Schedules

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

(i) Site of the 4-lane Project Highway shall include the land, buildings, structures and road works as described in Annex-I of this Schedule-A.

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

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

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

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

Annex – I

(Schedule-A)

Site

Through suitable drawings and description in words, the land, buildings, structures and road works comprising the Site shall be specified briefly but precisely in this Annex-I.

1. Site

The Site of the Project (4-Lane at-grade road)comprises the section ofNH-29 (Old NH-36) commencing from design ch.km 96+400(existing Ch. km 95+400 of NH 29) to km 113+830 (existing Ch. km 113+300 of NH 29) i.e. Daboka -Lahorijan section in the State ofAssam. The land, carriageway and structures comprising the Site are described below. The design Ch. Corresponding to existing Ch. Is presented below. All chainages in this section are design chainages.

Sl. No.	Existing km Stone	Design Chainage (km)
1	96	97+140
2	97	98+130
3	98	99+945
4	99	100+850
5	100	101+730
6	101	102+590
7	102	103+320
8	103	104+110
9	104	104+960
10	105	105+767
11	106	106+755
12	107	107+670
13	108	108+590
14	109	109+520
15	110	110+470
16	111	111+390
17	112	112+310
18	113	113+220

2. Land

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

Chainage(km)	Distance from ECL to EROW		EROW (m)
	Left	Right	
95+400 to 113+300	15	15	30

3. Carriageway

The present carriageway of the Project Highway is double Lane with paved shoulder. Average width of the carriageway is10.0 m. The type of the existing pavement is flexible.

4. Major Bridges

The Site includes the following Major Bridges:

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

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

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

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

6. Grade separators

The Site includes the following grade separators:

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

7. Minor bridges

The Site includes the following minor bridges:

Sl No	Existing Category	Existing Chainage (km)	Existing Type of Bridge	No's of Span	Existing Span Arrang. (No. of Span x Span length in m)	Existing Total Length (m)	Existing Total Width (m)
1	MNBR	96+600	Solid Slab	3	3x9	27.0	8.1
2	MNBR	98+300	Solid Slab	3	3x6	18.0	8.0
3	MNB	101+400	RCC T Girder	1	1x25.3	25.3	8.3
4	MNB	104+300	RCC T Girder	1	1x15.3	15.3	8.1
5	MNB	106+100	RCC T Girder	1	1x15.1	15.1	8.0
6	MNB	111+600	RCC T Girder	1	1x15.2	15.2	8.1

8. Railway level crossings

The Site includes the following railway level crossings:

S. No.	Location (km)	Remarks
NIL		

9. Underpasses (vehicular, non-vehicular)

The Site includes the following underpasses:

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

10. Culverts

The Site has the following culverts:

Sl. No.	Topo Chainage (km)	Type of Culvert	Span Arrangement/Dia. (m)	Total Width of Structure (m)	Total Roadway Width (m)
1	95+743	Pipe Culvert	1x0.9	17.776	10.932
2	96+084	Pipe Culvert	1x1.2	17.725	11.703
3	96+505	Pipe Culvert	1x1.2	24.864	9.469
4	96+834	Pipe Culvert	1x0.6	17.671	8.701
5	96+900	Pipe Culvert	1x0.6	15.886	8.254
6	97+207	Pipe Culvert	1x1.2	20.050	8.050
7	97+527	Pipe Culvert	1x1.2	15.262	8.755
8	97+779	Pipe Culvert	1x1.2	15.056	9.366
9	97+906	Pipe Culvert	1x1.2	17.725	7.847
10	98+058	Pipe Culvert	1x1.2	17.566	9.923
11	98+211	Pipe Culvert	1x1.2	17.811	9.308
12	98+697	Pipe Culvert	1x1.2	20.268	10.014
13	99+150	Pipe Culvert	1x1.2	17.725	10.701
14	99+349	Pipe Culvert	1x0.9	18.138	10.523
15	100+096	Pipe Culvert	1x0.9	17.250	10.450
16	100+616	Pipe Culvert	1x1.2	18.000	10.200
17	100+716	Pipe Culvert	1x0.9	17.680	10.500
18	100+986	Pipe Culvert	1x0.9	17.700	10.600
19	101+026	Pipe Culvert	1x0.9	17.600	10.800
20	101+466	Pipe Culvert	1x1.2	28.600	11.500
21	101+661	Pipe Culvert	1x1.2	18.000	11.600
22	101+866	Pipe Culvert	1x1.2	17.800	11.500
23	102+206	Pipe Culvert	1x1.2	15.140	10.700
24	102+393	Pipe Culvert	1x1.2	17.450	12.000
25	102+501	Pipe Culvert	1x1.2	17.764	13.100
26	102+828	Pipe Culvert	1x1.2	17.980	12.540
27	103+046	Pipe Culvert	1x1.2	17.640	11.000
28	103+296	Pipe Culvert	1x1.2	17.600	11.200
29	103+496	Pipe Culvert	1x1.2	15.290	11.100
30	103+776	Pipe Culvert	1x1.2	15.500	11.000
31	104+436	Pipe Culvert	1x1.2	15.300	11.690
32	104+786	Pipe Culvert	1x1.2	15.496	12.350
33	104+976	Pipe Culvert	1x1.2	20.250	13.120
34	105+191	Pipe Culvert	1x1.2	17.840	11.590
35	105+941	Pipe Culvert	1x1.2	20.500	11.890
36	105+996	Pipe Culvert	1x1.2	20.400	12.900
37	106+256	Pipe Culvert	1x1.2	22.820	11.700
38	106+636	Pipe Culvert	1x1.2	27.186	11.650
39	107+016	Pipe Culvert	1x1.2	21.800	11.300
40	107+721	Pipe Culvert	1x1.2	17.764	13.100

Sl. No.	Topo Chainage (km)	Type of Culvert	Span Arrangement/Dia. (m)	Total Width of Structure (m)	Total Roadway Width (m)
41	107+941	Pipe Culvert	1x1.2	17.980	12.540
42	108+041	Pipe Culvert	1x1.2	17.640	11.000
43	108+269	Pipe Culvert	1x1.2	17.600	11.200
44	108+471	Pipe Culvert	1x1.2	15.290	11.100
45	108+631	Pipe Culvert	1x1.2	15.500	11.000
46	108+821	Pipe Culvert	1x1.2	15.300	11.690
47	109+121	Pipe Culvert	1x1.2	15.496	12.350
48	109+521	Pipe Culvert	1x1.2	20.250	13.120
49	109+701	Pipe Culvert	1x1.2	17.840	11.590
50	109+900	Chocked		16.490	11.450
51	110+191	Pipe Culvert	1x1.2	17.725	7.847
52	110+261	Pipe Culvert	1x1.2	17.566	9.923
53	110+381	Pipe Culvert	1x1.2	17.811	9.308
54	110+601	Pipe Culvert	1x1.2	20.268	10.014
55	110+650	Pipe Culvert	1x0.9	18.138	10.523
56	110+721	Pipe Culvert	1x1.2	17.725	10.701
57	110+821	Pipe Culvert	1x0.9	18.138	10.523
58	110+921	Pipe Culvert	1x1.2	17.725	11.703
59	111+041	Pipe Culvert	1x1.2	24.864	9.469
60	111+391	Pipe Culvert	1x0.6	17.671	8.701
61	112+081	Pipe Culvert	1x0.6	15.886	8.254
62	112+171	Pipe Culvert	1x1.2	20.050	8.050
63	112+361	Pipe Culvert	1x1.2	17.980	12.540
64	112+661	Pipe Culvert	1x1.2	17.640	11.000

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	
	From km	to km	Masonry/cc (Pucca)	Earthen (Kutcha)
NIL				

14. Major junctions

The details of major junctions are as follows:

Sl No.	Existing Chainage (km)	Road Segment	Side	Destination	Surfacing Type	Carriageway Width (m)
NIL						

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

15. Minor junctions

The details of the minor junctions are as follows:

Sl. No.	Existing Ch.(km)	Type	Width (m)	No. of Leg	Side
1	95+450	Minor	7.9	3 legged	Left
2	96+125	Minor	3.5	3 legged	Right
3	96+815	Minor	3.5	3 legged	Right
4	97+050	Minor	3.5	3 legged	Right
5	98+020	Minor	3.9	3 legged	Right
6	98+275	Minor	3.9	3 legged	Right
7	101+390	Minor	3.5	3 legged	Left
8	101+480	Minor	4.5	3 legged	Left
9	102+220	Minor	3.8	3 legged	Right
10	103+800	Minor	3.5	3 legged	Right
11	107+370	Minor	7.5	3 legged	Right
12	109+750	Minor	8.6	3 legged	Left
13	110+710	Minor	7.0	3 legged	Left
14	111+400	Minor	7.0	3 legged	Right
15	111+810	Minor	3.5	3 legged	Left
16	111+850	Minor	5.0	3 legged	Left
17	112+200	Minor	7.0	3 legged	Left

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			

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	**Chainage (KM)**		**Length (km)**	**Width (m)**	**Date of providing Right of Way**
(1)	**FROM**	**TO**	**(3)**	**(4)**	**(5)**
(i) Full Right of Way (full width)	96+400	98+480	2080	42	At appointed date
	98+480	99+010	530	35.5	
	99+010	100+810	1800	42	
	100+810	101+070	260	35.5	
	101+070	101+190	120	42	
	101+190	101+370	180	35.5	
	101+370	105+138	3768	42	
	105+138	110+670	5532	35.5	
	110+670	113+830	3160	42	
(ii) Part Right of Way (part width)	NIL				
(a) Stretch					
(b) Stretch					
(c) Stretch					
(iii) Balance Right of Way (width)	NIL				
(a) Stretch					
(b) Stretch					
(c) Stretch					

Annex - III

(Schedule-A)

Alignment Plans

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

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

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

Annex – IV

(Schedule-A)

Environment Clearances

The following environment clearances have been obtained:

Environment Clearances is not applicable for the project

The following environment clearances are awaited:

-NIL-

Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. Rehabilitation and augmentation

Rehabilitation and augmentation shall include four lane at grade improvement 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 Project highway

Description of the Project Highway shall be given by the Authority in detail together with explanatory drawings (where necessary) to explain the Authority's requirements precisely in order to avoid subsequent changes in the Scope of the Project. The particulars that must be specified in this Schedule-B are listed below as per the requirements of the Manual of Specifications and Standards for Four Laning of Highways (IRC: SP:84-2019), referred to as the Manual. If any standards, specifications or details are not given in the Manual, the minimum design/construction requirements shall be specified in this Schedule. In addition to these particulars, all other essential project specific details, as required, should be provided in order to define the Scope of the Project clearly and precisely.

1. Widening of the Existing Highway

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

(ii) Width of Carriageway

(a) In rural areas, at grade four-Laning with paved shoulders shall be undertaken. The paved carriageway shall be 7(seven) m (excluding paved shoulder and kerb shyness) wide on either side in accordance with the typical cross section's drawings in the Manual.

Provided that in the built-up areas: the width of the carriageway (either side) shall be as specified in the following table:

Sl. No.	Built-up stretch	Design Ch.(km)		Length(km)	Width(m)	Typical cross section
		From	To			
NIL						

(b) Except as otherwise provided in this Agreement, the width of the paved carriageway and cross-sectional features shall conform to paragraph 1.1 above.

2. Geometric Design and General Features

(i) General

Geometric design and general features of the Project Highway shall be in accordance with Section 2 of the Manual.

(ii) Design speed

The design speed shall be the ruling design speed of 100 kmph in Plain/ Rolling terrain and 60 kmph in hilly terrain for this project.

(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:

Details of Realignments:

Sl. No.	From	To	Length	TCS No.
1	98+730	98+800	70	6
2	98+800	98+850	50	10A
3	98+920	98+950	30	6
4	98+950	98+970	20	10A
5	99+010	99+050	40	8A
6	99+050	99+090	40	1A
7	99+430	99+450	20	1A
8	99+450	99+650	200	9
9	99+730	99+950	220	9
10	100+030	100+200	170	1A
11	100+900	100+950	50	6
12	100+950	100+990	40	10A
13	101+070	101+190	120	1A
14	101+190	101+370	180	11
15	101+370	101+410	40	9
16	101+470	101+550	80	8A
17	101+550	101+570	20	1A
18	101+780	101+870	90	1A
19	103+670	103+720	50	1A
20	105+620	105+700	80	6
21	107+130	107+240	110	10A
22	107+440	107+480	40	10A
23	107+640	107+730	90	6
24	107+860	107+970	110	6
25	108+300	108+400	100	11
26	108+950	109+000	50	6
27	109+430	109+450	20	10A
28	109+450	109+550	100	11
29	109+550	109+570	20	6
30	109+650	109+880	230	10A
31	110+180	110+280	100	10A

Sl. No.	From	To	Length	TCS No.
32	110+450	110+550	100	10A
33	110+670	110+830	160	1A
34	110+900	111+000	100	8A
35	111+490	111+560	70	8A
36	111+970	112+192	222	1A
37	112+208	112+280	72	1A
38	112+370	112+420	50	1A
39	112+830	112+980	150	1A
40	113+190	113+640	450	1A

- These details are excluding of bridge length

Details of Bypasses:

Sl. No.	Design Ch.(km)		Length (m)	TCS No.	Remarks
	From	To			
NIL					

(iv) Right of Way

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

(v) Type of shoulders

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

Sl. NO	Stretch		Fully paved shoulders/ footpaths	Width (m)		Reference to cross section
	From (km)	To (km)		Paved shoulder	Footpath	
NIL						

(b) In open country area, 2.5 m wide paved shoulder on either side and 1.5m width Earthen shoulder has been proposed in TCS-1,1A, 2, 4,4A& 6.

(c) In cut section, 1.5m wide paved shoulder on either side and 1.0m wide earthen shoulder on valley side has been proposed in TCS-8, 8A, 9, 10, 10A & 11.

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

(vi) Lateral and vertical clearances at underpasses

(a) Lateral and vertical clearances and provision of guardrails/crash barriers shall be as per the provision of the Manual.

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

Sl. No	Chainage (km)	Type	Lateral clearance (m)	Minimum vertical clearance (m)
NIL				

(vii) Lateral and vertical clearances at overpasses

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

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

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

(viii) Service roads/Slip road

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

Sl No.	Location of Service Road (km)		Right Hand Side (RHS) / Left Hand Side (LHS) / Both Sides	Length (km) of Service Road
	From	To		
NIL				

(ix) Grade separated structures

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

Sl No.	Type of Underpasses	Design Chainage (km)	Span Arrangement (Nos. x Length in m)	Total Length (m)	Overall Width (m)	Structure Type
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			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:

Sl. No.	Location	Type of crossing
NIL		

(xi) Typical cross-sections of the Project Highway

Typical cross section details are given below:

Sl. No.	From	To	Length	TCS No.	Description
1	96+400	96+550	150	2	Eccentric Widening / Reconstruction - Left side
2	96+550	96+620	70	1	Concentric Widening / Reconstruction
4	96+620	97+667	1047	2	Eccentric Widening / Reconstruction - Left side
5	97+667	97+694	26.5	STR	MNB
6	97+694	97+770	77	2	Eccentric Widening / Reconstruction - Left side
7	97+770	97+870	100	8	Eccentric Widening / Reconstruction in Cut Section- Left side
8	97+870	98+480	610	2	Eccentric Widening / Reconstruction - Left side
9	98+480	98+550	70	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
10	98+550	98+730	180	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
11	98+730	98+800	70	6	New Construction / Realignment (Forest Area)
12	98+800	98+850	50	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
13	98+850	98+900	50	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
14	98+900	98+920	20	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
15	98+920	98+950	30	6	New Construction / Realignment (Forest Area)
16	98+950	98+970	20	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
17	98+970	99+010	40	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
18	99+010	99+050	40	8A	New Construction / Realignment in Cut Section - Left side
19	99+050	99+090	40	1A	New Construction / Realignment
20	99+090	99+140	50	1	Concentric Widening / Reconstruction
21	99+140	99+369	229	2	Eccentric Widening / Reconstruction - Left side
22	99+369	99+387	18	STR	MNB

Sl. No.	From	To	Length	TCS No.	Description
23	99+387	99+430	43	1	Concentric Widening / Reconstruction
24	99+430	99+450	20	1A	New Construction / Realignment
26	99+450	99+650	200	9	New Construction / Realignment in Cut Section - Both side
27	99+650	99+730	80	2	Eccentric Widening / Reconstruction - Left side
28	99+730	99+950	220	9	New Construction / Realignment in Cut Section - Both side
29	99+950	100+030	80	2	Eccentric Widening / Reconstruction - Left side
30	100+030	100+200	170	1A	New Construction / Realignment
31	100+200	100+310	110	2	Eccentric Widening / Reconstruction - Left side
32	100+310	100+410	100	2	Eccentric Widening / Reconstruction - Right side
33	100+410	100+500	90	1	Concentric Widening / Reconstruction
34	100+500	100+810	310	2	Eccentric Widening / Reconstruction - Right side
35	100+810	100+900	90	4	Concentric Widening / Reconstruction (Forest Area)
36	100+900	100+950	50	6	New Construction / Realignment (Forest Area)
37	100+950	100+990	40	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
38	100+990	101+050	60	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
39	101+050	101+070	20	4	Concentric Widening / Reconstruction (Forest Area)
40	101+070	101+190	120	1A	New Construction / Realignment
41	101+190	101+370	180	11	New Construction / Realignment in Cut Section - Both side (Forest Area)
42	101+370	101+410	40	9	New Construction / Realignment in Cut Section - Both side
43	101+410	101+450	40	2	Eccentric Widening / Reconstruction - Right side
44	101+450	101+470	20	8	Eccentric Widening / Reconstruction in Cut Section- Right side
45	101+470	101+550	80	8A	New Construction / Realignment in Cut Section - Right side
46	101+550	101+570	20	1A	New Construction / Realignment
47	101+570	101+700	130	1	Concentric Widening / Reconstruction
48	101+700	101+780	80	2	Eccentric Widening / Reconstruction - Left side
49	101+780	101+870	90	1A	New Construction / Realignment
50	101+870	102+020	150	2	Eccentric Widening / Reconstruction - Right side
51	102+020	102+202	182	2	Eccentric Widening / Reconstruction - Left side

Sl. No.	From	To	Length	TCS No.	Description
52	102+202	102+228	25	STR	MNB
53	102+228	102+490	262	2	Eccentric Widening / Reconstruction - Left side
54	102+490	102+550	60	1	Concentric Widening / Reconstruction
55	102+550	102+670	120	2	Eccentric Widening / Reconstruction - Right side
56	102+670	102+750	80	1	Concentric Widening / Reconstruction
57	102+750	102+840	90	2	Eccentric Widening / Reconstruction - Left side
58	102+840	102+880	40	1	Concentric Widening / Reconstruction
59	102+880	103+020	140	2	Eccentric Widening / Reconstruction - Right side
60	103+020	103+060	40	1	Concentric Widening / Reconstruction
61	103+060	103+120	60	2	Eccentric Widening / Reconstruction - Left side
62	103+120	103+170	50	1	Concentric Widening / Reconstruction
63	103+170	103+670	500	2	Eccentric Widening / Reconstruction - Right side
64	103+670	103+720	50	1A	New Construction / Realignment
65	103+720	104+030	310	2	Eccentric Widening / Reconstruction - Right side
66	104+030	104+120	90	1	Concentric Widening / Reconstruction
67	104+120	104+270	150	2	Eccentric Widening / Reconstruction - Right side
68	104+270	104+340	70	1	Concentric Widening / Reconstruction
69	104+340	104+720	380	2	Eccentric Widening / Reconstruction - Right side
70	104+720	104+800	80	2	Eccentric Widening / Reconstruction - Left side
71	104+800	105+122	322	2	Eccentric Widening / Reconstruction - Right side
72	105+122	105+138	15	STR	MNB
73	105+138	105+620	482	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
74	105+620	105+700	80	6	New Construction / Realignment (Forest Area)
75	105+700	105+820	120	4	Concentric Widening / Reconstruction (Forest Area)
76	105+820	106+500	680	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
77	106+500	106+550	50	4	Concentric Widening / Reconstruction (Forest Area)
78	106+550	106+750	200	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
79	106+750	106+822	72	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
80	106+822	106+838	15	STR	MNB
81	106+838	106+880	42	4A	Eccentric Widening / Reconstruction - Left

Sl. No.	From	To	Length	TCS No.	Description
					side (Forest Area)
82	106+880	106+950	70	4	Concentric Widening / Reconstruction (Forest Area)
83	106+950	107+130	180	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
84	107+130	107+240	110	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
85	107+240	107+440	200	10	Eccentric Widening / Reconstruction in Cut Section - Right side (Forest Area)
86	107+440	107+480	40	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
87	107+480	107+550	70	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
88	107+550	107+640	90	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
89	107+640	107+730	90	6	New Construction / Realignment (Forest Area)
90	107+730	107+780	50	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
91	107+780	107+860	80	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
92	107+860	107+970	110	6	New Construction / Realignment (Forest Area)
93	107+970	108+100	130	4	Concentric Widening / Reconstruction (Forest Area)
94	108+100	108+200	100	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
95	108+200	108+300	100	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
96	108+300	108+400	100	11	New Construction / Realignment in Cut Section - Both side (Forest Area)
97	108+400	108+900	500	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
98	108+900	108+950	50	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
99	108+950	109+000	50	6	New Construction / Realignment (Forest Area)
100	109+000	109+050	50	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
101	109+050	109+170	120	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
102	109+170	109+250	80	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
103	109+250	109+430	180	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
104	109+430	109+450	20	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
105	109+450	109+550	100	11	New Construction / Realignment in Cut Section - Both side (Forest Area)

Sl. No.	From	To	Length	TCS No.	Description
106	109+550	109+570	20	6	New Construction / Realignment (Forest Area)
107	109+570	109+650	80	4A	Eccentric Widening / Reconstruction - Right side (Forest Area)
108	109+650	109+880	230	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
109	109+880	110+000	120	10	Eccentric Widening / Reconstruction in Cut Section - Left side (Forest Area)
110	110+000	110+180	180	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
111	110+180	110+280	100	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
112	110+280	110+450	170	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
113	110+450	110+550	100	10A	New Construction / Realignment in Cut Section - Left side (Forest Area)
114	110+550	110+670	120	4A	Eccentric Widening / Reconstruction - Left side (Forest Area)
115	110+670	110+830	160	1A	New Construction / Realignment
116	110+830	110+900	70	2	Eccentric Widening / Reconstruction - Left side
117	110+900	111+000	100	8A	New Construction / Realignment in Cut Section - Left side
118	111+000	111+100	100	2	Eccentric Widening / Reconstruction - Left side
119	111+100	111+200	100	2	Eccentric Widening / Reconstruction - Left side
120	111+200	111+350	150	8	Eccentric Widening / Reconstruction in Cut Section- Left side
121	111+350	111+410	60	2	Eccentric Widening / Reconstruction - Right side
122	111+410	111+490	80	2	Eccentric Widening / Reconstruction - Left side
123	111+490	111+560	70	8A	New Construction / Realignment in Cut Section - Left side
124	111+560	111+700	140	2	Eccentric Widening / Reconstruction - Left side
125	111+700	111+900	200	8	Eccentric Widening / Reconstruction in Cut Section- Left side
126	111+900	111+970	70	2	Eccentric Widening / Reconstruction - Right side
127	111+970	112+192	222	1A	New Construction / Realignment
128	112+192	112+208	15	STR	MNB
129	112+208	112+280	72	1A	New Construction / Realignment
130	112+280	112+370	90	1	Concentric Widening / Reconstruction
131	112+370	112+420	50	1A	New Construction / Realignment
132	112+420	112+830	410	2	Eccentric Widening / Reconstruction - Right side
133	112+830	112+980	150	1A	New Construction / Realignment

Sl. No.	From	To	Length	TCS No.	Description
134	112+980	113+190	210	2	Eccentric Widening / Reconstruction - Left side
135	113+190	113+640	450	1A	New Construction / Realignment
136	113+640	113+830	190	2	Eccentric Widening / Reconstruction - Right side
			17430		

Refer to Typical cross section drawing in Annexure III of schedule A

3. Intersections and Grade Separators

All intersections and grade separators shall be as per the provision of relevant 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
Properly designed at grade intersections i.e. major and minor intersection shall be provided at the locations and of the features given in the table below:

Sl. No.	Design Chainage (km)	Road Segment	Type of Intersection	Type	Side	Improvement Proposals	Remarks
NIL							

Sl. No.	Design Chainage (km)	Type of Intersection	Type	Side	Improvement Proposals
1	96+560	Minor	3 legged	Right	At Grade
2	99+130	Minor	3 legged	Right	At Grade
3	100+090	Minor	4 legged	Both	At Grade
4	100+810	Minor	3 legged	Left	At Grade
5	101+380	Minor	3 legged	Left	At Grade
6	102+150	Minor	3 legged	Left	At Grade
7	102+670	Minor	3 legged	Left	At Grade
8	103+330	Minor	3 legged	Right	At Grade
9	104+600	Minor	3 legged	Right	At Grade
10	105+780	Minor	3 legged	Right	At Grade
11	112+250	Minor	3 legged	Right	At Grade
12	112+720	Minor	3 legged	Left	At Grade
13	113+830	Minor	3 legged	Right	At Grade

Note: In case any additional junction is identified during construction period, the same shall be improved as per manual and will not qualify for Change of Scope

(ii) Grade separated intersection with/without ramps

Sl No.	Type of Intersection	Design Chainage (km)	Span Arrangement (Nos. x Length in m)	Total Length (m)	Overall Width (m)	Structure Type
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 becorrected.

(ii) Raising of the existing road as per Section 4 of the Manual
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]
NIL			

5. Pavement Design

(i) Pavement design shall be carried out in accordance with the provision of section 5 of the Manual.

(ii) Type of pavement

Flexible pavement shall be proposed at the entire project road.

(iii) Design requirements

Design of new pavement has been carried out based on IRC: 37-2018 "Guidelines for the design of Flexible Pavements"

(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 minimum design traffic of 20 msa. However, in case the traffic is more than 20 msa at the time of design of project highway, then the higher design traffic will be adopted for pavement design.

Service Roads/ Slip Roads shall be designed for 10 msa design traffic.

(c) Design Subgrade CBR

Notwithstanding anything to the contrary contained in this Agreement or the Manual, the Contractor shall design the pavement for minimum subgrade CBR of 8%.

(iv) Reconstruction of stretches

Contractor shall investigate the existing pavement and finalize the reconstruction

stretch in consultation with Authority's Engineer.
Those shall be designed as new pavement.

(v) Overlay stretches

Contractor shall investigate the existing pavement and finalize the overlay stretch in consultation with Authority's Engineer. However, the overlay thickness will not be less than 30mm BC & 70mm DBM

6. Roadside Drainage

Drainage system including surface and subsurface drains for the Project Highway shall be provided as per section 6 of the manual and as per cross section schedule provided as Annexure -I to this schedule.

- Lined trapezoidal drain (min area 0.4 sqm) need to be provided at hill side with a minimum length of 5050m.
- Unlined trapezoidal drain needs to be provided at both side in rural area with a minimum length of 26209m.
- Median Drain need to be provided in super elevation stretch with a minimum length of 12563m

Note: The length of lined drain as specified is indicative. In case any additional length is identified during construction period, the same shall be improved as per manual and will not qualify for Change of Scope.
The EPC Contractor shall ensure proper functioning of road side drain by designing them as per site condition and considering the outfall location.

7. Design of Structures

(i) General

(a) All Grade separator, Bridges, culverts and structures shall be designed and constructed in accordance with the section 7 of the Manual and shall conform to the cross- sectional features and other details specifiedtherein.

(b) Width of the carriageway of new bridges shall be asfollows:

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Category	Proposed Total Length (m)	Width of proposed structure (m)	Proposed Type of Superstructure	Improvement Proposal
NIL							

Width of the carriageway of new grade separator structure shall be as follows:

Sl No.	Type of Intersection	Design Chainage (km)	Span Arrangement (Nos. x Length in m)	Total Length (m)	Overall Width (m)	Structure Type
NIL						

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

Sl N-o.	Design Chainage (km)	Remarks
1	97+680	-
2	99+378	-
3	102+215	-
4	105+130	-
5	106+830	-
6	112+200	-

(d) All bridges shall be high-level bridges: NIL

(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 for the Project Highway shall conform to the typical cross-sections given in the 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.	Design Chainage (km)	Type of Existing Culvert	Existing Span Arrangement/Dia. (m)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
1	97+832	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
2	97+896	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
3	100+345	Pipe Culvert	1x0.9	Pipe	1x1.2	New 4Lane	Reconstruction

Sl. No.	Design Chainage (km)	Type of Existing Culvert	Existing Span Arrangement/Dia. (m)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
				Culvert			
4	101+780	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
5	108+700	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
6	111+032	Pipe Culvert	Choked	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
7	111+660	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
8	111+800	Pipe Culvert	1x0.9	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
9	112+370	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
10	113+060	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction

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

(c) Widening of existing culverts:

All existing culverts which are not to be reconstructed shall be widened tothe roadway width of the Project Highway as per the typical cross section given in the section 7 of the Manual. Repairs and strengthening of existing structures where required shall be carried out.

Sl. No.	Design Chainage (km)	Type of Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
1	96+743	Pipe Culvert	1x0.9	New 2Lane	Ext. Retain
2	97+085	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
3	97+505	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
4	98+201	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
5	98+520	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
6	98+900	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
7	99+206	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
8	101+670	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
9	102+049	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
10	102+079	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
11	102+525	Pipe Culvert	1x1.2	New 2Lane	Retain & Repair
12	102+720	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
13	102+920	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
14	103+260	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
15	103+455	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
16	103+560	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain

Sl. No.	Design Chainage (km)	Type of Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
17	103+871	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
18	104+090	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
19	104+350	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
20	104+545	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
21	104+820	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
22	105+480	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
23	105+815	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
24	106+005	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
25	106+224	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
26	106+975	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
27	107+028	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
28	107+270	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
29	107+650	Pipe Culvert	1x1.2	New 2Lane	Retain & Repair
30	107+995	Pipe Culvert	1x1.2	New 2Lane	Retain & Repair
31	108+920	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
32	109+020	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
33	109+248	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
34	109+610	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
35	110+100	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
36	110+500	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
37	110+680	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
38	111+170	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
39	111+240	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
40	111+360	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
41	111+580	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
42	111+700	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
43	111+900	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
44	113+150	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
45	113+340	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
46	113+640	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain

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

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

Sl. No.	Design Chainage (km)	Type of Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
1	98+774	Pipe Culvert	1x1.2	New 4Lane	New Construction
2	99+050	Pipe Culvert	1x1.2	New 4Lane	New Construction
3	99+692	Pipe Culvert	1x1.2	New 4Lane	New Construction
4	100+136	Pipe Culvert	1x1.2	New 4Lane	New Construction

Sl. No.	Design Chainage (km)	Type of Culvert	Span Arrangement (m)	Improvement Proposal	Remarks
5	101+130	Pipe Culvert	1x1.2	New 4Lane	New Construction
6	109+450	Pipe Culvert	1x1.2	New 4Lane	New Construction
7	109+800	Pipe Culvert	1x1.2	New 4Lane	New Construction
8	112+020	Pipe Culvert	1x1.2	New 4Lane	New Construction
9	113+180	Pipe Culvert	1x1.2	New 4Lane	New Construction

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

(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
Locations as mentioned in Para 7 II-(c), above. All necessary repairs as per Manual		

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

(iii) Bridges: NIL

(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	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Total Length (m)	Width of proposed structure (m)	Proposed Type of Superstructure	Remarks
1	112+200	1x15.2	15.2	13.5+13.5	RCC T-Girder	Reconstruction

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

(ii) The following narrow bridges shall be widened:

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Total Length (m)	Proposed Type of Superstructure	Width of proposed structure (m)	Remarks
1	97+680	3x9.0	27.0	RCC Box	Widening + 13.5	Widening

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Total Length (m)	Proposed Type of Superstructure	Width of proposed structure (m)	Remarks
2	99+378	3x6.0	18.0	RCC Box	Widening + 13.5	Widening
3	102+215	1x25.3	25.3	RCC T-Girder	Retain + 13.5	Retain & Repair
4	105+130	1x15.3	15.3	RCC T-Girder	Retain + 13.5	Retain & Repair
5	106+830	1x15.1	15.1	RCC T-Girder	Retain + 13.5	Retain & Repair

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

(b) 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.The details are given below:

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Category	Proposed Total Length (m)	Width of proposed structure (m)	Proposed Type of Superstructure	Improvement Proposal
NIL							

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

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Total Length (m)	Proposed Type of Superstructure	Width of proposed structure (m)	Remarks
1	102+215	1x25.3	25.3	RCC T-Girder	Retain + 13.5	Retain & Repair
2	105+130	1x15.3	15.3	RCC T-Girder	Retain + 13.5	Retain & Repair
3	106+830	1x15.1	15.1	RCC T-Girder	Retain + 13.5	Retain & Repair

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

Sl No	Design Chainage (km)	Proposed Span Arrang (No. of Span x Span length in m)	Proposed Total Length (m)	Proposed Type of Superstructure	Width of proposed structure (m)	Remarks
1	102+215	1x25.3	25.3	RCC T-Girder	Retain + 13.5	Retain & Repair
2	105+130	1x15.3	15.3	RCC T-Girder	Retain + 13.5	Retain & Repair
3	106+830	1x15.1	15.1	RCC T-Girder	Retain + 13.5	Retain & Repair

(e) Drainage system for bridge decks

An effective drainage system for bridge decks shall be provided as specified in section 7 of the Manual

(f) Structures in marine environment

NIL

(iv) Rail-road bridges: NIL

(a) Design, construction and detailing of ROB/RUB shall be as specified in the provision of 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.	Location of Level crossing (Chainage	Number and length of
NIL		

(v) Grade separated structures

Design of grade separator shall be as per section 7 of the manual. Locations and type of the grade separated structures specified in paragraphs 2 (ix).

(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
1	102+215	As decided by AE as per site requirement
2	105+130	As decided by AE as per site requirement
3	106+830	As decided by AE as per site requirement

(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
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 should be of high intensity grade with encapsulated lens or with micro prismatic retro reflective element in accordance with ASTM Standard D 4956 – 04

9. Road side Furniture

(i) Roadside furniture shall be provided in accordance with the provision of section 9 of the Manual.

(ii) Overhead traffic signs:

Minimum 2 nos. overhead traffic signs shall be provided for the project stretch.

Note: The exact location of Signs and size shall be finalized as per provisions in Manual and as per site conditions.

10. Compulsory Afforestation

Compulsory afforestation should be as per section 11 of the manual

11. Hazardous Locations

Metal Beam Crash Barrier:
Metal Beam Crash Barrier need to be provided as per site requirement with a minimum length of 21760m

Note: The length of crash barrier is indicative. In case any additional length is identified during construction period, the same shall be improved as per manual and will not qualify for Change of Scope

12. Special Requirement for Hill Roads

Breast Wall:
Breast need to be provided at hill side with a minimum length of 2250m

Lined Drain:
Trapezoidal Lined drain needs to be provided at hill side with a minimum length of 5050m

Note: The lengths of these protection works are indicative. In case any additional length is identified during construction period, the same shall be improved as per manual and will not qualify for Change of Scope

13. Special Requirement for High Embankment Zone

Toe Wall:
Toe wall need to be provided at high embankment location with a minimum length of 3150m

Note: The lengths of these protection works are indicative. In case any additional length is identified during construction period, the same shall be improved as per manual and will not qualify for Change of Scope

14. 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 B-1)

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

Sr. No	Type of Utility	Unit	Quantity
A			
A1	Electric Post (LT)	Nos.	252
A2	Lamp Post	Nos.	
A3	11 KV Post	Nos.	
A4	33 KV Post	Nos.	
A5	Transformers	Nos.	4
B			
B1	Water Pipe Line	meters	0
B2	Hand Pump	Nos.	0
C	***Felling of Tress***	***Nos.***	***1500***

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

Schedule - C

(See Clause 2.1)

Project Facilities

1. Project Facilities

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

(a) Toll plaza;

(b) Road side furniture;

(c) Street lighting;

(d) Pedestrian facilities;

(e) Tree plantation;

(f) Truck lay-byes;

(g) bus-bays and bus shelters;

(h) rest areas; and

(i) others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

(a) Toll Plaza

Toll plaza shall be designed as per the guidelines of the manual and it is provided at following locations: -

Sl. No.	Location(Design km)
NIL	

(b) Road side Furniture

The roadside furniture shall include the provision of the;

i. Traffic Signs

Traffic signs include roadside signs, overhead signs, curb mounted signs etc provided for the entire Project Highway as per Manual.

ii. Pavement Markings

Pavement markings shall cover road marking provided for the entire Project Highway as per Manual.

iii. LED Traffic Blinkers

LED Traffic Blinker signal provided for entire project as per Manual.

iv. Delineators

Delineators for the entire Project Highway at the locations as suggested in IRC Manual.

v. Boundary stones

For the entire Project Highway as suggested in relevant IRC Manual.

vi. Hectometer / Kilometer stones

For the entire Project Highway as suggested in relevant IRC Manual.

(c) Street Lighting

Lighting shall be provided at the following locations:

i. Lighting shall be provided at built up areas, bus stops, and as per manual recommended in Schedule D.

ii. High Mast Lighting shall be provided at Major Junction,

(d) Pedestrian facilities;

Pedestrian facilities shall be provided at the locations of urban sections in order to ensure safety of pedestrians while crossing in consultation with NHIDCL and as per manual

(e) Tree plantation;

Landscaping and Tree plantation shall be provided. The location for these provisions shall be finalized in consultation with Independent Engineer

(f) Truck lay-byes;

Truck lay bays shall be provided at locations given below:

Sl no.	Design Chainage(km)	Side
1	97+000	LHS
2	97+100	RHS

(g) bus-bays and bus shelters;

Bus bays shall be provided at locations given below:

Sl. No.	Design Chainages (km)	Side
1	98+100	Both
2	102+600	Both
3	104+550	Both
4	112+900	Both

(h) Rest Areas

NIL

Schedule - D

(See Clause 2.1)

Specifications and Standards

1. Construction

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

2. Design Standards

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

Manual of Specifications and Standards for Four Laning of Highways (IRC: SP: 84 2019), referred to herein as the Manual

Annex – I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

All Materials, works and construction operations shall conform to the Manual of Specifications and Standards for Four-Laning of Highways (IRC: SP:84-2019), referred to as the Manual, and MORTH Specifications for Road and Bridge Works. Where the specification for a work is not given, Good Industry Practice shall be adopted to the satisfaction of the Authority's Engineer.

2. Deviations from the Specifications and Standards

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

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

Sl.No.	Clause Referred in Manual	Item	Provision as per Manual	Modified provision	Remarks
1	2.5	Median	Table 2.2 of IRC: SP:84-2019	Width of median in rural area is 1.5 m (Excluding 0.5 m kerb shyness on either side)	
2	2.2	Design Speed	Table 2.1 of IRC: SP:84-2019	Design speed is restricted at stretches mentioned in Table D1.	

Table D1 : Speed Restricted Stretches

Sl. No.	Curve Details				Transition Details				Speed (Kmph)
	Start Chainage	End Chainage	Radius (m)	Direction	Start Chainage	L1	L2	End Chainage	
1	96+210.856	96+287.065	260	Right	96+125.856	85	85	96+372.065	80
2	97+854.411	98+025.920	260	Left	97+769.411	85	85	98+110.920	80
3	98+219.087	98+370.426	350	Left	98+144.087	75	75	98+445.426	80
4	99+019.716	99+077.045	170	Right	98+944.716	75	75	99+152.045	65
5	99+241.372	99+255.786	300	Left	99+166.372	75	75	99+330.786	80
6	99+464.585	99+495.782	300	Right	99+389.585	75	75	99+570.782	80
7	99+662.186	99+681.991	300	Left	99+587.186	75	75	99+756.991	80

Sl. No.	Curve Details				Transition Details				Speed (Kmph)
	Start Chainage	End Chainage	Radius (m)	Direction	Start Chainage	L1	L2	End Chainage	
8	99+835.847	99+977.435	300	Right	99+760.847	75	75	100+052.435	80
9	100+263.172	100+299.348	170	Right	100+188.172	75	75	100+374.348	65
10	100+460.224	100+499.761	170	Left	100+385.224	75	75	100+574.761	65
11	100+689.708	100+779.206	400	Right	100+634.708	55	55	100+834.206	80
12	100+914.357	101+022.825	150	Left	100+839.357	75	75	101+097.825	60
13	101+509.058	101+556.229	300	Right	101+434.058	75	75	101+631.229	65
14	101+705.530	101+729.304	450	Left	101+650.530	55	55	101+784.304	80
15	101+884.102	101+909.870	238	Right	101+809.102	75	75	101+984.870	65
16	102+048.369	102+069.835	400	Left	101+993.369	55	55	102+124.835	80
17	102+324.498	102+421.976	400	Right	102+249.498	75	75	102+496.976	80
18	102+809.958	102+884.385	175	Right	102+734.958	75	75	102+959.385	65
19	103+052.150	103+125.339	170	Left	102+977.150	75	75	103+200.339	65
20	103+300.854	103+403.309	600	Right	103+250.854	50	50	103+453.309	65
21	103+517.169	103+647.461	500	Left	103+467.169	50	50	103+697.461	80
22	103+778.505	103+865.636	170	Right	103+703.505	75	75	103+940.636	65
23	104+042.345	104+362.562	340	Left	103+967.345	75	75	104+437.562	80
24	104+714.401	104+734.378	170	Left	104+659.401	55	55	104+789.378	65
25	111+208.843	111+327.219	400	Right	111+153.843	60	60	111+382.219	80
26	111+465.545	111+480.552	200	Left	111+405.545	55	55	111+540.552	65
27	111+603.514	111+720.975	200	Right	111+543.514	60	60	111+780.975	65
28	111+880.015	111+922.196	200	Right					65
29	112+012.572	112+465.875	205	Left	111+952.572	60	60	112+525.875	65
30	112+610.053	112+752.868	170	Right	112+540.053	60	60	112+822.868	65
31	113+016.059	113+162.346	400	Right	112+961.059	70	70	113+217.346	80
32	113+461.920	113+483.979	300	Left	113+386.920	55	55	113+558.979	65
33	113+616.569	113+652.054	400	Right	113+561.569	75	75	113+707.054	80

SCHEDULE - H

See Clauses10.1 (iv) and 19.3

Contract Price Weightages

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

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

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
Road works including culverts, widening and repair of culverts.	62.67%	**A- Widening and strengthening of existing road**	
		(1) Earthwork up to top of sub-grade	4.23%
		(2) Sub Base Course	11.25%
		(3) Non-Bituminous Base Course	10.70%
		(4) Bituminous Base Course	25.36%
		(5) Wearing Coat	10.78%
		(6) Widening and repair of culvert	0.00%
		B.1- Reconstruction / New 2-Lane realignment/ bypass (Flexible Pavement)	
		(1) Earthwork up to top of sub-grade	6.50%
		(2) Sub Base Course	8.19%
		(3) Non-Bituminous Base Course	10.07%
		(4) Bituminous Base Course	7.58%
		(5) Wearing Coat	3.22%
		B.2- Reconstruction / New 2-Lane realignment/ bypass (Rigid Pavement)	0.00%
		(1) Earthwork up to top of sub-grade	0.00%
		(2) Sub Base Course	0.00%
		(3) Dry Lean Concrete (DLC) Course	0.00%
		(4) Pavement Quality Control (PQC) Course	0.00%
		C.1- Reconstruction / New Service road (Flexible Pavement)	0.00%
		(1) Earthwork up to top of sub-grade	0.00%
		(2) Sub Base Course	0.00%
		(3) Non-Bituminous Base Course	0.00%
		(4) Bituminous Base Course	0.00%
		(5) Wearing Coat	0.00%

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
		C.2- Reconstruction / New Service road (Rigid Pavement)	0.00%
		(1) Earthwork up to top of sub-grade	0.00%
		(2) Sub Base Course	0.00%
		(3) Dry Lean Concrete (DLC) Course	0.00%
		(4) Pavement Quality Control (PQC) Course	0.00%
		D- Re-Construction and New culverts on existing road, realignments, bypasses:	0.00%
		Culverts (Length <6 m)	2.12%
Minor Bridges / Underpasses / Overpasses	11.33%	**A.1- Widening and repairs of Minor Bridges (length>6m and <60m)**	
		Minor Bridges	71.53%
		A.2- New Minor Bridges (length>6m and <60m)	0.00%
		(1) **Foundation**	16.98%
		(2) Sub-Structure:	5.85%
		(3) **Super-Structure:** On completion of the super structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road sign & markings tests on completion etc. complete in all respect.	4.72%
		(4) **Approaches:** On completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	0.49%
		(5) Guide Bunds and River Training works:	
		On completion of Guide Bunds and river Training works complete in all respects	0.43%
		B.1- Widening and Repair of underpasses/overpasses	
		Underpasses/ Overpasses	0.00%
		B.2- New underpasses/ overpasses	
		(1) Foundation +Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers upto the abutment/pier cap.	0.00%

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
		(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & makings, tests on completion etc. complete in all respect.	0.00%
		Wearing Coat (a) in case of Overpass- wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass- rigid pavement including drainage facility complete in all respects as specified as specified.	0.00%
		(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%
			0.00%
Major Bridges (Length >60m) works and ROB/RUB/elevated section/flyover including viaducts if any.	0.00%	**A.1 - Widening and repairs of Major Bridges**	
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Guide Bunds, River Training works etc.	0.00%
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
		A.2- New Major Bridges	0.00%
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
		(4) Wearing Coat including expansion joints	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Guide Bunds, River Training works etc.	0.00%
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
		B.1- Widening and Repair of underpasses/overpasses	0.00%
		(a) ROB	0.00%
		(b) RUB	0.00%
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%
		(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.	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
		B.2- New ROB/RUB	0.00%
		(a) ROB	0.00%
		(b) RUB	0.00%
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
		(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.	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Approaches (including Retaining walls, stone pitching and protection works)	0.00%
		C.1- Widening and repair of Elevated Section/Flyovers/Grade Separators	0.00%
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%
		(4) Wearing Coat including expansion joints.	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	0.00%
		C.2- New Elevated Section/Flyovers/Grade Separators	0.00%
		(1) Foundation	0.00%
		(2) Sub-structure	0.00%
		(3) Super-structure (including bearings)	0.00%
		(4) Wearing Coat including expansion joints.	0.00%
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.00%
		(6) Wing walls/return walls	0.00%
		(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	0.00%
Other works	26.00%	(i) Toll Plaza	0.00%

Item	Weightage in percentage to the Contract Price	Stage of Payment	Percentage Weightage
1	2	3	4
		(ii) Road side drains	17.40%
		(iii) Road signs, markings, km stones, safety devices, ….	35.65%
		(iv) Project facilities	0.00%
		(a) Bus Bays & Bus Shelter	2.35%
		(b) Truck lay-byes	1.21%
		(c) Rest areas	0.00%
		(d) Electrical Works	0.55%
		(e) Junctions	7.48%
		(f) others	0.00%
		(v) Road side plantation	3.97%
		(vi) Protection works other than elevated sections/ flyovers/grade separators and ROBs/RUBs.	30.73%
		(vii) Safety and traffic management during construction	0.00%
		(vii) Maintenance of Existing road	0.00%
		(ix) Median & Island Filling	0.66%

1.3 Procedure of estimating the value of work done

1.3.1 Road works.

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

Table 1.3.1

Stage of Payment	Percentage - weightage	Payment Procedure
A-Widening and Strengthening of existing road		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 1.00 km (One Kilometre) in 2 lane carriageway
(1) Earthwork up to top of the sub-grade	4.23%	
(2) Sub-Base Course	11.25%	
(3) Non-Bituminous Base Course	10.70%	
(4) Bituminous Base Course	25.36%	
(5) Wearing Coat	10.78%	
(6) Widening and repair of culverts	0.00%	Cost of completed culverts shall be determined pro rata with respect to the total number of culverts. Payment shall be made on the completion of at least 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 500 metre for 2 Lane carriageway.
(1) Earthwork up to top of the sub-grade	6.50%	
(2) Sub-Base Course	8.19%	
(3) Non-Bituminous Base Course	10.07%	
(4) Bituminous Base Course	7.58%	
(5) Wearing Coat	3.22%	
B.2- Reconstruction / New 2-Lane realignment/ bypass (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km. length whichever is less.
(1) Earthwork up to top of sub-grade	0.00%	
(2) Sub Base Course	0.00%	
(3) Dry Lean Concrete (DLC) Course	0.00%	
(4) Pavement Quality Control (PQC) Course	0.00%	
C.1- Reconstruction / New Service road (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km. length whichever is less.
(1) Earthwork up to top of sub-grade	0.00%	
(2) Sub Base Course	0.00%	
(3) Non-Bituminous Base Course	0.00%	
(4) Bituminous Base Course	0.00%	
(5) Wearing Coat	0.00%	
C.2- Reconstruction / New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in
(1)) Earthwork up to top of sub-grade	0.00%	

Stage of Payment	Percentage - weightage	Payment Procedure
(2) Sub Base Course	0.00%	full length or 5(five) km. length whichever is less.
(3) Dry Lean Concrete (DLC) Course	0.00%	
(4) Pavement Quality Control (PQC) Course	0.00%	
D- Re-Construction and New culverts on existing road, realignments, bypass:		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 at least five culvert for 2 lane carriageway
(1) Culverts (Length <6 m)	2.12%	

@. 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 asfollows:

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

Where P= Contract Price

L = Total length in km

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

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

1.3.2 Minor Bridges and Underpasses/Overpasses.

Procedure for estimating the value of Minor bridge and Underpasses/ Overpasses shall be as stated in table1.3.2:

Table 1.3.2

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repair of minor bridges (length > 6m and <60m)	71.53%	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.
A.2- New minor bridges		
(i) Foundation	16.98%	Cost of each minor bridge shall be determined on pro rata basis with respect to 25% each after completion of foundation and substructure, 30% after completion of super-Structure & 20% after completion of protection work
(ii) Sub-structure	5.85%	
(iii) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.	4.72%	
(iv) Approaches: On completion of approaches including Retaining walls, stone pitching, protection works complete in all respect and fit for use.	0.49%	
(v) Guide Bunds and River Training Works: On completion of Guide Bunds and river Training Works complete in all respects	0.43%	
B.1- Widening and repair of underpasses/overpasses	0.00%	Cost of each underpass/overpass shall be determined on pro rata basis with respect to the total linear length of the underpasses/overpasses. Payment shall be made on the completion of widening & repair works of a underpass/overpass.
B.2- New Underpasses/Overpasses:	0.00%	

Stage of Payment	Weightage	Payment Procedure
(i) Foundation +Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap**.**	0.00%	**(i) foundation +Sub-Structure:** cost of each Underpass/Overpass shall be determined on pro rata basis with respect to the total linear length (m) of the Underpasses/Overpasses. Payment against foundation + sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation +sub-structure of each Underpasses/Overpasses subject to completion of at least two foundations along with sub-structure up to abutment/pier cap each underpass/overpass. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(ii) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing coat (a)in case of Overpass- wearing coat including expansion joints complete in all respects as specified and **(b** in case of underpass- rigid pavement including drainage facility complete in all respects as specified.	0.00%	**(ii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(iii) Approaches: On completion of approaches including Retaining walls/Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	0.00%	**(iii) Approaches:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of approaches in all respect as specified.

1.3.3 Major Bridge works ROB/RUB and Structures.

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

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repairs of Major Bridges		
(i) Foundation	0.00%	**(i) Foundation:** Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 major bridge subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	**(iv) Wearing Coat:** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Guide Bunds, River Training works etc.	0.00%	**(vii) Guide Bunds, River Training works:** Payment shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(viii) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	**(viii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
A.2- New Major Bridges		
(i) Foundation	0.00%	**(i) Foundation:** Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 major bridge subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	**(iv) Wearing Coat:** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Guide Bunds, River Training works etc.	0.00%	**(vii) Guide Bunds, River Training works:** Payment shall be made on completion of all guide bunds/river training works etc. complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(viii) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	**(viii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
B.1 - Widening and repairs of		
(a) ROB		
(b) RUB		
(i) Foundation	0.00%	**(i) Foundation:** Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROBs/RUBs. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the ROB/RUB.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints in case of ROB. In casea of RUB, rigid pavement under RUB including drainage facility as specified.	0.00%	**(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 as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. Complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(vii) Approaches (including Retaining walls, stone pitching and protection works)	0.00%	**(vii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
B.2 - New	0.00%	
(a) ROB	0.00%	
(b) RUB	0.00%	
(i) Foundation	0.00%	**(i) Foundation:** Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROBs/RUBs. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the ROB/RUB.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints in case of ROB. In casea of RUB, rigid pavement under RUB including drainage facility as specified.	0.00%	**(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 as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	0.00%	**(vii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
C.1- Widening and repairs of Elevated Section/Flyovers/ Grade Separators	0.00%	
(i) Foundation	0.00%	**(i) Foundation:** Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 major bridge subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	**(iv) Wearing Coat:** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. Complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	0.00%	**(vii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.

Stage of Payment	Weightage	Payment Procedure
C.2- New Elevated Section/Flyovers/ Grade Separators	0.00%	
(i) Foundation	0.00%	**(i) Foundation:** Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the Major Bridge. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the major Bridge subject to completion of at least two foundations 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.
(ii) Sub-structure	0.00%	**(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 major bridge subject to completion of at least two sub-structures of abutments/piers up to abutment/pier cap level of the major bridge.
(iii) Super-structure (including bearings)	0.00%	**(iii) Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structures including bearings of at least one span in all respects as specified.
(iv) Wearing Coat including expansion joints	0.00%	**(iv) Wearing Coat:** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(v) Miscellaneous Items like hand rails, crash barriers, road markings etc.	0.00%	**(v) Miscellaneous:** Payment shall be made on completion of all miscellaneous works like hand rails, crash barriers, road markings etc. complete in all respects as specified.
(vi) Wing walls/return walls	0.00%	**(vi) Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(vii) Approaches (including Retaining walls/Reinforced Earth wall, stone pitching and protection works)	0.00%	**(vii) Approaches:** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects 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 Competent Authority.

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

1.3.4 Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
(i) Toll Plaza	0.00%	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	17.40%	Unit of measurement is linear length in km. Cost per km shall be determined on pro rata basis with respect to the total length of service drain. Payment shall be made for completed side drain in a length of not less than 1.00 Km (One Kilometre) of the total length of service roads for 2 lane carriageway.
(iii) Road signs, Markings, KM stones, Safety devices, …	35.65%	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.
(iv) Project facilities	0.00%	Payment shall be made on pro rata basis for completed facilities.
a) Bus bays	2.35%	
b) Truck lay-byes	1.21%	
c) Rest areas	0.00%	
d) Electrical Works	0.55%	
e) Junctions	7.48%	
f) others	0.00%	
(v) Roadside plantation	3.97%	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.
(vi) Repair of protection works other than elevated sections/flyovers/grade separators and ROBs/RUBs	30.73%	
(vii) Safety and traffic management during construction	0.00%	Payment shall be made on prorata basis every six months.
(viii) Median & island Filling	0.66%	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.
(ix) Maintenance of Existing road	0.00%	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.