

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 Four – Laning

Four – Laning shall include construction of Four – Lane 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)

Four Laning of Balachera to Harangajo section of NH-54 (Ext) from km 275.000 to km 244.000 in the State of Assam on EPC Basis.

**1 FOUR – LANING PROJECT HIGHWAY WITH PAVED SHOULDERS
CONFIGURATION OF THE EXISTING PROJECT HIGHWAY**

- 1.1.1 The Project Highway shall follow the existing alignment unless otherwise specified by the Authority and shown in the alignment plans specified in Annex-III of Schedule-A. Geometric deficiencies, if any, in the existing horizontal and vertical profiles shall be corrected as per the prescribed standards for Hilly/ Mountainous terrain to the extent land is available.
- 1.1.2 The Project Highway starts from km 275.000 and ends at km 244.000 in the state of Assam. Therefore, total length of the Project Highway section along the existing alignment is 31.000 km while along proposed alignment it comes to 25.250 km.
- 1.1.3 The location of existing kilometer stones and corresponding proposed design chainages are as below:

S.No.	Existing Chainage (km)	Proposed Chainage (km)
1	244	244
2	245	244.98
3	246	245.911
4	248	247.48
5	249	248.11
6	250	248.985
7	252	250.65
8	254	252.448
9	256	254.355
10	259.1	256.97
11	261	258.705
12	263	260.365
13	265	261.835
14	267.045	263.9
15	269	264.71
16	271	265.48
17	273	267.295
18	274	268.235
19	275	269.25

- 1.1.4 Existing road is to be dismantled and sub grade of existing road has to be used wherever possible.

1.2 WIDTH OF CARRIAGEWAY

- 1.2.1 Four-Laning with paved shoulders shall be undertaken. The paved carriageway shall be 2 x 7.5 m wide in accordance with the typical cross sections given in para 2.11 of Annexure I of Schedule B. In general roadway width shall be 21.50 m which includes 2 x 7.50 m main carriageway and 2 x 1.50 m paved, 1.50 median and 1.00 m earthen shoulders on both the sides as per typical cross sections given in para 2.11 of Annexure I of schedule B.

Provided that in the built-up areas typical cross-section shall be as per Figure 2.6 of the manual with full width of 2 x 7.5 m carriageway shall be paved and provision of 1.5 m raised footpath cum drains

both the sides.

Sl. No.	Built-up stretch (Township)	Location (km to km)	Width (m)	Typical cross section (Ref. to Manual)
NIL				

- 1.2.2 Except as otherwise provided in this Agreement, the width of the paved carriage way and cross-sectional features shall conform to paragraph 1.1 above.

2 GEOMETRIC DESIGN AND GENERAL FEATURES

2.1 General

Geometric design and general features of the Project Highway shall be in accordance with Section 2 of the Manual IRC SP: 84-2014.

2.2 Design speed

The design speed shall be as per clause 2.2 of IRC:SP:84-2014.

2.3 Improvement of the existing road geometrics

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

2.4 Right of Way

Details of the Right of Way are given in Annexure II of Schedule-A.

2.5 Type of shoulders

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

Sl. No.	Stretch (from km to km)	Fully paved shoulders/ footpaths	Reference to cross section
NIL			

- (b) In open country Paved Shoulders of 1.50 m width and balance 1.0 m width shall be covered with 150 mm thick compacted layer of granular material. (Figures 2.9 of manual)
- (c) Design and specifications of paved shoulders and granular material shall conform to the requirements specified in paragraphs 5.10 and 5.11 of the Manual.

2.6 Lateral and vertical clearances at underpasses

- 2.6.1 Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per paragraph 2.10 of the Manual.

- 2.6.2 Lateral clearance: The width of the opening at the underpasses shall be as follows:

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

2.7 Lateral and vertical clearances at overpasses

2.7.1 Lateral and vertical clearances at overpasses shall be as per paragraph 2.11 of the Manual.

2.7.2 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			

2.8 Service roads

Service roads shall be constructed at the locations and for the lengths indicated below

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			

2.9 Grade separated structures

2.9.1 Grade separated structures shall be provided as per paragraph 2.13 of the Manual. The requisite particulars are given below:

S. No.	Location of structure	Length (m)	Number and Length of spans (m)	Approach gradient	Remarks, if any
Nil					

2.9.2 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:

S. No.	Location	Type of Structure Length (m)	Cross Road at			Remarks, if any
			Existing Level	Raised Level	Lowered Level	
Not Applicable						

2.10 Cattle and pedestrian underpass /overpass

Cattle and pedestrian underpass /overpass shall be constructed as follows:

Sl. No.	Location	Type of crossing
Nil		

2.11 Typical Cross-Sections of the Project Highway

S. No.	Design Chainage		Design Length (in km)	TCS	TCS Description
	From	To			
1	244	244.75	0.75	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m

S.	Design Chainage		Design Length	TCS	TCS Description
2	244.75	244.95	0.2	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
3	244.95	246	1.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
4	246	246.1	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
5	246.1	246.15	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
6	246.15	246.2	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
7	246.2	246.6	0.4	1	TCS-1 : Road Cross Section in Cut Section
8	246.6	246.7	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
9	246.7	246.75	0.05	1	TCS-1 : Road Cross Section in Cut Section
10	246.75	246.95	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
11	246.95	247	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
12	247	247.15	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
13	247.15	247.2	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
14	247.2	247.35	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
15	247.35	247.4	0.05	1	TCS-1 : Road Cross Section in Cut Section
16	247.4	247.5	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
17	247.5	247.55	0.05	1	TCS-1 : Road Cross Section in Cut Section
18	247.55	247.7	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
19	247.7	247.75	0.05	1	TCS-1 : Road Cross Section in Cut Section
20	247.75	247.8	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
21	247.8	247.85	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
22	247.85	247.95	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
23	247.95	248.05	0.1	1	TCS-1 : Road Cross Section in Cut Section
24	248.05	248.25	0.2	2	TCS- 2: Road Cross Section in Cut & Filling
25	248.25	248.3	0.05	1	TCS-1 : Road Cross Section in Cut Section
26	248.3	248.35	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
27	248.35	248.4	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m

S.	Design Chainage		Design Length	TCS	TCS Description
28	248.4	248.5	0.1	1	TCS-1 : Road Cross Section in Cut Section
29	248.5	248.6	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
30	248.6	248.65	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
31	248.65	248.7	0.05	1	TCS-1 : Road Cross Section in Cut Section
32	248.7	248.75	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
33	248.75	248.95	0.2	1	TCS-1 : Road Cross Section in Cut Section
34	248.95	249	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
35	249	249.15	0.15	2	TCS- 2: Road Cross Section in Cut & Filling
36	249.15	249.2	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
37	249.2	249.25	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
38	249.25	249.3	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
39	249.3	249.35	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
40	249.35	249.45	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
41	249.45	249.8	0.35	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
42	249.8	249.9	0.1	1	TCS-1 : Road Cross Section in Cut Section
43	249.9	249.95	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
44	249.95	250	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
45	250	250.2	0.2	1	TCS-1 : Road Cross Section in Cut Section
46	250.2	250.25	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
47	250.25	250.3	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
48	250.3	250.35	0.05	1	TCS-1 : Road Cross Section in Cut Section
49	250.35	250.6	0.25	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
50	250.6	250.7	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
51	250.7	250.75	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
52	250.75	250.8	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
53	250.8	250.85	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
54	250.85	250.95	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
55	250.95	251.1	0.15	1	TCS-1 : Road Cross Section in Cut Section

S.	Design Chainage		Design Length	TCS	TCS Description
56	251.1	251.15	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
57	251.15	251.4	0.25	1	TCS-1 : Road Cross Section in Cut Section
58	251.4	251.45	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
59	251.45	251.5	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
60	251.5	251.55	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
61	251.55	251.6	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
62	251.6	251.7	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
63	251.7	251.85	0.15	2	TCS- 2: Road Cross Section in Cut & Filling
64	251.85	251.95	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
65	251.95	252.4	0.45	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
66	252.4	252.45	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
67	252.45	252.5	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
68	252.5	252.55	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
69	252.55	252.6	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
70	252.6	252.9	0.3	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
71	252.9	253.05	0.15	1	TCS-1 : Road Cross Section in Cut Section
72	253.05	253.1	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
73	253.1	253.2	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
74	253.2	253.25	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
75	253.25	253.3	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
76	253.3	253.7	0.4	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
77	253.7	253.75	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
78	253.75	253.95	0.2	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall

S.	Design Chainage		Design Length	TCS	TCS Description
79	253.95	254	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
80	254	254.05	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
81	254.05	254.1	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
82	254.1	254.15	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
83	254.15	254.25	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
84	254.25	254.3	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
85	254.3	254.4	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
86	254.4	254.5	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
87	254.5	254.75	0.25	1	TCS-1 : Road Cross Section in Cut Section
88	254.75	254.8	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
89	254.8	254.9	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
90	254.9	255	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
91	255	255.1	0.1	1	TCS-1 : Road Cross Section in Cut Section
92	255.1	255.2	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
93	255.2	255.25	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
94	255.25	255.4	0.15	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
95	255.4	255.5	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
96	255.5	255.65	0.15	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
97	255.65	255.7	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
98	255.7	255.75	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
99	255.75	256	0.25	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
100	256	256.05	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
101	256.05	256.25	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
102	256.25	256.3	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
103	256.3	256.35	0.05	2	TCS- 2: Road Cross Section in Cut & Filling

S.	Design Chainage		Design Length	TCS	TCS Description
104	256.35	256.4	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
105	256.4	256.5	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
106	256.5	256.55	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
107	256.55	256.65	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
108	256.65	256.7	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
109	256.7	256.75	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
110	256.75	256.8	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
111	256.8	257	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
112	257	257.2	0.2	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
113	257.2	257.25	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
114	257.25	257.5	0.25	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
115	257.5	257.55	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
116	257.55	257.6	0.05	1	TCS-1 : Road Cross Section in Cut Section
117	257.6	257.65	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
118	257.65	257.95	0.3	2	TCS- 2: Road Cross Section in Cut & Filling
119	257.95	258	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
120	258	258.35	0.35	1	TCS-1 : Road Cross Section in Cut Section
121	258.35	258.45	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
122	258.45	258.5	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
123	258.5	258.7	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
124	258.7	258.75	0.05	1	TCS-1 : Road Cross Section in Cut Section
125	258.75	258.8	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
126	258.8	258.85	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
127	258.85	258.9	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
128	258.9	258.95	0.05	1	TCS-1 : Road Cross Section in Cut Section
129	258.95	259.05	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
130	259.05	259.1	0.05	2	TCS- 2: Road Cross Section in Cut & Filling

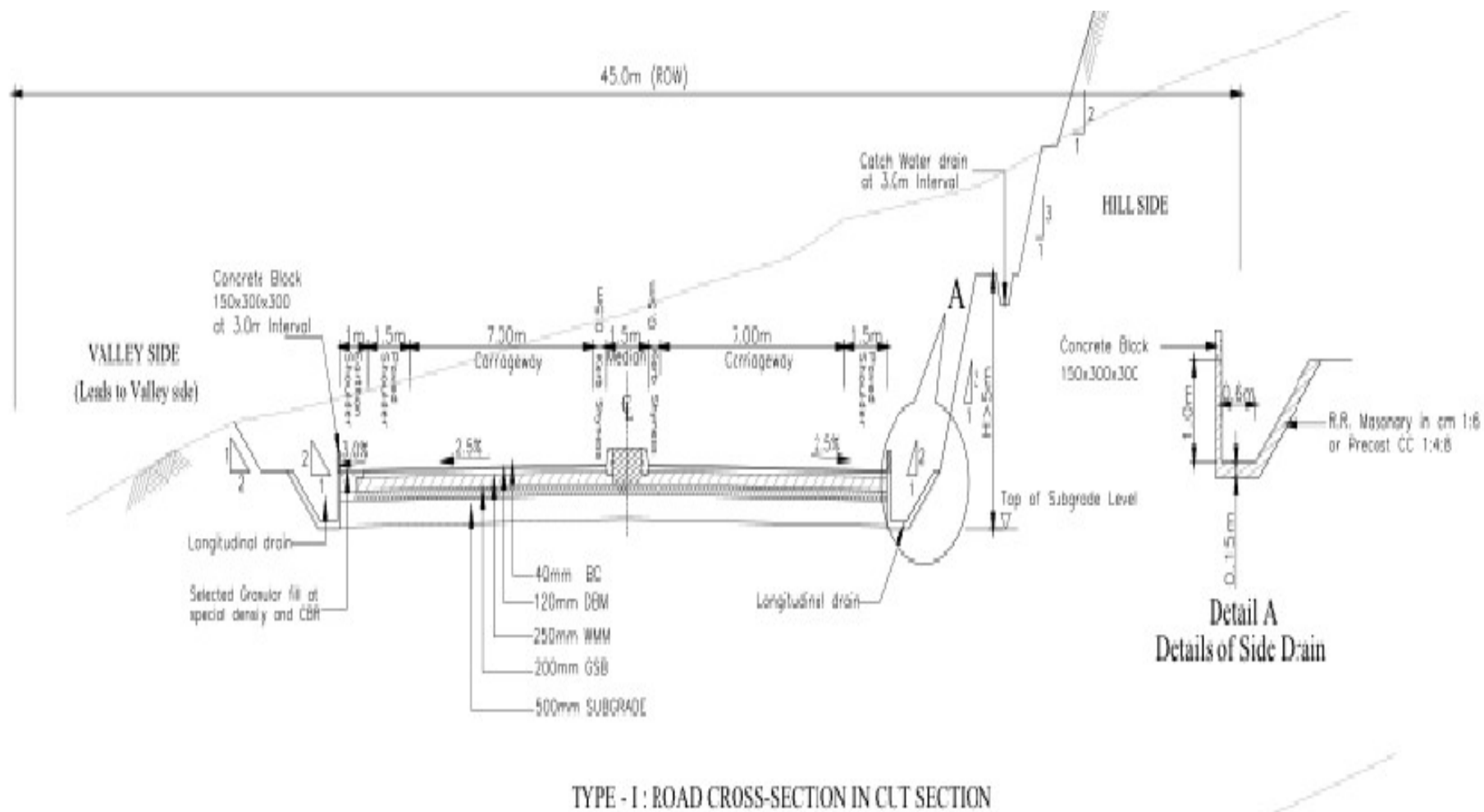
S.	Design Chainage		Design Length	TCS	TCS Description
131	259.1	259.3	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
132	259.3	259.45	0.15	1	TCS-1 : Road Cross Section in Cut Section
133	259.45	259.5	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
134	259.5	259.55	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
135	259.55	259.65	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
136	259.65	259.7	0.05	1	TCS-1 : Road Cross Section in Cut Section
137	259.7	259.75	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
138	259.75	259.9	0.15	2	TCS- 2: Road Cross Section in Cut & Filling
139	259.9	260	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
140	260	260.05	0.05	1	TCS-1 : Road Cross Section in Cut Section
141	260.05	260.1	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
142	260.1	260.15	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
143	260.15	260.2	0.05	1	TCS-1 : Road Cross Section in Cut Section
144	260.2	260.25	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
145	260.25	260.3	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
146	260.3	260.35	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
147	260.35	260.4	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
148	260.4	260.45	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
149	260.45	260.5	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
150	260.5	260.55	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
151	260.55	260.6	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
152	260.6	260.7	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
153	260.7	260.75	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
154	260.75	260.95	0.2	2	TCS- 2: Road Cross Section in Cut & Filling
155	260.95	261	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall

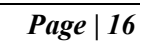
S.	Design Chainage		Design Length	TCS	TCS Description
156	261	261.6	0.6	1	TCS-1 : Road Cross Section in Cut Section
157	261.6	261.7	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
158	261.7	261.75	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
159	261.75	261.85	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
160	261.85	261.95	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
161	261.95	262	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
162	262	262.05	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
163	262.05	262.15	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
164	262.15	262.35	0.2	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
165	262.35	262.4	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
166	262.4	262.45	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
167	262.45	262.55	0.1	1	TCS-1 : Road Cross Section in Cut Section
168	262.55	262.6	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
169	262.6	262.7	0.1	1	TCS-1 : Road Cross Section in Cut Section
170	262.7	262.85	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
171	262.85	262.95	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
172	262.95	263	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
173	263	263.05	0.05	1	TCS-1 : Road Cross Section in Cut Section
174	263.05	263.15	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
175	263.15	263.2	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
176	263.2	263.35	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
177	263.35	263.55	0.2	1	TCS-1 : Road Cross Section in Cut Section
178	263.55	263.6	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
179	263.6	263.65	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
180	263.65	263.7	0.05	1	TCS-1 : Road Cross Section in Cut Section

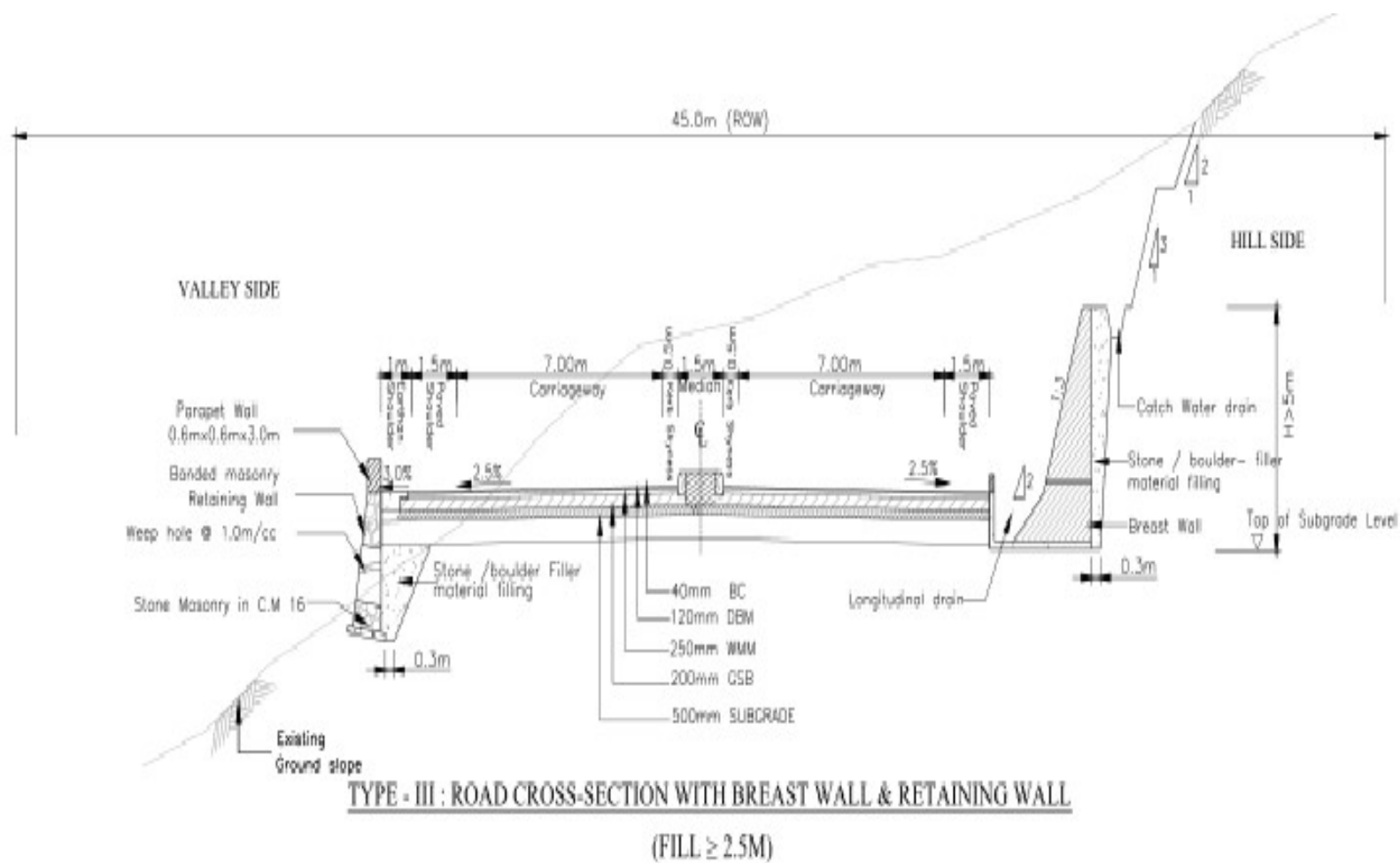
S.	Design Chainage		Design Length	TCS	TCS Description
181	263.7	263.75	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
182	263.75	263.95	0.2	1	TCS-1 : Road Cross Section in Cut Section
183	263.95	264.05	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
184	264.05	264.25	0.2	1	TCS-1 : Road Cross Section in Cut Section
185	264.25	264.3	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
186	264.3	264.35	0.05	1	TCS-1 : Road Cross Section in Cut Section
187	264.35	264.4	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
188	264.4	264.45	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
189	264.45	264.55	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
190	264.55	264.6	0.05	1	TCS-1 : Road Cross Section in Cut Section
191	264.6	264.65	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
192	264.65	264.7	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
193	264.7	264.75	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
194	264.75	264.85	0.1	1	TCS-1 : Road Cross Section in Cut Section
195	264.85	264.9	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
196	264.9	265	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
197	265	265.1	0.1	1	TCS-1 : Road Cross Section in Cut Section
198	265.1	265.15	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
199	265.15	265.2	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
200	265.2	265.25	0.05	1	TCS-1 : Road Cross Section in Cut Section
201	265.25	265.3	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
202	265.3	265.4	0.1	1	TCS-1 : Road Cross Section in Cut Section
203	265.4	265.45	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
204	265.45	265.5	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
205	265.5	265.55	0.05	1	TCS-1 : Road Cross Section in Cut Section
206	265.55	265.6	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
207	265.6	265.65	0.05	1	TCS-1 : Road Cross Section in Cut Section
208	265.65	265.8	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m

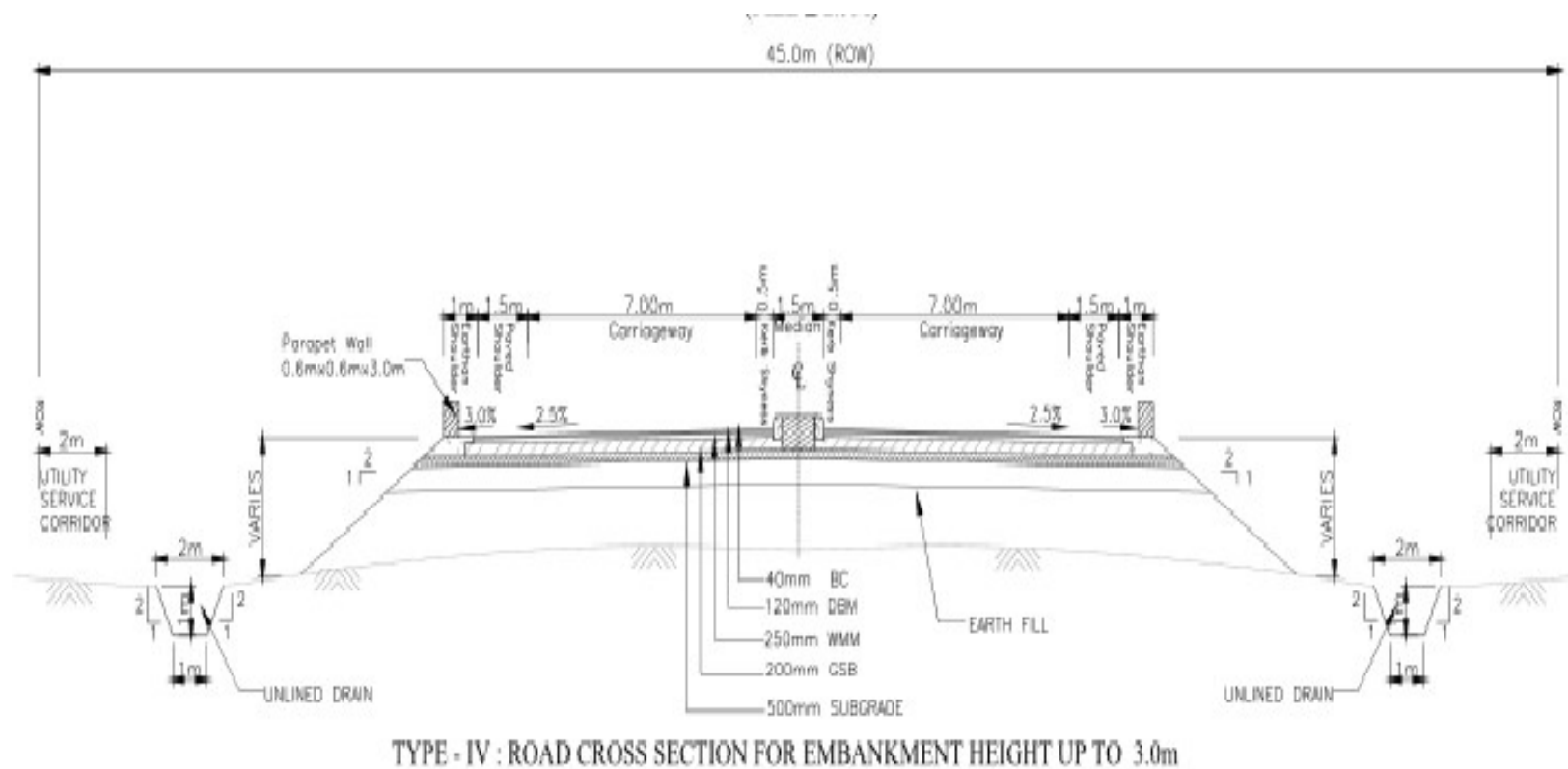
S.	Design Chainage		Design Length	TCS	TCS Description
209	265.8	265.9	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
210	265.9	266.15	0.25	1	TCS-1 : Road Cross Section in Cut Section
211	266.15	266.2	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
212	266.2	266.25	0.05	1	TCS-1 : Road Cross Section in Cut Section
213	266.25	266.3	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
214	266.3	266.35	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
215	266.35	266.5	0.15	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
216	266.5	266.55	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
217	266.55	266.6	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
218	266.6	267.05	0.45	2	TCS- 2: Road Cross Section in Cut & Filling
219	267.05	267.1	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
220	267.1	267.15	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
221	267.15	267.25	0.1	2	TCS- 2: Road Cross Section in Cut & Filling
222	267.25	267.55	0.3	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
223	267.55	267.6	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
224	267.6	267.65	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
225	267.65	267.8	0.15	2	TCS- 2: Road Cross Section in Cut & Filling
226	267.8	268	0.2	1	TCS-1 : Road Cross Section in Cut Section
227	268	268.25	0.25	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
228	268.25	268.35	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
229	268.35	268.4	0.05	1	TCS-1 : Road Cross Section in Cut Section
230	268.4	268.45	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
231	268.45	268.5	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
232	268.5	268.6	0.1	1	TCS-1 : Road Cross Section in Cut Section
233	268.6	268.65	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
234	268.65	268.7	0.05	2	TCS- 2: Road Cross Section in Cut & Filling

S.	Design Chainage		Design Length	TCS	TCS Description
235	268.7	268.85	0.15	1	TCS-1 : Road Cross Section in Cut Section
236	268.85	268.95	0.1	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
237	268.95	269	0.05	2	TCS- 2: Road Cross Section in Cut & Filling
238	269	269.1	0.1	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m
239	269.1	269.15	0.05	3	TCS-3 : Road Cross Section with Breast wall & Retaining wall
240	269.15	269.2	0.05	1	TCS-1 : Road Cross Section in Cut Section
241	269.2	269.25	0.05	4	TCS 4 - Road Cross section for Embankment Height up to 3.0 m









3 INTERSECTIONS AND GRADE SEPARATORS

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

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

(a) At-Grade Intersections

S. No.	Location of intersection	Type of intersection	Other features
NIL			

(b) Grade Separated Intersection With/ Without Ramps

S. 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

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

4.2 Raising of the existing road

The existing road shall be raised in the following sections:

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

5 PAVEMENT DESIGN

5.1 Pavement design shall be carried out in accordance with Section 5 of the Manual.

5.2 Type of pavement

The pavement shall be Flexible pavement.

5.3 Design requirements

5.3.1 Design Period and strategy

Flexible pavement for new pavement and for widening and strengthening of the existing pavement shall be designed for a minimum design period of 15 years. Stage construction shall not be permitted.

5.3.2 Design Traffic

Notwithstanding anything to the contrary contained in this Agreement or the Manual, the Contractor shall design the pavement for design traffic of 60 million standard axles.

5.4 Reconstruction of stretches

The following stretches of the existing road shall be reconstructed as new construction:

S. No.	From Chainage	To Chainage	Length (m)
--------	---------------	-------------	------------

S. No.	From Chainage	To Chainage	Length (m)
Entire Length of the project highway shall be reconstructed			

6 ROADSIDE DRAINAGE

Drainage system including surface and subsurface drains for the Project Highway shall be provided all along the road both sides as per Section 6 of the Manual.

7 DESIGN OF STRUCTURES

7.1 General

7.1.1 All bridges, culverts and structures shall be designed and constructed in accordance with Section 7 of the Manual and shall conform to the cross-sectional features and other details specified therein.

7.1.2 Width of the carriageway of new bridges and structures shall be as follows:

Sl. No.	Bridge at km	Width of carriageway and cross-sectional features
NIL		

7.1.3 The following structures shall be provided with footpath:

Sl. No.	Location at km	Remarks
NIL		

7.1.4 All bridges shall be high-level bridges.

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

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

7.1.6 Cross-section of the new culverts and bridges at deck level for the Project Highway shall conform to the typical cross-sections given in Section 7 of the Manual.

7.2 Culverts:

7.2.1 Overall width of all culverts shall be equal to the roadway width of the approaches.

7.2.2 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, if any
NIL			

7.2.3 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 Section 7 of the 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			

7.2.4 Additional new culverts shall be constructed as per particulars given in the table below:

S. No.	Culvert location	Type of structure	Span/opening (m)
1	244.465	Box Culvert	1 x 2 x 3
2	244.565	Box Culvert	1 x 2 x 3
3	244.700	Box Culvert	1 x 2 x 3
4	244.770	Box Culvert	1 x 2 x 3
5	244.835	Box Culvert	1 x 2 x 3
6	244.880	Box Culvert	1 x 2 x 3
7	245.090	Box Culvert	1 x 2 x 3
8	245.265	Box Culvert	1 x 2 x 3
9	245.465	Box Culvert	1 x 2 x 3
10	245.665	Box Culvert	1 x 2 x 3
11	245.945	Box Culvert	1 x 2 x 3
12	246.095	Box Culvert	1 x 2 x 3
13	247.050	Box Culvert	1 x 3 x 3
14	247.260	Box Culvert	1 x 3 x 3
15	247.420	Box Culvert	1 x 3 x 3
16	247.603	Box Culvert	1 x 2 x 3
17	247.765	Box Culvert	1 x 2 x 3
18	247.870	Box Culvert	1 x 3 x 3
19	248.065	Box Culvert	1 x 2 x 3
20	248.345	Box Culvert	1 x 2 x 3
21	248.515	Box Culvert	1 x 3 x 3
22	248.950	Box Culvert	1 x 3 x 3
23	249.105	Box Culvert	1 x 2 x 3
24	249.145	Box Culvert	1 x 2 x 3
25	249.375	Box Culvert	1 x 3 x 3
26	249.620	Box Culvert	1 x 2 x 3
27	249.675	Box Culvert	1 x 2 x 3
28	250.535	Box Culvert	1 x 2 x 3
29	250.625	Box Culvert	1 x 2 x 3
30	250.745	Box Culvert	1 x 2 x 3
31	251.440	Box Culvert	1 x 3 x 3
32	251.535	Box Culvert	1 x 3 x 3
33	251.675	Box Culvert	1 x 3 x 3
34	251.850	Box Culvert	1 x 2 x 3
35	252.100	Box Culvert	1 x 2 x 3
36	252.305	Box Culvert	1 x 2 x 3
37	252.550	Box Culvert	1 x 2 x 3
38	253.205	Box Culvert	1 x 2 x 3
39	253.310	Box Culvert	1 x 2 x 3
40	253.520	Box Culvert	1 x 2 x 3
41	253.680	Box Culvert	1 x 2 x 3
42	253.945	Box Culvert	1 x 2 x 3
43	254.130	Box Culvert	1 x 2 x 3
44	254.225	Box Culvert	1 x 2 x 3
45	254.380	Box Culvert	1 x 2 x 3

S. No.	Culvert location	Type of structure	Span/opening (m)
46	254.450	Box Culvert	1 x 2 x 3
47	255.120	Box Culvert	1 x 2 x 3
48	255.400	Box Culvert	1 x 2 x 3
49	255.700	Box Culvert	1 x 2 x 3
50	255.865	Box Culvert	1 x 2 x 3
51	256.340	Box Culvert	1 x 2 x 3
52	256.480	Box Culvert	1 x 2 x 3
53	257.050	Box Culvert	1 x 2 x 3
54	257.165	Box Culvert	1 x 2 x 3
55	257.260	Box Culvert	1 x 2 x 3
56	257.360	Box Culvert	1 x 2 x 3
57	257.590	Box Culvert	1 x 2 x 3
58	257.800	Box Culvert	1 x 2 x 3
59	258.080	Box Culvert	1 x 3 x 3
60	258.355	Box Culvert	1 x 3 x 3
61	258.635	Box Culvert	1 x 2 x 3
62	258.735	Box Culvert	1 x 2 x 3
63	258.865	Box Culvert	1 x 2 x 3
64	259.025	Box Culvert	1 x 2 x 3
65	259.125	Box Culvert	1 x 3 x 3
66	259.245	Box Culvert	1 x 2 x 3
67	259.460	Box Culvert	1 x 2 x 3
68	259.705	Box Culvert	1 x 3 x 3
69	259.915	Box Culvert	1 x 3 x 3
70	260.060	Box Culvert	1 x 2 x 3
71	260.300	Box Culvert	1 x 2 x 3
72	260.600	Box Culvert	1 x 3 x 3
73	261.620	Box Culvert	1 x 2 x 3
74	261.700	Box Culvert	1 x 2 x 3
75	261.820	Box Culvert	1 x 2 x 3
76	261.960	Box Culvert	1 x 3 x 3
77	262.070	Box Culvert	1 x 2 x 3
78	262.280	Box Culvert	1 x 2 x 3
79	262.385	Box Culvert	1 x 2 x 3
80	262.710	Box Culvert	1 x 2 x 3
81	262.810	Box Culvert	1 x 2 x 3
82	262.940	Box Culvert	1 x 3 x 3
83	263.545	Box Culvert	1 x 2 x 3
84	263.700	Box Culvert	1 x 2 x 3
85	263.825	Box Culvert	1 x 2 x 3
86	263.965	Box Culvert	1 x 2 x 3
87	264.010	Box Culvert	1 x 2 x 3
88	264.375	Box Culvert	1 x 3 x 3
89	264.475	Box Culvert	1 x 2 x 3
90	264.630	Box Culvert	1 x 2 x 3
91	264.685	Box Culvert	1 x 2 x 3
92	264.925	Box Culvert	1 x 2 x 3

S. No.	Culvert location	Type of structure	Span/opening (m)
93	265.135	Box Culvert	1 x 2 x 3
94	265.285	Box Culvert	1 x 3 x 3
95	265.450	Box Culvert	1 x 3 x 3
96	265.660	Box Culvert	1 x 2 x 3
97	265.740	Box Culvert	1 x 2 x 3
98	265.825	Box Culvert	1 x 2 x 3
99	266.350	Box Culvert	1 x 2 x 3
100	266.420	Box Culvert	1 x 3 x 3
101	266.525	Box Culvert	1 x 2 x 3
102	266.685	Box Culvert	1 x 2 x 3
103	266.760	Box Culvert	1 x 2 x 3
104	266.885	Box Culvert	1 x 2 x 3
105	266.985	Box Culvert	1 x 2 x 3
106	267.120	Box Culvert	1 x 2 x 3
107	267.370	Box Culvert	1 x 2 x 3
108	267.645	Box Culvert	1 x 2 x 3
109	267.755	Box Culvert	1 x 2 x 3
110	267.995	Box Culvert	1 x 2 x 3
111	268.225	Box Culvert	1 x 2 x 3
112	268.450	Box Culvert	1 x 2 x 3
113	268.590	Box Culvert	1 x 2 x 3
114	268.960	Box Culvert	1 x 2 x 3
115	269.195	Box Culvert	1 x 2 x 3

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

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

7.2.6 Floor protection works shall be as specified in the relevant IRC Codes and Specifications.

7.3 Bridges

7.3.1 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
Nil				

(ii) The following narrow bridges shall be widened

Sl. No.	Location (km)	Existing Width (m)	Extent of widening (m)	Cross-section at deck level for widening
NIL				

7.3.2 Additional new Bridges:

New bridges at the following locations on the Project Highway shall be constructed.

GADs for the new bridges are attached in the drawings folder.

(i) Major Bridges:

Sl. No	Location (km)	Total length (m)	Width (m)	Remarks
1	254+890	120.0	2x12.50	Cross section of Bridge shall be as per Manual
2	256+870	90.0	2x12.50	
3	266+190	70.0	2x12.50	
4	246+820	60.0	2x12.50	
5	250+215	60.0	2x12.50	
6	253+050	60.0	2x12.50	
7	260+820	60.0	2x12.50	
8	263+270	60.0	2x12.50	

(ii) Minor Bridges:

Sl. No	Location (km)	Total length (m)	Width (m)	Remarks
1	249+920	40	2x12.50	
2	250+870	30	2x12.50	
3	251+920	30	2x12.50	
4	256+030	30	2x12.50	
5	263+080	40	2x12.50	
6	267+425	30	2x12.50	
7	268+115	20	2x12.50	
8	269+030	40	2x12.50	
9	266+050	12	2x12.50	

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

Sl. No.	Location at km	Remarks
Nil		

7.3.4 Repairs/replacements of railing/parapets of the existing bridges shall be undertaken as follows:

Sl. No.	Location at km	Remarks
Nil		

7.3.5 Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in Section 7.20 of the Manual

7.3.6 Structures in marine environment

Not Applicable.

7.4. Rail-road bridges

7.4.1 Design, construction and detailing of ROB/RUB shall be as specified in Section 7 of the Manual.

7.4.2 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		

7.4.3 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		

7.5 Grade separated structures

The grade separated structures shall be provided at the locations and of the type and length specified Section 2.9 and 3 (b) of this Annex-I.

7.6 Repairs and strengthening of bridges and structures

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

A. Bridges

Sl. No.	Location of bridge (km)	Nature and extent of repairs /strengthening to be carried out
1	252.500	Renewal of Wearing Coat and replacement of Railings with Crash Barriers.

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		

7.7 List of Major Bridges and Structures

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

Sl. No.	Location (km)
1	254+890
2	256+870
3	266+190
4	246+820
5	250+215
6	253+050
7	260+820
8	263+270

8 TRAFFIC CONTROL DEVICES AND ROAD SAFETY WORKS

- 8.1 Traffic control devices and road safety works shall be provide in accordance with Section 9 of the Manual.
- 8.2 Specifications of the reflective sheeting shall be as per Section 9 of Manual and IRC: SP: 84–2014. Retro-reflective sign boards shall be provided as per Manual, IRC: SP: 84-2014 and as directed by the Authority.

9 ROADSIDE FURNITURE

- 9.1 Road side furniture shall be provided in accordance with the provisions of Section 9 of the Manual.
- 9.2 Over head traffic signs at start and end of project locations shall be provided as per Section 9 of the Manual.

10 COMPULSORY AFFORESTATION

Compulsory/ Compensatory afforestation to be carried out at locations as directed by the Authority.

11 HAZARDOUS LOCATIONS

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

1. In both sides approaches of existing narrow minor bridges are to be retained,
2. In all built-up areas along both sides footpaths to guide towards zebra crossing for road crossing,
3. At locations of all schools, medical facilities and religious structures,
4. Along both sides of the sanctuary area of 6.34 km to prevent road kill of animal, pollution in sanctuary area. Opening of size 0.3 m x 0.3 m at base at 20 m interval has to be provided for any trapped animal to escape.
5. At all bus-shelter locations, and
6. At any other locations as per the Manual and as directed by Authority Engineer considering safety of the road users.

12 SPECIAL REQUIREMENTS FOR HILL ROADS

In accordance with section 13 of the manual (from IRC:SP:84-2015), IRC:SP:48-

1998 and Recommended practices for Treatment of Embankment and Roadside slopes for Erosion control (First Revision), IRC:56-2011 and relevant IRC codes.

12.1 Slope Protection

As the project involves cutting of existing hill slopes, it is imperative that slopes are stabilized for ensuring longevity of the slope and the road. Slope stability, erosion control and landslide correction shall be accomplished in accordance with IRC:SP:48-1998. Reference may be drawn from IRC:56-2011.

- (i) The **minimum quantity** of protection work may be taken as below (to be filled by Contractor):

Type of Protection Work		
Protection Work	Unit	Quantity
1. Parapet Wall	Rm	28000
2. Breast wall with PCC	Rm	1500
3. Breast wall sausage type by gabion/ Specialized treatment for slide protection as specified above-	Rm	3900
4. Retaining Wall with PCC	Rm	5600
5. Catch water drain	Rm	17050
6. Vetiver Plantation, Hydro Seeding and Hydro Mulching etc. including nets if required or similar works are to be done for slope protection and site mitigation measure upto a height of 12-15 m all along the road on barren slopes except hard rock location which needs to be protected with appropriate applicable technologies, if required.		

- (ii) Location of existing landslide prone zones-

Sl. No.	Existing Chainage (km)		Slope Erosion Condition Moderate/Severe	Side	Remarks
	From	To			
1	244+648	244+652	Moderate	LHS	Landslide Prone
2	245+130	245+131	Moderate	LHS	Landslide Prone
3	245+525	245+530	Moderate	LHS	Landslide Prone
4	247+800	247+820	Severe	LHS	Landslide Prone
5	248+300	248+550	Severe	LHS	Sinking Zone
6	248+700	248+710	Severe	RHS	Landslide Prone
7	249+000	249+170	Severe	LHS	Landslide Prone
8	249+330	249+360	Severe	LHS	Landslide Prone
9	249+440	249+455	Severe	LHS	Landslide Prone
10	249+915	249+920	Severe	LHS	Landslide Prone
11	250+010	255+040	Moderate	LHS	Landslide Prone
12	250+140	255+150	Severe	LHS	Landslide Prone
13	250+150	255+155	Moderate	RHS	Landslide Prone
14	250+335	250+340	Severe	RHS	Landslide Prone
15	250+365	250+380	Severe	LHS	Landslide Prone

16	250+510	250+580	Severe	LHS	Landslide Prone
17	251+690	251+710	Moderate	LHS	Landslide Prone
18	251+820	251+830	Severe	LHS	Landslide Prone
19	251+880	251+890	Severe	LHS	Landslide Prone
20	252+245	252+250	Moderate	LHS	Landslide Prone
21	252+490	252+500	Moderate	LHS	Landslide Prone
22	252+577	252+580	Moderate	LHS	Landslide Prone
23	252+800	252+840	Moderate	LHS	Landslide Prone
24	253+000	253+060	Moderate	LHS	Landslide Prone
25	253+096	253+100	Moderate	RHS	Landslide Prone
26	253+208	253+211	Moderate	LHS	Landslide Prone
27	253+259	253+262	Moderate	LHS	Landslide Prone
28	253+450	253+454	Moderate	LHS	Landslide Prone
29	253+600	253+630	Moderate	LHS	Landslide Prone
30	253+719	253+722	Moderate	LHS	Landslide Prone
31	254+190	254+210	Severe	LHS	Landslide Prone
32	254+338	254+442	Moderate	RHS	Landslide Prone
33	255+450	255+530	Severe	LHS	Sinking Zone
34	256+260	256+410	Severe	LHS	Sinking Zone
35	256+800	256+802	Moderate	LHS	Landslide Prone
36	258+215	258+235	Severe	LHS	Landslide Prone
37	258+968	258+972	Moderate	LHS	Landslide Prone
38	259+014	259+022	Severe	LHS	Landslide Prone
39	259+047	259+051	Moderate	LHS	Landslide Prone
40	260+580	260+600	Severe	LHS	Landslide Prone
41	261+228	261+231	Moderate	LHS	Landslide Prone
42	261+800	261+870	Severe	LHS	Landslide Prone
43	262+180	262+200	Severe	LHS	Landslide Prone
44	262+318	262+321	Moderate	LHS	Landslide Prone
45	262+445	262+500	Severe	LHS	Landslide Prone
46	262+600	262+620	Severe	LHS	Landslide Prone
47	262+617	262+620	Severe	RHS	Landslide Prone
48	262+948	262+951	Moderate	LHS	Landslide Prone
49	263+130	263+175	Severe	LHS	Landslide Prone
50	263+300	263+330	Moderate	LHS	Landslide Prone
51	263+395	263+410	Severe	LHS	Landslide Prone
52	263+910	263+950	Severe	LHS	Landslide Prone
53	264+000	264+020	Severe	RHS	Sinking Zone
54	264+050	264+080	Moderate	LHS	Landslide Prone
55	264+430	264+510	Severe	LHS	Landslide Prone
56	264+650	254+740	Severe	LHS	Landslide Prone
57	265+020	265+050	Severe	LHS	Landslide Prone
58	265+300	265+306	Moderate	LHS	Landslide Prone
59	266+120	266+200	Severe	LHS	Landslide Prone
60	266+400	266+420	Moderate	LHS	Landslide Prone
61	266+500	266+525	Severe	LHS	Landslide Prone
62	266+720	266+800	Severe	LHS	Landslide Prone
63	267+010	267+130	Moderate	LHS	Sinking Zone
64	267+037	267+040	Moderate	RHS	Landslide Prone

65	267+810	267+850	Severe	LHS	Sinking Zone
66	268+800	268+810	Moderate	LHS	Landslide Prone
67	269+060	269+120	Severe	LHS	Sinking Zone
68	269+200	269+230	Severe	LHS	Landslide Prone
69	269+700	269+780	Moderate	LHS	Sinking Zone
70	271+550	271+580	Moderate	LHS	Landslide Prone
71	272+100	272+300	Severe	LHS	Landslide Prone
72	272+600	272+780	Moderate	LHS	Landslide Prone

Note- *The Contractor shall be responsible for accurate assessment of the actual requirement as per site situation & prepare designs for slope protection & stabilization as per the specifications & standards stipulated in schedule 'D' and submit the same to the AE for review through the proof consultant and implement it accordingly thereafter.*

Any increase in quantity over and above the tentative qty. as mentioned in above table or through change in specifications will not be considered as change of scope. Therefore contractor shall make thorough investigation at site and assess the requirement of slope protection and slide prone zone and other safety features at his own before submission of bid.

13 CHANGE OF SCOPE

The length of Structures, bridges and slope protection works whatsoever in terms of retaining wall, breast wall, gabion wall or under special requirement of hill slope specified hereinabove 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 and specifications in this Schedule-B shall not constitute a Change of Scope.

14 SPECIAL CONDITIONS

- a) The embankments shall be provided with free side slopes not more than Two- Horizontal to one-Vertical. If such slopes spill over beyond right of Way (ROW), than appropriately designed concrete toe walls shall be constructed to restrict the same within ROW.
Similarly also if such free slopes spill over the service roads, then the service roads shall be protected by concrete toe walls appropriately designed.
- b) In case of free cut slopes, where soil stabilization measures are not proposed separately, the stability of such slopes shall be ensured in all weather conditions by use of methodology.