

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

- 1 The Site
 - (i) Site of the Two-Lane with paved shoulder Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.
 - (ii) The dates of handing over the Right of Way to the Contractor are specified in Annex-II of this Schedule-A.
 - (iii) An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on, or attached to, the Site shall be prepared jointly by the Authority Representative and the Contractor, and such inventory shall form part of the memorandum referred to in Clause 8.2 (i) of this Agreement.
 - (iv) The alignment plans of the Project Highway are specified in Annex-III. In the case of sections where no modification in the existing alignment of the Project Highway is contemplated, the alignment plan has not been provided. Alignment plans have only been given for sections where the existing alignment is proposed to be upgraded. The proposed profile of the Project Highways shall be followed by the contractor with minimum FRL as indicated in the alignment plan. The Contractor, however, improve/upgrade the Road Profile as indicated in Annex-III based on site/design requirement.
 - (v) The status of the environment clearances obtained or awaited is given in Annex-IV.

**Annex - I
(Schedule-A)
Site**

1. Site

The Site of the [Two lane] Project Highway comprises the section of National Highway 44A commencing from km 46.597 to km 66.845 i.e. the Kanchanpur - Vaghmun section in the State of Tripura. 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 & land to be possessed) as described below:

S.No.	Chainage (km)		Right of way (m)	Remarks
	From Ch	To Ch		
1	46597	50230	30	
2	50230	51230	45	
3	51230	55930	30	
4	55930	63520	45	
5	63520	66845	30	

3. Carriageway

The present carriageway of the Project Highway is Single Lane. The type of the existing pavement is flexible.

4. Major Bridges

The Site includes the following Major Bridges:

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

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

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

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

6. Grade separators

The Site includes the following grade separators:

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

7. Minor bridges

The Site includes the following minor bridges:

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

8. Railway level crossings

The Site includes the following railway level crossings:

S. No.	Location (km)	Remark
NIL		

9. Underpasses (vehicular, non vehicular)

The Site includes the following underpasses:

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

10. Culverts

The Site has the following culverts:

a) Hume Pipe Culvert: - There are 28 Nos. existing HPC, the details are as follows -

S. No.	Chainage	Span Arrangement (m)	Total Width (m)
1	96+195	1X.090	12.00
2	96+515	1X.090	12.00
3	97+000	2X0.90	7.50
4	97+110	1X0.90	7.00
5	97+335	1X.090	12.00
6	97+485	1X0.90	12.00
7	98+840	1X0.90	9.00
8	99+550	1X0.90	9.10
9	100+060	1X0.90	8.50
10	100+965	1X0.90	9.10
11	101+085	1X0.90	6.40
12	102+735	1X0.90	8.10
13	103+030	1X0.90	8.10
14	104+240	1X0.90	8.00
15	104+340	1X0.90	8.10
16	104+525	1X0.90	12.00
17	104+890	1X0.90	6.80
18	104+945	1X0.90	6.80
19	105+620	1X0.90	6.80
20	105+850	1X0.90	6.80
21	106+000	1X0.90	6.80
22	106+075	1X0.90	6.80
23	108+615	1X0.90	8.50
24	108+800	1X0.90	7.80
25	109+120	1X0.90	7.60
26	109+325	1X0.90	7.50

S. No.	Chainage	Span Arrangement (m)	Total Width (m)
27	109+380	1X0.90	9.00
28	109+535	1X0.90	7.50

b) Slab/Arch/Box Culvert: - There are 08 nos existing Slab, details are as follows:-

S. No.	Chainage	Type of Structures (Slab / Arch)	Span arrangement (m)	Total Width(m)
1	87+235	RCC SLAB	1X4.50	12.20
2	87+380	RCC SLAB	1X1.55	12.00
3	92+175	RCC SLAB	1X1.55	12.00
4	92+975	RCC SLAB	1X1.50	12.00
5	93+740	RCC SLAB	1X1.55	12.10
6	97+705	RCC SLAB	1X1.00	7.10
7	97+745	RCC SLAB	1X1.50	12.10
8	102+870	RCC SLAB	1X2.00	10.10

11. Bus bays

The details of bus bays on the Site are as follows:

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

12. Truck Lay byes

The details of truck lay byes are as follows:

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

13. Road side drains

The details of the roadside drains are as follows:

S. No.	Location	Type
NIL		

14. Major junctions

The details of major junctions are as follows:

S. No.	Location (km)	At grade	Separated	Category of Cross Road			
				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:

S. No.	Location	Type	
	km	T-Junction	Cross road
1	87+075	T-Type	Village Road
2	87+370	T-Type	Village Road
3	87+425	T-Type	Village Road
4	87+505	T-Type	Village Road
5	88+075	Y-Type	Village Road
6	88+235	T-Type	Village Road
7	88+995	T-Type	Village Road
8	104+835	T-Type	Village Road
9	106+400	Y-Type	Village Road
10	109+650	Y-Type	Village Road

16. Bypasses

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

S. No.	Name of bypass (town)	Chainage (km) From km to km	Length (in km)
NIL			

17 Other structures] - NIL

[Provide details of other structures, if any.]

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:

Sl. No	From km to km	Length (km)	Width (m)	Date of providing ROW*
1	2	3	4	5
(i) Full Right of Way (full width) (a) Stretch (b) Stretch (c) Stretch				ROW will be provided before appointed date
(ii) Part Right of Way (part width) (a) Stretch (b) Stretch (c) Stretch				
(iii) Balance Right of Way (width) a) Stretch b) Stretch c) Stretch				

* 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 given in drawing volume.

- (i) The alignment of the Project Highway is enclosed in alignment plan. Finished road level indicated in the alignment plan shall be followed by the contractor as minimum FRL. In any case, the finished road level of the project highway shall not be less than those indicated in the alignment plan. The contractor shall, however, improve/upgrade the Road profile as indicated in Annex-III based on site/design requirement.
- (ii) Traffic Signage plan of the Project Highway showing numbers & location of traffic signs is enclosed. The contractor shall, however, improve/upgrade upon the traffic signage plan as indicated in Annex-III based on site/design requirement as per IRC:SP: 99 & IRC: 67.

Annex – IV

(Schedule-A)

Environment Clearances

The following environment clearances have been obtained:

- Environmental Clearance is not required as per new Notification of MoEF dated 22/08/2013.

Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. Rehabilitation and augmentation

Rehabilitation and augmentation shall include Two-Laning with paved shoulder of the Project Highway as described in Annex-I of this Schedule-B and in Schedule-C.

3. Specifications and Standards

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

**Annex - I
(Schedule-B)**

Description of Two laning

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) Two-Lane with paved shoulder in Plain/Rolling Terrain in open Country area: - The Carriageway shall be 7.0 m. wide with 1.50 m. paved shoulder both side and 2.0 m earthen shoulder both side shall be provided. The width of carriage way shall be specified in following table:

Sl. No.	Built-up-Stretch (Township)	Location (km to km)		Width (m)	Typical cross section (Ref. to Manual)
1.	-	46.597	47.520	7+1.5x2+2x2=14 m	Fig. 2.2

(B) Two-Lane with paved shoulder in Hilly Terrain with Hill side Drain on Both sides and breast wall on one side in open Country area (Box cut): - The Carriageway shall be 7.0 m wide with 1.50 m. paved shoulder both side and 1.0 m earthen shoulder both side shall be provided. The width of carriage way shall be specified in following table:

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	54.300	54.720	0.420	7+1.5x2+1x2=12 m	Fig 2.14 (New)
2.	55.020	55.120	0.100	7+1.5x2+1x2=12 m	Fig 2.14 (New)
3.	55.520	55.670	0.150	7+1.5x2+1x2=12 m	Fig 2.14 (New)
4.	55.920	57.020	1.100	7+1.5x2+1x2=12 m	Fig 2.14 (New)
5.	57.320	57.620	0.300	7+1.5x2+1x2=12 m	Fig 2.14 (New)
6.	57.720	57.970	0.250	7+1.5x2+1x2=12 m	Fig 2.14 (New)
7.	58.070	58.120	0.050	7+1.5x2+1x2=12 m	Fig 2.14 (New)
8.	58.220	58.420	0.200	7+1.5x2+1x2=12 m	Fig 2.14 (New)
9.	58.720	59.270	0.550	7+1.5x2+1x2=12 m	Fig 2.14 (New)
10.	59.820	60.270	0.450	7+1.5x2+1x2=12 m	Fig 2.14 (New)
11.	60.470	60.720	0.250	7+1.5x2+1x2=12 m	Fig 2.14 (New)
12.	60.870	61.020	0.150	7+1.5x2+1x2=12 m	Fig 2.14 (New)
13.	61.320	61.420	0.100	7+1.5x2+1x2=12 m	Fig 2.14 (New)

14.	62.070	62.970	0.900	7+1.5x2+1x2=12 m	Fig 2.14 (New)
15.	63.070	63.270	0.200	7+1.5x2+1x2=12 m	Fig 2.14 (New)
16.	63.470	63.570	0.100	7+1.5x2+1x2=12 m	Fig 2.14 (New)
17.	63.670	64.070	0.400	7+1.5x2+1x2=12 m	Fig 2.14 (New)
18.	64.470	64.820	0.350	7+1.5x2+1x2=12 m	Fig 2.14 (New)
19.	65.220	65.420	0.200	7+1.5x2+1x2=12 m	Fig 2.14 (New)
20.	65.570	65.720	0.150	7+1.5x2+1x2=12 m	Fig 2.14 (New)
21.	66.020	66.470	0.450	7+1.5x2+1x2=12 m	Fig 2.14 (New)
Total			6.820		

(C) Two-Lane with with paved shoulder in Hilly Terrain with Hill side Drain and breast wall on both sides in open Country area (Box cut): - The Carriageway shall be 7.0 m wide with 1.50 m. paved shoulder both side and 1.0 m earthen shoulder both side shall be provided. The width of carriage way shall be specified in following table:

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	55.220	55.320	0.100	7+1.5x2+1x2=12 m	Fig. 2.15 (New)
Total			0.100		

(D) Two-Lane with with paved shoulder in Hilly Terrain with Hill side Drain on Both sides in open Country area (Box cut): - The Carriageway shall be 7.0 m wide with 1.50 m. paved shoulder both side and 1.0 m earthen shoulder both side shall be provided. The width of carriage way shall be specified in following table:

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	50.320	50.420	0.100	7+1.5x2+1x2=12 m	Fig 2.16 (New)
Total			0.100		

(E) Two Lane Road with Paved shoulders in Hilly Terrain with Trapezoidal drain on hill side and retaining wall on valley side :- The Carriageway shall be 7.0 m wide with 1.5 m paved shoulder both side and 1.0 m earthen shoulder both side shall be provided. The width of carriageway specified following table-

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	48.120	49.220	1.100	7+1.5x2+1x2=12 m	Fig 2.17 (New)
2.	52.320	52.420	0.100	7+1.5x2+1x2=12 m	Fig 2.17 (New)
Total			1.200		

(F) Two Lane Road with Paved shoulders in Hilly Terrain with Hill side drain :- The Carriageway shall be 7.0 m wide with 1.5 m paved shoulder both side and 1.0 m earthen shoulder Both side shall be provided. The width of carriageway specified following table-

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	47.520	48.120	0.600	7+1.5x2+1x2=12 m	Fig 2.19 (New)
2.	49.220	50.320	1.100	7+1.5x2+1x2=12 m	Fig 2.19 (New)
3.	50.420	52.320	1.900	7+1.5x2+1x2=12 m	Fig 2.19 (New)
4.	52.420	54.300	1.880	7+1.5x2+1x2=12 m	Fig 2.19 (New)
5.	63.270	63.470	0.200	7+1.5x2+1x2=12 m	Fig 2.19 (New)
6.	63.570	63.670	0.100	7+1.5x2+1x2=12 m	Fig 2.19 (New)
7.	64.070	64.470	0.400	7+1.5x2+1x2=12 m	Fig 2.19 (New)
8.	64.820	65.220	0.400	7+1.5x2+1x2=12 m	Fig 2.19 (New)
9.	65.420	65.570	0.150	7+1.5x2+1x2=12 m	Fig 2.19 (New)
10.	65.720	66.020	0.300	7+1.5x2+1x2=12 m	Fig 2.19 (New)
11.	66.470	66.845	0.375	7+1.5x2+1x2=12 m	Fig 2.19 (New)
Total			7.405		

(G) Two Lane Road with Paved shoulders in Hilly Terrain with Hill side drain and breast wall :- The Carriageway shall be 7.0 m wide with 1.5 m paved shoulder both side and 1.0 m earthen shoulder Both side shall be provided. The width of carriageway specified following table-

Sl. No.	Location (km to km)		Length	Width (m)	Typical cross section (Ref. to Manual)
1.	54.720	55.020	0.300	7+1.5x2+1x2=12 m	Fig 2.20 (New)
2.	55.120	55.220	0.100	7+1.5x2+1x2=12 m	Fig 2.20 (New)
3.	55.320	55.520	0.200	7+1.5x2+1x2=12 m	Fig 2.20 (New)
4.	55.670	55.920	0.250	7+1.5x2+1x2=12 m	Fig 2.20 (New)
5.	57.020	57.320	0.300	7+1.5x2+1x2=12 m	Fig 2.20 (New)
6.	57.620	57.720	0.100	7+1.5x2+1x2=12 m	Fig 2.20 (New)
7.	57.970	58.070	0.100	7+1.5x2+1x2=12 m	Fig 2.20 (New)
8.	58.120	58.220	0.100	7+1.5x2+1x2=12 m	Fig 2.20 (New)
9.	58.420	58.720	0.300	7+1.5x2+1x2=12 m	Fig 2.20 (New)
10.	59.270	59.820	0.550	7+1.5x2+1x2=12 m	Fig 2.20 (New)
11.	60.270	60.470	0.200	7+1.5x2+1x2=12 m	Fig 2.20 (New)
12.	60.720	60.870	0.150	7+1.5x2+1x2=12 m	Fig 2.20 (New)
13.	61.020	61.320	0.300	7+1.5x2+1x2=12 m	Fig 2.20 (New)
14.	61.420	62.070	0.650	7+1.5x2+1x2=12 m	Fig 2.20 (New)
15.	62.970	63.070	0.100	7+1.5x2+1x2=12 m	Fig 2.20 (New)
Total			3.700		

(H) 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 the minimum design speed of 80-100 km per hr for plain/ rolling terrain and 40-65 km per hr for hilly terrain.

(iii) 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		Type of Deficiency	Remarks
	From	To		
1.	47164	47279	Radius-200	P/R terrain (builtup)
2.	47281	47417	Radius-200	P/R terrain (builtup)
3.	47723	47839	Radius-90	P/R terrain (builtup)
4.	47858	47925	Radius-155	P/R terrain (builtup)
5.	48150	48230	Radius-45	Hilly Terrain
6.	48401	48505	Radius-60	Hilly Terrain
7.	48806	48922	Radius-50	Hilly Terrain
8.	48951	49124	Radius-50	Hilly Terrain
9.	49125	49193	Radius-50	Hilly Terrain
10.	50067	50164	Radius-60	Hilly Terrain
11.	50802	50993	Radius-60	Hilly Terrain
12.	51033	51117	Radius-45	Hilly Terrain
13.	51497	51643	Radius-45	Hilly Terrain
14.	52140	52234	Radius-60	Hilly Terrain
15.	52277	52471	Radius-60	Hilly Terrain
16.	53069	53230	Radius-45	Hilly Terrain
17.	53866	54040	Radius-60	Hilly Terrain
18.	55145	55219	Radius-60	Hilly Terrain
19.	55219	55352	Radius-60	Hilly Terrain
20.	55358	55496	Radius-50	Hilly Terrain
21.	56398	56567	Radius-60	Hilly Terrain
22.	56583	56667	Radius-60	Hilly Terrain
23.	56698	56761	Radius-60	Hilly Terrain
24.	56774	56825	Radius-60	Hilly Terrain

25.	56877	56980	Radius-30	Hilly Terrain
26.	57259	57379	Radius-45	Hilly Terrain
27.	57533	57637	Radius-60	Hilly Terrain
28.	57645	57747	Radius-60	Hilly Terrain
29.	57921	58023	Radius-45	Hilly Terrain
30.	58044	58140	Radius-30	Hilly Terrain
31.	59713	59832	Radius-60	Hilly Terrain
32.	59930	60098	Radius-50	Hilly Terrain
33.	60591	60654	Radius-60	Hilly Terrain
34.	60973	60809	Radius-60	Hilly Terrain
35.	61266	61328	Radius-60	Hilly Terrain
36.	61330	61433	Radius-45	Hilly Terrain
37.	61463	61549	Radius-60	Hilly Terrain
38.	61592	61724	Radius-40	Hilly Terrain
39.	61781	61849	Radius-60	Hilly Terrain
40.	63189	63311	Radius-60	Hilly Terrain
41.	63318	63430	Radius-60	Hilly Terrain
42.	63454	63539	Radius-60	Hilly Terrain
43.	63544	63600	Radius-60	Hilly Terrain
44.	63713	63813	Radius-60	Hilly Terrain
45.	65563	65703	Radius-60	Hilly Terrain
46.	66458	66515	Radius-45	Hilly Terrain
47.	66523	66593	Radius-45	Hilly Terrain
48.	66597	66670	Radius-45	Hilly Terrain

(iv) Right of Way

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

(v) Type of shoulders

(a) In open country paved shoulder of 1.5m & earthen shoulder of 2.0m width both sides shall be provided (Plain/Rolling terrain).

S.No.	Design Chainage		Paved Shoulder	Earthen Shoulder	Reference to cross section
	From km	To km			
1	46.597	47.520	2x1.5=3.0m	2x2=4.0m	Fig. 2.2

(b) In open country paved shoulder of 1.5m both side & earthen shoulder of 1.0m width on both sides shall be provided (Hilly terrain).

S. No.	Design Chainage		Paved Shoulder	Earthen Shoulder	Reference to cross section
	From km	To km			
1	47.520	48.120	2x1.5=3.0m	1x2=2.0m	2.19(New)
2	48.120	49.220	2x1.5=3.0m	1x2=2.0m	2.17(New)
3	49.220	50.320	2x1.5=3.0m	1x2=2.0m	2.19(New)

4	50.320	50.420	2x1.5=3.0m	1x2=2.0m	2.16(New)
5	50.420	52.320	2x1.5=3.0m	1x2=2.0m	2.19(New)
6	52.320	52.420	2x1.5=3.0m	1x2=2.0m	2.17(New)
7	52.420	54.300	2x1.5=3.0m	1x2=2.0m	2.19(New)
8	54.300	54.720	2x1.5=3.0m	1x2=2.0m	2.14(New)
9	54.720	55.020	2x1.5=3.0m	1x2=2.0m	2.20(New)
10	55.020	55.120	2x1.5=3.0m	1x2=2.0m	2.14(New)
11	55.120	55.220	2x1.5=3.0m	1x2=2.0m	2.20(New)
12	55.220	55.320	2x1.5=3.0m	1x2=2.0m	2.15(New)
13	55.320	55.520	2x1.5=3.0m	1x2=2.0m	2.20(New)
14	55.520	55.670	2x1.5=3.0m	1x2=2.0m	2.14(New)
15	55.670	55.920	2x1.5=3.0m	1x2=2.0m	2.20(New)
16	55.920	57.020	2x1.5=3.0m	1x2=2.0m	2.14(New)
17	57.020	57.320	2x1.5=3.0m	1x2=2.0m	2.20(New)
18	57.320	57.620	2x1.5=3.0m	1x2=2.0m	2.14(New)
19	57.620	57.720	2x1.5=3.0m	1x2=2.0m	2.20(New)
20	57.720	57.970	2x1.5=3.0m	1x2=2.0m	2.14(New)
21	57.970	58.070	2x1.5=3.0m	1x2=2.0m	2.20(New)
22	58.070	58.120	2x1.5=3.0m	1x2=2.0m	2.14(New)
23	58.120	58.220	2x1.5=3.0m	1x2=2.0m	2.20(New)
24	58.220	58.420	2x1.5=3.0m	1x2=2.0m	2.14(New)
25	58.420	58.720	2x1.5=3.0m	1x2=2.0m	2.20(New)
26	58.720	59.270	2x1.5=3.0m	1x2=2.0m	2.14(New)
27	59.270	59.820	2x1.5=3.0m	1x2=2.0m	2.20(New)
28	59.820	60.270	2x1.5=3.0m	1x2=2.0m	2.14(New)
29	60.270	60.470	2x1.5=3.0m	1x2=2.0m	2.20(New)
30	60.470	60.720	2x1.5=3.0m	1x2=2.0m	2.14(New)
31	60.720	60.870	2x1.5=3.0m	1x2=2.0m	2.20(New)
32	60.870	61.020	2x1.5=3.0m	1x2=2.0m	2.14(New)
33	61.020	61.320	2x1.5=3.0m	1x2=2.0m	2.20(New)
34	61.320	61.420	2x1.5=3.0m	1x2=2.0m	2.14(New)
35	61.420	62.070	2x1.5=3.0m	1x2=2.0m	2.20(New)
36	62.070	62.970	2x1.5=3.0m	1x2=2.0m	2.14(New)
37	62.970	63.070	2x1.5=3.0m	1x2=2.0m	2.20(New)
38	63.070	63.270	2x1.5=3.0m	1x2=2.0m	2.14(New)
39	63.270	63.470	2x1.5=3.0m	1x2=2.0m	2.19(New)
40	63.470	63.570	2x1.5=3.0m	1x2=2.0m	2.14(New)
41	63.570	63.670	2x1.5=3.0m	1x2=2.0m	2.19(New)
42	63.670	64.070	2x1.5=3.0m	1x2=2.0m	2.14(New)
43	64.070	64.470	2x1.5=3.0m	1x2=2.0m	2.19(New)
44	64.470	64.820	2x1.5=3.0m	1x2=2.0m	2.14(New)
45	64.820	65.220	2x1.5=3.0m	1x2=2.0m	2.19(New)
46	65.220	65.420	2x1.5=3.0m	1x2=2.0m	2.14(New)
47	65.420	65.570	2x1.5=3.0m	1x2=2.0m	2.19(New)

48	65.570	65.720	2x1.5=3.0m	1x2=2.0m	2.14(New)
49	65.720	66.020	2x1.5=3.0m	1x2=2.0m	2.19(New)
50	66.020	66.470	2x1.5=3.0m	1x2=2.0m	2.14(New)
51	66.470	66.845	2x1.5=3.0m	1x2=2.0m	2.19(New)

(vi) Lateral and vertical clearances at underpasses

a) Lateral and vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per paragraph 2.11 of the Manual.

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

S. No.	Location (Existing Chainage in km)	Span/ opening (m)	Remarks
NIL			

(vii) Lateral and vertical clearances at overpasses

a) Lateral and vertical clearances at overpasses shall be as per paragraph 2.12 of the Manual.

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

S. No.	Location (Chainage) (from km to	Span/ opening	Remarks
NIL			

(viii) Service roads

Service roads shall be constructed at the locations and for the lengths indicated below in accordance with paragraph 2.13 of the Manual.

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

(ix) Grade separated structures

a) Grade separated structures shall be provided as per paragraph 2.14 of the Manual. The requisite particulars are given below:

Sl. No.	Location of structure	Length (m)	Number and length of spans (m)	Approach gradient	Remarks, if any
NIL					

b) In the case of grade separated structures, the type of structure and the level of the Project Highway and the cross roads shall be as follows:

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

(x) Cattle and pedestrian underpass /overpass

Cattle and pedestrian underpass/ overpass shall be constructed as follows:
[Refer to paragraphs 2.14.3 of the Manual and specify the requirements of cattle and pedestrian underpass/ overpass]

Sl. No.	Location	Type of crossing
NIL		

(xi) Typical cross-sections of the Project Highway

S.No	Ex. Ch.		Design Ch.		Design Length (km)	TCS as per IRC SP :73-2015
	From	To	From	To		
1	87.000	87.930	46.597	47.520	0.923	2.2
2	87.930	88.620	47.520	48.120	0.600	2.19(New)
3	88.620	89.760	48.120	49.220	1.100	2.17(New)
4	89.760	90.870	49.220	50.320	1.100	2.19(New)
5	90.870	91.000	50.320	50.420	0.100	2.16(New)
6	91.000	92.920	50.420	52.320	1.900	2.19(New)
7	92.920	93.020	52.320	52.420	0.100	2.17(New)
8	93.020	94.890	52.420	54.300	1.880	2.19(New)
9	94.890	95.420	54.300	54.720	0.420	2.14(New)
10	95.420	95.720	54.720	55.020	0.300	2.20(New)
11	95.720	95.920	55.020	55.120	0.100	2.14(New)
12	95.920	96.010	55.120	55.220	0.100	2.20(New)
13	96.010	96.200	55.220	55.320	0.100	2.15(New)
14	96.200	96.380	55.320	55.520	0.200	2.20(New)
15	96.380	96.660	55.520	55.670	0.150	2.14(New)
16	96.660	96.900	55.670	55.920	0.250	2.20(New)
17	96.900	98.550	55.920	57.020	1.100	2.14(New)
18	98.550	98.850	57.020	57.320	0.300	2.20(New)
19	98.850	99.220	57.320	57.620	0.300	2.14(New)
20	99.220	99.300	57.620	57.720	0.100	2.20(New)
21	99.220	99.550	57.720	57.970	0.250	2.14(New)
22	99.300	99.650	57.970	58.070	0.100	2.20(New)
23	99.550	99.770	58.070	58.120	0.050	2.14(New)
24	99.650	99.870	58.120	58.220	0.100	2.20(New)
25	99.770	100.050	58.220	58.420	0.200	2.14(New)

26	99.870	100.370	58.420	58.720	0.300	2.20(New)
27	100.050	101.100	58.720	59.270	0.550	2.14(New)
28	100.370	101.650	59.270	59.820	0.550	2.20(New)
29	101.100	102.220	59.820	60.270	0.450	2.14(New)
30	102.220	102.420	60.270	60.470	0.200	2.20(New)
31	102.420	102.720	60.470	60.720	0.250	2.14(New)
32	102.720	102.880	60.720	60.870	0.150	2.20(New)
33	102.880	103.010	60.870	61.020	0.150	2.14(New)
34	103.010	103.350	61.020	61.320	0.300	2.20(New)
35	103.350	103.520	61.320	61.420	0.100	2.14(New)
36	103.520	104.200	61.420	62.070	0.650	2.20(New)
37	104.200	105.510	62.070	62.970	0.900	2.14(New)
38	105.510	105.600	62.970	63.070	0.100	2.20(New)
39	105.600	105.900	63.070	63.270	0.200	2.14(New)
40	105.900	106.090	63.270	63.470	0.200	2.19(New)
41	106.090	106.250	63.470	63.570	0.100	2.14(New)
42	106.250	106.380	63.570	63.670	0.100	2.19(New)
43	106.380	106.900	63.670	64.070	0.400	2.14(New)
44	106.900	107.300	64.070	64.470	0.400	2.19(New)
45	107.300	107.700	64.470	64.820	0.350	2.14(New)
46	107.700	108.100	64.820	65.220	0.400	2.19(New)
47	108.100	108.300	65.220	65.420	0.200	2.14(New)
48	108.300	108.480	65.420	65.570	0.150	2.19(New)
49	108.480	108.730	65.570	65.720	0.150	2.14(New)
50	108.730	109.020	65.720	66.020	0.300	2.19(New)
51	109.020	109.750	66.020	66.470	0.450	2.14(New)
52	109.750	110.119	66.470	66.845	0.375	2.19(New)
Total Design Length					20.248	

3. Intersections and Grade Separators

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

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

(i) At-grade intersections

a) Major Junction - NIL

b) Minor Junctions – 10

S. No.	Location of intersection	Type of Intersection	Other features
1.	46+670	T-Type	Uricherra Village
2.	46+970	T-Type	School

S. No.	Location of intersection	Type of Intersection	Other features
3.	47+020	T-Type	Village Road
4.	47+100	T-Type	Village Road
5.	47+625	Y-Type	To Asst. Director of ARDD office
6.	47+740	T-Type	Village Road
7.	48+580	T-Type	Village Road
8.	62+535	T-Type	To Depta Cherra
9.	63+695	Y-Type	Sukna Cherra
10.	66+365	Y-Type	Tlakshi Village

- (ii) Grade separated intersection with/without ramps

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

4. Road Embankment and Cut Section

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

Note:-

1. Disposal of extra earth obtained by cutting is sole responsibility of contractor.
2. Indicative Muck disposal sites has been given in drawing volume but actual identification & finalization of disposal site is sole responsibility of contractor. The contractor has to acquire land if it is required.

- (ii) Raising of the existing road

The existing road shall be raised in the following sections:

Sl. No.	Section (from km to km)	Length	Remarks
NIL			

5. Pavement Design

- (i) Pavement design shall be carried out in accordance with Section 5 of the Manual.
- (ii) Type of pavement

Flexible Pavement shall be constructed in the entire length of project highway.

- (iii) Design requirements

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 15 years. Stage construction shall not be permitted.

b) Design Traffic

Notwithstanding anything to the contrary contained in this Agreement or the Manual, the Contractor shall design the pavement for a design traffic of 30 million standard axles.

(iv) Reconstruction of stretches

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

Existing chainage in km		Length (km)	Remarks
From	To		
46.597	66.845	20.248	
Total Length		20.248	

6. Roadside Drainage

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

a) Hill side drainage

Sr. No.	Type of TCS	Chainage		Length (m) for both side	Total Length (m)
		From km	To km		
1.	2.19(New)	47.520	48.120	1x600	600
2.	2.17(New)	48.120	49.220	1x 1100	1100
3.	2.19(New)	49.220	50.320	1x 1100	1100
4.	2.16(New)	50.320	50.420	2x100	200
5.	2.19(New)	50.420	52.320	1x 1900	1900
6.	2.17(New)	52.320	52.420	1x 100	100
7.	2.19(New)	52.420	54.300	1x 1880	1880
8.	2.14(New)	54.300	54.720	2x420	840
9.	2.20(New)	54.720	55.020	1x 300	300
10.	2.14(New)	55.020	55.120	2x100	200
11.	2.20(New)	55.120	55.220	1x 100	100
12.	2.15(New)	55.220	55.320	2x100	200
13.	2.20(New)	55.320	55.520	1x 200	200
14.	2.14(New)	55.520	55.670	2x150	300

Sr. No.	Type of TCS	Chainage		Length (m) for both	Total Length (m)
15.	2.20(New)	55.670	55.920	1x 250	250
16.	2.14(New)	55.920	57.020	2x1100	2200
17.	2.20(New)	57.020	57.320	1x 300	300
18.	2.14(New)	57.320	57.620	2x300	600
19.	2.20(New)	57.620	57.720	1x 100	100
20.	2.14(New)	57.720	57.970	2x 250	500
21.	2.20(New)	57.970	58.070	1x 100	100
22.	2.14(New)	58.070	58.120	2x 50	100
23.	2.20(New)	58.120	58.220	1x 100	100
24.	2.14(New)	58.220	58.420	2x 200	400
25.	2.20(New)	58.420	58.720	1x 300	300
26.	2.14(New)	58.720	59.270	2x 550	1100
27.	2.20(New)	59.270	59.820	1x 550	550
28.	2.14(New)	59.820	60.270	2x 450	900
29.	2.20(New)	60.270	60.470	1x 200	200
30.	2.14(New)	60.470	60.720	2x 250	500
31.	2.20(New)	60.720	60.870	1x 150	150
32.	2.14(New)	60.870	61.020	2x 150	300
33.	2.20(New)	61.020	61.320	1x 300	300
34.	2.14(New)	61.320	61.420	2x 100	200
35.	2.20(New)	61.420	62.070	1x 650	650
36.	2.14(New)	62.070	62.970	2x 900	1800
37.	2.20(New)	62.970	63.070	1x 100	100
38.	2.14(New)	63.070	63.270	2x200	400
39.	2.19(New)	63.270	63.470	1x 200	200
40.	2.14(New)	63.470	63.570	2x100	200
41.	2.19(New)	63.570	63.670	1x 100	100
42.	2.14(New)	63.670	64.070	2x400	800
43.	2.19(New)	64.070	64.470	1x 400	400
44.	2.14(New)	64.470	64.820	2x350	700
45.	2.19(New)	64.820	65.220	1x 400	400
46.	2.14(New)	65.220	65.420	2x200	400
47.	2.19(New)	65.420	65.570	1x 150	150
48.	2.14(New)	65.570	65.720	2x150	300
49.	2.19(New)	65.720	66.020	1x 300	300
50.	2.14(New)	66.020	66.470	2x450	900
51.	2.19(New)	66.470	66.845	1x 375	375

Sr. No.	Type of TCS	Chainage	Length (m) for both	Total Length (m)
Total Length				= 26345 m

b) Catch water Drain

Sr. No.	Type of TCS	Chainage		Length (m) for both side	Total Length (m)
		From km	To km		
1.	2.19(New)	47.520	48.120	1x600	600
2.	2.17(New)	48.120	49.220	1x 1100	1100
3.	2.19(New)	49.220	50.320	1x 1100	1100
4.	2.16(New)	50.320	50.420	2x100	200
5.	2.19(New)	50.420	52.320	1x 1900	1900
6.	2.17(New)	52.320	52.420	1x 100	100
7.	2.19(New)	52.420	54.300	1x 1880	1880
8.	2.14(New)	54.300	54.720	2x420	840
9.	2.20(New)	54.720	55.020	1x 300	300
10.	2.14(New)	55.020	55.120	2x100	200
11.	2.20(New)	55.120	55.220	1x 100	100
12.	2.15(New)	55.220	55.320	2x100	200
13.	2.20(New)	55.320	55.520	1x 200	200
14.	2.14(New)	55.520	55.670	2x150	300
15.	2.20(New)	55.670	55.920	1x 250	250
16.	2.14(New)	55.920	57.020	2x1100	2200
17.	2.20(New)	57.020	57.320	1x 300	300
18.	2.14(New)	57.320	57.620	2x300	600
19.	2.20(New)	57.620	57.720	1x 100	100
20.	2.14(New)	57.720	57.970	2x 250	500
21.	2.20(New)	57.970	58.070	1x 100	100
22.	2.14(New)	58.070	58.120	2x 50	100
23.	2.20(New)	58.120	58.220	1x 100	100
24.	2.14(New)	58.220	58.420	2x 200	400
25.	2.20(New)	58.420	58.720	1x 300	300
26.	2.14(New)	58.720	59.270	2x 550	1100

Sr. No.	Type of TCS	Chainage		Length (m) for both	Total Length (m)
27.	2.20(New)	59.270	59.820	1x 550	550
28.	2.14(New)	59.820	60.270	2x 450	900
29.	2.20(New)	60.270	60.470	1x 200	200
30.	2.14(New)	60.470	60.720	2x 250	500
31.	2.20(New)	60.720	60.870	1x 150	150
32.	2.14(New)	60.870	61.020	2x 150	300
33.	2.20(New)	61.020	61.320	1x 300	300
34.	2.14(New)	61.320	61.420	2x 100	200
35.	2.20(New)	61.420	62.070	1x 650	650
36.	2.14(New)	62.070	62.970	2x 900	1800
37.	2.20(New)	62.970	63.070	1x 100	100
38.	2.14(New)	63.070	63.270	2x200	400
39.	2.19(New)	63.270	63.470	1x 200	200
40.	2.14(New)	63.470	63.570	2x100	200
41.	2.19(New)	63.570	63.670	1x 100	100
42.	2.14(New)	63.670	64.070	2x400	800
43.	2.19(New)	64.070	64.470	1x 400	400
44.	2.14(New)	64.470	64.820	2x350	700
45.	2.19(New)	64.820	65.220	1x 400	400
46.	2.14(New)	65.220	65.420	2x200	400
47.	2.19(New)	65.420	65.570	1x 150	150
48.	2.14(New)	65.570	65.720	2x150	300
49.	2.19(New)	65.720	66.020	1x 300	300
50.	2.14(New)	66.020	66.470	2x450	900
51.	2.19(New)	66.470	66.845	1x 375	375
Total Length					= 26345 m

7. Design of Structures

(i) General

a) 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.

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

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

c) The following structures shall be provided with footpaths:

Sl. No.	Location at km	Remarks
NIL		

d) All bridges shall be high-level bridges.

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

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

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

(ii) Culverts

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

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

Sl.No.	Culvert Location	Span/Opening (m)	Remark , if any
1	46+830	1no. 5x5	
2	46+975	1no. 2x3	
3	51+560	1no. 2X2	
4	52+370	1no. 2x2	
5	53+150	1no. 2X3	
6	55+310	1no. 2x2	
7	55+990	1no. 3x3	
8	56+170	1no. 2x2	
9	56+190	1no. 2x2	
10	56+290	1no. 2x2	
11	56+440	1no. 3x3	
12	57+310	1no. 2X2	
13	57+960	1no. 2X2	
14	58+420	1no. 2x2	
15	58+490	2no. 3X3	
16	59+290	1no. 2X2	

17	60+730	1no. 2X2	
18	60+890	1no. 3X3	
19	61+030	1no. 2X2	
20	62+090	1no. 2X2	
21	62+310	1no. 2X2	
22	62+490	1no. 5X5	
23	62+590	1no. 2X2	
24	63+090	1no. 2X2	
25	63+190	1no. 2X2	
26	63+390	1no. 2X2	
27	63+450	1no. 2X2	
28	65+770	1no. 2X2	
29	66+090	1no. 2x2	
30	66+270	1no. 2x2	

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 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			

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

S.No.	Culvert Location	Span/ Opening (m)
1.	47+570	1no. 2x2
2.	48+000	1no. 2x2
3.	48+250	1no. 2x2
4.	48+400	1no. 2x2
5.	48+690	1no. 2x2
6.	49+700	1no. 2x2
7.	49+900	1no. 2x2
8.	50+200	1no. 2x2
9.	50+445	1no. 2x2
10.	50+700	1no. 2x2
11.	51+100	1no. 2X2
12.	51+400	1no. 2X2
13.	51+800	1no. 2X2
14.	52+100	1no. 2X2
15.	52+600	1no. 2X2

16.	52+860	1no. 2x2
17.	53+600	1no. 2x2
18.	53+800	1no. 2x2
19.	54+400	1no. 2x2
20.	54+540	1no. 2x2
21.	54+710	1no. 2x2
22.	54+840	1no. 2x2
23.	55+850	1no. 2x2
24.	56+800	1no. 2x2
25.	57+100	1no. 2x2
26.	57+500	1no. 2x2
27.	57+690	1no. 2x2
28.	58+750	1no. 2x2
29.	59+130	1no. 2x2
30.	59+770	1no. 2x2
31.	61+310	1no. 2x2
32.	61+910	1no. 2x2
33.	62+430	1no. 2x2
34.	62+570	1no. 2x2
35.	62+810	1no. 2x2
36.	63+170	1no. 2x2
37.	64+190	1no. 2x2
38.	64+650	1no. 2x2
39.	65+000	1no. 2x2
40.	65+450	1no. 2x2
41.	66+530	1no. 2x2

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

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

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

(iii) Bridges

a) Existing bridges to be re- constructed/widened

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

Sl. No.	Bridge location (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				

b) Additional new bridges

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

Sl. No.	Location (km)	Total length (m)	Remarks, if any
NIL			

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

Sl. No.	Location at km	Remarks
NIL		

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

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 paragraph 7.21 of the Manual

f) Structures in marine environment- Nil

(iv) Rail-road bridges

a) Design, construction and detailing of ROB/RUB shall be as specified in section 7 of the Manual.

b) Road over-bridges

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

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

c) Road under-bridges

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

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

(v) Grade separated structures

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2.9 and 3 of this Annex-I.

(vi) Repairs and strengthening of bridges and structures

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

(a) Bridges

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

(b) ROB / RUB

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

(c) Overpasses/Underpasses and other structures

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

(vii) List of Major Bridges and Structures

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

Sl. No.	Location	Remarks
NIL		

8. Traffic Control Devices and Road Safety Works

- (i) Traffic control devices and road safety works shall be provided in accordance with Section 9 of the Manual.
- (ii) Specifications of the reflective sheeting. As per section 9.2 of the Manual of Specifications and Standards

9. Roadside Furniture

- (i) Roadside furniture shall be provided in accordance with the provisions of Section 11 of the Manual. However the Contractor shall provide minimum numbers of Cautionary, Mandatory, Warning and Informatory Traffic Sign Boards as mentioned below:

S.No.	Location	Numbers	Size
1	At Junction	25	90 cm Equilateral Triangle
2	At Curves	75	60 cm Equilateral Triangle
3	At Curves	300	60 cm Circular
4	At Junction, Village, Curve	100	80X60 cm Rectangular
7	At Junction	30	60X45 cm Rectangular
8	At Village	6	60X60 cm Square
9	At Junction	25	90 cm High Octagon
11	Route Marker Sign	At Every 10 Km.	0.9 Sqm
12	Hazard Marker	Both Side on every Bridge	As per IRC

- (ii) Overhead traffic signs: location and size
As per paragraph 11.5 of the Manual

10. Compulsory Afforestation

Refer to Clause 11 of the Manual. 1:3 times new trees to be planted by the Contractor as compulsory afforestation.

11. Hazardous Locations

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

Sl. No.	Location stretch from (km) to (km)		LHS/RHS
1.	47.520	48.12	On Valley Side as per TCS
2.	48.120	49.22	On Valley Side as per TCS
3.	49.220	50.32	On Valley Side as per TCS
4.	50.420	52.32	On Valley Side as per TCS
5.	52.320	52.42	On Valley Side as per TCS
6.	52.420	54.3	On Valley Side as per TCS
7.	54.720	55.02	On Valley Side as per TCS
8.	55.120	55.22	On Valley Side as per TCS
9.	55.320	55.52	On Valley Side as per TCS
10.	55.670	55.92	On Valley Side as per TCS
11.	57.020	57.32	On Valley Side as per TCS
12.	57.620	57.72	On Valley Side as per TCS
13.	57.970	58.07	On Valley Side as per TCS
14.	58.120	58.22	On Valley Side as per TCS
15.	58.420	58.72	On Valley Side as per TCS
16.	59.270	59.82	On Valley Side as per TCS
17.	60.270	60.47	On Valley Side as per TCS
18.	60.720	60.87	On Valley Side as per TCS
19.	61.020	61.32	On Valley Side as per TCS
20.	61.420	62.07	On Valley Side as per TCS
21.	62.970	63.07	On Valley Side as per TCS
22.	63.270	63.47	On Valley Side as per TCS
23.	63.570	63.67	On Valley Side as per TCS
24.	64.070	64.47	On Valley Side as per TCS
25.	64.820	65.22	On Valley Side as per TCS
26.	65.420	65.57	On Valley Side as per TCS
27.	65.720	66.02	On Valley Side as per TCS
28.	66.470	66.845	On Valley Side as per TCS

12 Special Requirement for Hill Roads

[Refer to paragraphs 14.5 and 14.8 of the Manual and provide details where relevant and required.]

Special requirement for hill roads in accordance with the provisions of section 14 of the manual shall be provided in the following locations:-

a) Retaining Wall

S.No.	Location stretch		Remarks

	From	To	LHS/RHS	
1	48.120	49.220	As per TCS	Hilly portion. Retaining wall shall be designed and provided as per the technical requirement in consultation with the Authority Engineer subject to minimum length of 1200 metre.
2	52.320	52.420	As per TCS	

b) Breast wall

Sl. No.	Location stretch		LHS/RHS
	From (km)	To (km)	
1	54.300	54.720	As per TCS
2	54.720	55.020	As per TCS
3	55.020	55.120	As per TCS
4	55.120	55.220	As per TCS
5	55.220	55.320	As per TCS
6	55.320	55.520	As per TCS
7	55.520	55.670	As per TCS
8	55.670	55.920	As per TCS
9	55.920	57.020	As per TCS
10	57.020	57.320	As per TCS
11	57.320	57.620	As per TCS
12	57.620	57.720	As per TCS
13	57.720	57.970	As per TCS
14	57.970	58.070	As per TCS
15	58.070	58.120	As per TCS
16	58.120	58.220	As per TCS
17	58.220	58.420	As per TCS
18	58.420	58.720	As per TCS
19	58.720	59.270	As per TCS
20	59.270	59.820	As per TCS
21	59.820	60.270	As per TCS
22	60.270	60.470	As per TCS
23	60.470	60.720	As per TCS
24	60.720	60.870	As per TCS
25	60.870	61.020	As per TCS
26	61.020	61.320	As per TCS
27	61.320	61.420	As per TCS
28	61.420	62.070	As per TCS

29	62.070	62.970	As per TCS
30	62.970	63.070	As per TCS
31	63.070	63.270	As per TCS
32	63.470	63.570	As per TCS
33	63.670	64.070	As per TCS
34	64.470	64.820	As per TCS
35	65.220	65.420	As per TCS
36	65.570	65.720	As per TCS
37	66.020	66.470	As per TCS

13. Change of Scope

The length of Structures and bridges 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 specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the length arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

Schedule - H
(See Clauses 10.1 (iv) and 19.3)
Contract Price Weightages

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

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

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
Road works including culverts, widening and repair of culverts.	[78.80%]	<p>A- Widening and strengthening of existing road</p> <p>(1) Earthwork up to top of the sub-grade [0%] (2) Earthwork in shoulder [0%] (3) sub-base Course [0%] (4) Non Bituminous base Course [0%] (5) Bituminous Base Course [0%] (6) Wearing coat [0%] (7) Widening and repair of culvert [0%]</p> <p>B.1- Reconstruction New 2-lane realignment/bypass (Flexible pavement)</p> <p>(1) Earthwork up to top of the sub-grade [15.54%] (2) Earthwork in Shoulder [0.16%] (3) sub-base Course [16.03%] (4) Non Bituminous base Course [37.82%] (5) Bituminous Base Course [12.84%] (6) Wearing coat [5.36%]</p> <p>B.2- Reconstruction/ New 2-lane realignment/bypass (Rigid pavement)</p> <p>(1) Earthwork up to top of the sub-grade [0%] (2) Earthwork in Shoulder [0%] (3) sub-base Course [0%] (4) Dry lean concrete (DLC) Course [0%] (5) Pavement quality control (PQC) course [0%]</p> <p>C.1- Reconstruction/ New Service Road (Flexible pavement)</p> <p>(1) Earthwork up to top of the sub-grade [0%] (2) Earthwork in Shoulder [0%] (3) <u>sub-base Course</u> [0%] (4) <u>Non Bituminous base Course</u> [0%] (5) <u>Bituminous Base Course</u> [0%] (6) <u>Wearing coat</u> [0%]</p> <p>C.2-Reconstruction/ New Service Road (Rigid pavement)</p> <p>(1) Earthwork up to top of the sub-grade [0%]</p>	

		(2) <u>sub-base Course</u> (3) Dry lean concrete (DLC) Course (4) Pavement quality control (PQC) course	[0%] [0%] [0%]
		D-Re-construction/ New culverts on existing road, realignments, bypasses: Culvert (Length<6m)	[12.25%]
Minor Bridge/ Underpasses/Overpasses	0%	A.1- Widening and repairs of Minor Bridges (length>6m and <60m) Minor bridges A.2 New Minor Bridges (length>6m and <60m) (1) Foundation On completion of the foundation work including foundations for wing and return walls, abutments, piers. (2)Substructure: On completion of abutments, piers upto the abutment/pier cap including wing/ return/ retaining wall upto top (3)Super Structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings (4)Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect, tests on completion in all respect and fit for use (5)Guide Bunds and River Training Works: On completion of Guide Bunds and River Training Works complete in all respect. (6) Other Ancilliary Works: On completion of wearing coat, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion in all respect. B-1 Widening and repair of underpasses/ overpasses Underpasses/ Overpasses B-2 New underpasses/ overpasses (1) Foundation +Substructure: On completion of the foundation work including foundation for wing and return wall, abutments, piers upto the abutment/pier cap. (2) Sub-structure: On completion of abutments, piers upto the abutment/ pier cap including wing/ return/retaining wall upto top	[0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%] [0%]

		<p>(3)Super Structure: On completion of the super-structure in all respects including Girder, Deck slab, bearings.t.</p> <p>(4) On completion of Retaining /Reinforced earth walls, complete in all respect and fit for use</p> <p>(5) Approaches and Other Ancilliary Works: On completion of wearing coat,expansion joints, hand rails, crash barriers, stone pitching, protection works, road signs & markings, tests on completion in all respect.</p> <p>Wearing Coat (a) in case of Overpasswearing coat including expansion joints complete in all respects asspecified and</p> <p>(b) in case of underpass-rigid pavement including drainage facility complete in all respects as specified</p>	<p>[0%]</p> <p>[0%]</p> <p>[0%]</p>
Major Bridges (length>60m) work and ROB/RUB/elevated section/ flyover including viaducts, if any	0%	<p>A-1 Widening and repair of Major Bridges</p> <p>1) Foundation On completion of the foundation work including foundations for return walls, abutments, piers.</p> <p>(2) Sub-structure On completion of abutments, piers upto the abutment/ pier cap</p> <p>(3) Super-structure On completion of the super-structure in all respects including Girder, Deck slab, bearings.</p> <p>(4) wearing coat including expansion joints</p> <p>(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)</p> <p>(6)Wing walls/return walls up to top</p> <p>(7) Guide bunds, river Training works etc.</p> <p>(8)Approaches (including Retaining walls, stone pitching and protection works)</p> <p>A.2New Major Bridges</p> <p>(1) Foundation On completion of the foundation work including foundations for return walls, abutments, piers.</p> <p>(2) Sub-structure On completion of abutments, piers upto the abutment/pier cap</p> <p>(3) Super-structure On completion of the super-structure in all respects including Girder, Deck slab, bearings.</p> <p>(4) wearing coat including expansion joints</p> <p>(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)</p> <p>(6)Wing walls/return walls up to top</p>	<p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p>

		<p>(7) Guide bunds, river Training works etc. (8)Approaches (including Retaining walls, stone pitching and protection works)</p> <p>B.1- Widening and repair of</p> <p>(a) ROB [0%] (b) RUB [0%] (1) Foundation [0%] (2) Sub-structure [0%] (3) Super-structure (including bearings) (4) wearing coat: (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified and specified. [0%] (5) Miscellaneous Items like hand rails, crash barriers, road markings etc.) [0%] (6)Wing walls/return walls [0%] (7)Retaining/Reinforced Earth Wall (8)Approaches and other ancillary Works (wearing coat, expansion joint, hand rails, crash barriers, road Signs & marking, stone pitching, protection works, etc.)</p> <p>B.2- New ROB/ RUB</p> <p>(a) ROB [0%] (b) RUB [0%] (1) Foundation [0%] (2) Sub-structure [0%] (3) Super-structure (including bearings) (4) wearing coat: (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified and specified. [0%] (5) Miscellaneous Items like hand rails, crash barriers, road markings etc.) [0%] (6)Wing walls/return walls [0%] (7)Retaining/Reinforced Earth Wall (8)Approaches and other ancillary Works (wearing coat, expansion joint, hand rails, crash barriers, road Signs & marking, stone pitching, protection works, etc.)</p> <p>C.1- Widening and repair of Elevated Section/Flyovers/Grade separators [0%] 1) Foundation [0%] (2) Sub-structure [0%] (3) Super-structure (including bearings) [0%] (4) wearing coat including expansion joints [0%] (5) Miscellaneous Items like hand rails, crash barriers, road markings etc.) [0%] (6)Wing walls/return walls [0%] (7)Retaining/Reinforced Earth Wall</p>	
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		<p>(8)Approaches and other ancillary Works (wearing coat, expansion joint, hand rails, crash barriers, road Signs & marking, stone pitching, protection works, etc.)</p> <p>C.2- New Elevated Section/Flyovers/Grade separators</p> <p>1) Foundation</p> <p>(2) Sub-structure</p> <p>(3) Super-structure (including bearings)</p> <p>(4) wearing coat including expansion joints</p> <p>(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)</p> <p>(6)Wing walls/return walls</p> <p>(7)Retaining/Reinforced Earth Wall</p> <p>(8)Approaches and other ancillary Works (wearing coat, expansion joint, hand rails, crash barriers, road Signs & marking, stone pitching, protection works, etc.)</p>	<p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p>
Other works	21.20%	<p>(i) Toll Plaza</p> <p>(ii) Road side drains</p> <p> a)lined drain</p> <p> b)unlined drain</p> <p>(iii) Road signs, safety devices, Road Furniture etc.</p> <p>(iv) Road Markings & studs</p> <p>(v) Crash Barrier</p> <p>(vi) Project facilities</p> <p> (a) Bus bays</p> <p> (b) Way side amenities excluding slip roads & but including all internal roads (service areas including truck lay byes)</p> <p> (c) Others (to be specified)</p> <p>(vii) Retaining Wall</p> <p>(viii) RE Wall</p> <p>(ix) Street Lighting</p> <p>(x) Utility Ducts</p> <p>(xi) Boundary Wall</p> <p>(xii)ATMS</p> <p>(xiii) Rain Water Harvesting</p> <p>(xiv)Road side plantation including horticulture in way side amenities</p> <p>(xv) Protection works other than approaches to the bridges, elevated sections/flyovers/grade separators and ROBs/ RUBs</p> <p>(xvi) Safety and traffic management during construction</p> <p>(xvii) Other Misc Works Including connecting Road & Junction under grade separator</p>	<p>[0%]</p> <p>[12.93%]</p> <p>[0%]</p> <p>[0.94%]</p> <p>[0.23%]</p> <p>[6.65%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[78.15%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0%]</p> <p>[0.61%]</p> <p>[0.02%]</p> <p>[0.47%]</p>

Procedure of estimating the value of work done

(i) Road works

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

Table 1.3.1

Stage of Payment	Percentage -weightage	Payment Procedure
A-Widening and strengthening of road	0 %	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 10 (ten) percent of the total length.
(1) Earthwork up to top of the sub-grade		
(2) Earthwork in shoulders	0 %	
(3) sub-base Course	0 %	
(4) Non Bituminous Base course	0 %	
(5) Bituminous Base course	0 %	
(6) Wearing Coat	0 %	
(7) Widening and repair of culverts	0%	Cost of ten completed culverts shall be determined on pro rata with respect to the total number of culverts. The Payment shall be made on the completion of atleast five culverts.
B.1 Reconstruction/ New 2-lane realignment, bypass (flexible pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, Whichever is less.
(1) Earthwork up to top of the sub-grade	15.54%	
(2) Earthwork in shoulders	0.16%	
(3) sub-base Course	16.03%	
(4) Non Bituminous Base course	37.82%	
(5) Bituminous Base course	12.84%	
(6) Wearing Coat	5.36%	
B.2 Reconstruction/ New 2-lane realignment, bypass (Rigid pavement)	0 %	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, Whichever is less.
(1) Earthwork up to top of the sub-grade		
(2) Earthwork in shoulders	0 %	
(3) sub-base Course	0 %	
(4) Dry lean concrete (DLC) Course	0 %	
(5) Pavement quality control (PQC) course	0 %	
C.1-Reconstruction/ New Service Road (flexible pavement)	0 %	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, Whichever is
(1) Earthwork up to top of the		

sub-grade		less.
(2) Earthwork in shoulders	0 %	
(3) sub-base Course	0%	
(4) Non Bituminous Base course	0 %	
(5) Bituminous Base course	0%	
(6) Wearing Coat	0 %	
C.2 Reconstruction/ New Service Road (Rigid pavement)	0 %	Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, Whichever is less.
(1) Earthwork up to top of the sub-grade		
(2) sub-base Course	0 %	
(3) Dry lean concrete (DLC) Course	0 %	
(4) Pavement quality control (PQC) course	0 %	
D. Re-construction and new culverts on existing road, realignments, bypasses:	12.25 %	Cost of each culvert shall be determined on pro rata basis with respect to the total number of culverts. Payment shall be made on the completion of five culverts.
(1) Culvert (length < 6m)		

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

$$\text{Cost per km} = P \times \text{weightage for road work} \times \text{weightage for bituminous work} \times (1/L)$$

Where P = Contract Price

L = Total length in km

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

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

(ii) Minor Bridge and underpasses/Overpasses.

Procedure for estimating the value of minor Bridge and underpasses/Overpasses shall be as stated in table 1.3.2:

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
<p>A- Widening and repairs of minor bridges</p> <p>(length>6m and < 60m)</p>	0%	<p>Cost of each minor Bridge shall be determined on pro rata basis with respect to the total linear length of the minor Bridges. Payment shall be made on completion of widening & repair works of a minor Bridge.</p>
<p>A.2-New Minor bridges</p> <p>(length>6m and < 60m)</p> <p>(i)Foundation:</p> <p>On completion of the foundation work including foundations for wing and return walls abutments, piers.</p>	0%	<p>Foundation:</p> <p>Cost of each Minor Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Minor Bridges. payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each bridge</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(2)Substructure:</p> <p>On completion of the Abutments, Piers upto the abutment/pier cap including wing/return/ retaining wall upto top.</p>	0%	<p>Substructure:</p> <p>Cost of each Minor Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Minor Bridges. payment against substructure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of substructure of each bridge.</p>
<p>(3) Super-structure: On completion of the super structure in all respects including girder, Deck Slab, bearings.</p>	0%	<p>Super-structure:</p> <p>Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure of at least one span in all respects as specified in the column of “Stage of payment” in this sub clause.</p> <p>In case of structures where pre cast girders have been proposed</p>

		by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Approaches: On completion of approaches including retaining wall, stone pitching, protection work complete in all respects & fit for use.	0%	Approaches: Payment shall be made on pro rata basis on completion of a stage i.e. completion of approaches in all respects as specified in the column of "Stage of payment" in this sub clause.
(5) Guide Bunds and River Training works: On completion Guide Bunds and River Training works complete in all respects	0%	Guide Bunds and River Training works: Payment shall be made on pro rata basis on completion of a stage i.e. completion of Guide Bunds and River Training works complete in all respects as specification.
(6) Other ancillary works: On Completion of Wearing coat, Expansion Joint, Hand Rails, Crash Barriers, Road Signs & Markings, Tests on Completion in all respect.	0%	Other ancillary works: Payment shall be made on Pro rata basis on Completion of a stage in all respect as specified.
B.1 Widening and repairs of underpasses/overpasses	0%	Cost of each underpasses/overpasses shall be determined on pro rata basis with respect to the total linear length of the underpasses/overpasses. Payment shall be made on completion of widening & repair works of a underpasses/overpass.

<p>B.2-New underpasses/overpasses:</p> <p>(i)Foundation:</p> <p>On completion of the foundation work including foundations for wing and return walls abutments, piers.</p>	<p>0%</p>	<p>Foundation:</p> <p>Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length (m) of the underpass/overpass. payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each underpass/overpass.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(2)Substructure:</p> <p>On completion of the Abutments, Piers upto the abutment/pier cap including wing/return/ retaining wall upto top.</p>	<p>0%</p>	<p>Substructure:</p> <p>Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length (m) of the underpass/overpass. payment against substructure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of substructure of each underpass/overpass.</p>
<p>(3) Super-structure: On completion of the super structure in all respects including girder, Deck Slab, bearings.</p>	<p>0%</p>	<p>Super-structure:</p> <p>Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure of at least one span in all respects as specified in the column of “Stage of payment” in this sub clause.</p> <p>In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.</p>

(4) On Completion of Retaining/Reinforced Earth Wall Complete in all respect & Fit for use.	0%	Payment shall be made on pro rata basis on completion of 20% of total area.
(5) Approaches & other Ancillary Works: On completion of wearing coat, expansion joint, Hand rails, crash barriers, road signs & Markings, Stone pitching, Protection Works, Tests on Completion in all respect.	0%	Payment shall be made on pro rata basis on completion of a stage in all respect as specified.

(iii) Major Bridge works ROB/RUB and Structures.

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

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repairs of Major bridges (i) Foundation: On completion of the foundation work including foundations for return walls, abutments, piers.	0%	Foundation: Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridges. payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major bridge In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.

<p>(2)Substructure: On completion of the Abutments, Piers upto the abutment/pier cap</p>	<p>0%</p>	<p>Substructure: payment against substructure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of substructure of major bridge.</p>
<p>(3) Super-structure: On completion of the super structure in all respects including girder, Deck Slab, bearings.</p>	<p>0%</p>	<p>Super-structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearing of at least one span in all respects as specified. In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.</p>
<p>(4) Wearing Coat including expansion Joints</p>	<p>0%</p>	<p>Wearing Coat:- Payment shall be made on completion of wearing coat including expansion joint complete in all respects as specified.</p>
<p>(5) Miscellaneous Items like Hand Rails, Crash Barriers, Road Markings etc.</p>	<p>0%</p>	<p>Miscellaneous: Payment shall be made on Completion of all Misc Works like Hand Rails, Crash Barriers, Road Markings etc. complete in all respects as specified.</p>
<p>(6) Wing Walls/Return Walls up to top</p>	<p>0%</p>	<p>Wing Walls/Return Walls : Payment shall be made on Completion of all wing walls/Return walls complete in all respects as specified.</p>

<p>(7) Guide Bunds and River Training works, etc.</p>	<p>0%</p>	<p>Guide Bunds and River Training works: Payment shall be made on completion of all Guide Bunds/River Training works etc. complete in all respects as specified.</p>
<p>(8) Approaches: (including retaining walls, stone pitching, protection works)</p>	<p>0%</p>	<p>Approaches: Payment shall be made on pro rata basis on completion of 10% of the scope of each stage.</p>
<p>A.2- New Major bridges</p> <p>(i)Foundation:</p> <p>On completion of the foundation work including foundations for return walls, abutments, piers.</p>	<p>0%</p>	<p>Foundation:</p> <p>Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridges. payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major bridge</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(2)Substructure:</p> <p>On completion of the Abutments, Piers upto the abutment/pier cap</p>	<p>0%</p>	<p>Substructure:</p> <p>payment against substructure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of substructure of major bridge.</p>
<p>(3) Super-structure: On completion of the super structure in all respects including girder, Deck Slab, bearings.</p>	<p>0%</p>	<p>Super-structure:</p> <p>Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearing of at least one span in all respects as specified. In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified</p>

		as above.
(4) Wearing Coat including expansion Joints	0%	Wearing Coat:- Payment shall be made on completion of wearing coat including expansion joint complete in all respects as specified.
(5) Miscellaneous Items like Hand Rails, Crash Barriers, Road Markings etc.	0%	Miscellaneous: Payment shall be made on Completion of all Misc Works like Hand Rails, Crash Barriers, Road Markings etc. complete in all respects as specified.
(6) Wing Walls/Return Walls up to top	0%	Wing Walls/Return Walls : Payment shall be made on Completion of all wing walls/Return walls complete in all respects as specified.
(7) Guide Bunds and River Training works, etc.	0%	Guide Bunds and River Training works: Payment shall be made on completion of all Guide Bunds/River Training works etc. complete in all respects as specified.
(8) Approaches: (including retaining walls, stone pitching, protection works)	0%	Approaches: Payment shall be made on pro rata basis on completion of 10% of the scope of each stage.
B.1- Widening and repairs of (a) ROB (b) RUB (1)Foundation	0%	(i) Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the ROB/RUB. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.

(2) Sub-structure:	0%	(ii) Sub-structure: Payment against Sub- structure shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the ROB/RUB.
(3) Super-structure (including bearings)	0%	(iii) Super-structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified. In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Wearing coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as Specified.	0%	(iv) Wearing coat: Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like hand rail, crash barriers, road markings etc.	0%	(v) Miscellaneous: Payment shall be made on completion of miscellaneous work like hand rail, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0%	(vi) Wing walls/return walls: Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On Completion of Retaining/Reinforced Earth Wall Complete in all respect & Fit for use.	0%	Payment shall be made on pro rata basis on completion of 20% of total area.

<p>(8) Approaches & other Ancillary Works: On completion of wearing coat, expansion joint, Hand rails, crash barriers, road signs & Markings, Stone pitching, Protection Works, Tests on Completion in all respect.</p>	<p>0%</p>	<p>Payment shall be made on pro rata basis on completion of a stage in all respect as specified.</p>
<p>B.2- New ROB/RUB (1) Foundation</p>	<p>0%</p>	<p>(i) Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the ROB/RUB.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(2) Sub-structure:</p>	<p>0%</p>	<p>(ii) Sub-structure: Payment against Sub- structure shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the ROB/RUB.</p>
<p>(3) Super-structure (including bearings)</p>	<p>0%</p>	<p>(iii) Super-structure:</p> <p>Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified.</p> <p>In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.</p>
<p>(4) Wearing coat including expansion joints in case of ROB. In case of RUB, rigid pavement under RUB including drainage facility as Specified.</p>	<p>0%</p>	<p>(iv) Wearing coat: Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid</p>

		pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like hand rail, crash barriers, road markings etc.	0%	(v) Miscellaneous: Payment shall be made on completion of miscellaneous work like hand rail, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0%	(vi) Wing walls/return walls: Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On Completion of Retaining/Reinforced Earth Wall Complete in all respect & Fit for use.	0%	Payment shall be made on pro rata basis on completion of 20% of total area.
(8) Approaches & other Ancillary Works: On completion of wearing coat, expansion joint, Hand rails, crash barriers, road signs & Markings, Stone pitching, Protection Works, Tests on Completion in all respect.	0%	Payment shall be made on pro rata basis on completion of a stage in all respect as specified.
C.1- Widening & Repairs of Elevated Section/Flyovers/Grade Seperators. (1)Foundation	0%	(i) Foundation: Cost of each Structure shall be determined on pro rata basis with respect to the total linear length (m) of the Structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the Scope of Foundation of Structure. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure:	0%	(ii) Sub-structure: Payment against Sub- structure shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the Structure.

(3) Super-structure : On Completion of the superstructure in all respects including Girder, Deck Slab, Bearings.	0%	(iii) Super-structure: Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified. In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.
(4) Wearing coat including expansion joints.	0%	(iv) Wearing coat: Payment shall be made on completion of wearing coat including expansion Joints Complete in all respect as specified.
(5) Miscellaneous Items like hand rail, crash barriers, road markings etc.	0%	(v) Miscellaneous: Payment shall be made on completion of miscellaneous work like hand rail, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	0%	(vi) Wing walls/return walls: Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On Completion of Retaining/Reinforced Earth Wall Complete in all respect & Fit for use.	0%	Payment shall be made on pro rata basis on completion of 20% of total area.
(8) Approaches & other Ancillary Works: On completion of wearing coat, expansion joint, Hand rails, crash barriers, road signs & Markings, Stone pitching, Protection Works, Tests on Completion in all respect.	0%	Payment shall be made on pro rata basis on completion of a stage in all respect as specified.

<p>C.2- New Elevated Section/Flyovers/Grade Seperators. (1)Foundation</p>	<p>0%</p>	<p>(i) Foundation: Cost of each Structure shall be determined on pro rata basis with respect to the total linear length (m) of the Structure. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the Scope of Foundation of Structure.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
<p>(2) Sub-structure:</p>	<p>0%</p>	<p>(ii) Sub-structure: Payment against Sub- structure shall be made on pro rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of the Structure.</p>
<p>(3) Super-structure : On Completion of the superstructure in all respects including Girder, Deck Slab, Bearings.</p>	<p>0%</p>	<p>(iii) Super-structure:</p> <p>Payment shall be made on pro rata basis on completion of a stage i.e. completion of super-structure including bearings of atleast one span in all respects as specified.</p> <p>In case of structures where pre cast girders have been proposed by the contractor, 50% of the stage payment shall be due and payable on casting of girders of each span & Balance 50% of the stage payment shall be made on completion of stage specified as above.</p>
<p>(4) Wearing coat including expansion joints.</p>	<p>0%</p>	<p>(iv) Wearing coat: Payment shall be made on completion of wearing coat including expansion Joints Complete in all respect as specified.</p>
<p>(5) Miscellaneous Items like hand rail, crash barriers, road markings etc.</p>	<p>0%</p>	<p>(v) Miscellaneous: Payment shall be made on completion of miscellaneous work like hand rail, crash barriers, road markings etc. complete in all respects as specified.</p>

(6) Wing walls/return walls	0%	(vi) Wing walls/return walls: Payment shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) On Completion of Retaining/Reinforced Earth Wall Complete in all respect & Fit for use.	0%	Payment shall be made on pro rata basis on completion of 20% of total area.
(8) Approaches & other Ancillary Works: On completion of wearing coat, expansion joint, Hand rails, crash barriers, road signs & Markings, Stone pitching, Protection Works, Tests on Completion in all respect.	0%	Payment shall be made on pro rata basis on completion of a stage in all respect as specified.

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

(2) The Schedule for exclusive tunnel projects may be prepared as per site requirements before bidding with due approval of DG(RD)&SS, MoRT&H.

(iv) Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
(i) Toll plaza	0%	Unit of measurement is each completed toll plaza. Payment of each toll plaza shall be made on pro rata basis with respect to the total of all toll plazas.
(ii) Road side drains		Unit of measurement is linear length in km. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10 % (ten per cent) of the total length.
Lined Drain	12.93%	
Unlined Drain	0%	
(iii) Road signs, safety devices, Road Furniture etc.	0.94%	
(iv) Road Markings & studs	0.23%	
(v) Crash Barrier	6.65%	
(vii) Project Facilities		Payment shall be made on pro
a) Bus bays		

b) Way side amenities excluding slip roads & but including all internal roads (service areas including truck lay byes)	0%	rata basis for completed facilities.
c) others	0%	
(vii) Retaining Wall	78.15%	
(viii) RE Wall	0%	Unit of measurement is linear length. Payment shall be made on pro rata basis on completion of a stage in a length of not less than 10% (ten per cent) of the total length.
(ix) Street Lighting	0%	
(x) Utility Ducts	0%	
(xi) Boundary Wall	0%	
(xii) ATMS	0%	
(xiii) Rain Water Harvesting	0%	
(xiv) Road side plantation including horticulture in way side amenities	0%	
(xv) Protection works other than approaches to the bridges, elevated sections/flyovers/grade separators and ROB/ RUBs	0.61%	
(xvi) Safety and traffic management during construction	0.02%	Payment shall be made on prorata basis every six months.
(viii) Other Misc Works Including connecting Road & Junction under grade separator	0.47%	Payment shall be made on pro rata basis on completion of a each stage.

2. Procedure for payment for Maintenance

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

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