bridge:

Foot over bridge has been proposed at market location. The details is given below.

Sl.No	Design Ch.(km)	Location	Remarks
1	8.088	Hatipota	Foot Over Bridge (FOB) shall have minimum clear width of 3.0m with provision of 4 sided stairs. Minimum clear height from road top level shall be 6.0m and minimum clear span shall be as per proposed road TCS at FOB locations. Foot Over Bridge (FOB) shall be aesthetically pleasant and shall reflect cultural heritage of Assam.
2	12.826	Dhirghat	
3	15.352	Areajhar	
4	17.303	Mowatari	

Street Lighting:

(i) Minimum 232 Nos. Street lights shall be provided in Built up, Busbay with Passenger Shelter & Major Junction locations or any other location as per the satisfaction of Authority's Engineers.

(ii) The EPC Contractor will obtain all permissions/load sanctions/power supply, etc. from the Electricity Authorities. The Contractor shall be solely responsible for submission of application along with all necessary documents to supply authority.

Further the Contractor shall be responsible for follow up of the application and getting the release of the supply to lighting. All statutory approvals/permissions have to be obtained by the Contractor for energizing/operating the lights

Utility Duct:

Nil

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 Four Lanning of Highways (IRC: SP: 84-2014 and IRC: SP: 84-2019), 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 [Four-Lanning of Highways (IRC:SP:84-2014 and IRC: SP: 84-2019)], 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:]