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 of NH-29 (Old NH-36) commencing from design ch.km 113+830 (existing Ch. km 113+300 of NH 29) to km 131+152 (existing Ch. km 131+500 of NH 29) i.e. Daboka - Manja section in the State of Assam. 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.	Design Ch.(km)	Existing KM Stone (NH-29)
1	115+360	115
2	116+310	116
3	NA	117
4		118
5		119
6	120+700	120
7	NA	121
8		122
9		123
10		124
11	124+610	125
12	Bypass	126
13		127
14		128
15		129
16		130
17	130+660	131

2. Land

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

Design Chainage	EROW (m) with respect to existing CL
113+830 to 125+340	20 - 30 m
130+630 to 131+152	20 -30 m

3. Carriageway

The present carriageway of the Project Highway is double Lane with paved shoulder. Average width of the carriageway is 9.0 m to 10.0 m. The type of the existing pavement is flexible.

4. Major Bridges

The Site includes the following Major Bridges:

SL NO.	Existing Chainage	No. of Spans	Span Arrangement (m)	Clear Span (m)	Length of Bridge (m)	Clear Roadway Width (m) between kerbs	Total Width (m)	Width of Footpath (m)	Super structure Type
1	119+400	4	1x21.6+1x21.5+1x21.5+1x21.6	-	86.2	7.50	11.70	NA	RCC T Girder
2	127+700	3	3x22.4	22.0	67.2	9.20	10.20	NA	RCC T Girder

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 Chainage (km)	No. of Spans	Span Arrangement (m)	Clear Span (m)	Length of Bridge (m)	Clear Roadway Width (m) between kerbs	Total Width (m)	Width of Footpath (m)	Super structure Type
1	116+400	1	1x10.6	10	10.6	7.50	8.10	NA	Solid Slab
2	118+700	1	1x15.1	14.4	15.1	7.50	10.80	NA	RCC T Girder
3	119+900	2	2x10.5	9.5	21.0	7.80	11.70	NA	Solid Slab
4	121+500	2	2x8.9	8.5	17.8	7.50	8.30	NA	Solid Slab
5	129+100	1	1x22.4	21.0	22.4	7.60	8.20	NA	RCC T Girder

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.	Existing Chainage (km)	Type of Culvert	Span Arrangement/Dia. (m)	Total Width of Structure (m)	Total Roadway Width (m)	Remarks
1	113+500	Pipe Culvert	1x1.2	13.200	12.100	Ext. Retain
2	113+600	HP Culvert	1x0.6	17.566	9.923	Reconstruction
3	114+500	HP Culvert	1x1.2	13.200	12.100	Ext. Retain
4	115+660	Pipe Culvert	1x0.6	17.98	12.54	Reconstruction
5	115+770	Pipe Culvert	1x0.6	17.64	11	Reconstruction

Sl. No.	Existing Chainage (km)	Type of Culvert	Span Arrangement/Dia. (m)	Total Width of Structure (m)	Total Roadway Width (m)	Remarks
6	116+020	Pipe Culvert	1x0.6	17.6	11.2	Reconstruction
7	116+500	HP Culvert	1x1.2	22.82		Ext. Retain
8	116+650					Chocked
9	116+900					Chocked
10	117+120					Chocked
11	117+500					Chocked
12	118+200					Chocked
13	118+450					Chocked
14	118+800	HP Culvert				chocked
15	119+000					Chocked
16	119+320					Chocked
17	119+730					Chocked
18	121+300	HP Culvert				Chocked
19	121+800	HP Culvert	1x1.2	17.64	11	Ext. Retain
20	122+700					Chocked
21	123+500	HP Culvert				Chocked
22	124+300	HP Culvert				Chocked
23	124+400	HP Culvert				Chocked
24	124+800	HP Culvert				Chocked
25	127+500	HP Culvert	1x1.2	17.776	10.932	Ext. Retain
26	127+750	HP Culvert	1x1.2	17.725	11.703	Ext. Retain
27	128+120	HP Culvert	1x1.2	24.864	9.469	Ext. Retain

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	Category	Surfacing Type	Carriageway Width (m)
1	128+350	NH-29	RHS	To Diphu	SH-36A	Bituminous	7.0

(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 Chainage (km)	Road Segment	Side	Destination	Category	Surfacing Type	Carriageway Width (m)
1	113+570	NH-29	RHS	To Village		Bituminous	3.5
2	117+500	NH-29	LHS	To Village		Bituminous	3.5
3	119+590	NH-29	LHS	To Siloni		Bituminous	3.5
4	121+110	NH-29	LHS	To Village		Bituminous	3.5
5	121+360	NH-29	LHS	To Longnit Borjan		Bituminous	3.5
6	127+300	NH-29	LHS	To Village	P.M.G.S.Y	Bituminous	3.5

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)	113+830	131+152	17+322	42	At appointed date
(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] 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	Location (km to km)	Width (m)	Typical cross section
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 minimum design speed of 80 km per hour for this project except the following location:

Sl. No.	HIP chainage (km)	Speed(kmph)
1	114+070	65
2	115+211	65
3	117+048	65
4	117+281	65
5	117+514	65
6	117+782	65
7	118+281	65
8	119+807	65
9	120+006	65
10	120+263	65
11	120+438	65
12	120+642	65
13	120+839	65
14	121+061	65
15	121+319	65
16	121+756	65
17	122+873	65
18	123+632	65

(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 Proposed Realignments:

Sl. No.	Design Ch.(km)		Length (m)	Remarks
	From	To		
1	125+340	130+630	5290	Manja Bypass

Details of Proposed Bypasses:

Sl. No.	Design Ch.(km)		Length (m)	Remarks
	From	To		
1	114+470	114+590	120	realignment
2	114+700	114+890	190	realignment
3	114+940	115+170	230	realignment
4	115+850	115+980	130	realignment
5	116+180	116+500	320	realignment

Sl. No.	Design Ch.(km)		Length (m)	Remarks
	From	To		
6	117+120	117+260	140	realignment
7	117+570	117+710	140	realignment
8	117+810	118+150	340	realignment
9	118+250	118+420	170	realignment
10	118+830	119+840	1010	realignment
11	120+750	121+100	350	realignment
12	121+330	121+470	140	realignment
13	123+150	123+650	500	realignment
14	130+840	130+990	150	realignment

(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 width paved shoulder on either side and 1.5m width Earthen shoulder has been proposed in TCS-1, 2, 1A

(c) 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/slip Road (km)		Right Hand Side (RHS) / Left Hand Side (LHS) / Both Sides	Length (km) of Service/slip Road	Remarks
	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.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
1	113+830	114+020	190	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
2	114+020	114+470	450	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
3	114+470	114+590	120	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
4	114+590	114+640	50	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
5	114+640	114+700	60	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
6	114+700	114+890	190	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
7	114+890	114+940	50	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
8	114+940	115+170	230	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
9	115+170	115+300	130	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
10	115+300	115+360	60	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
11	115+360	115+520	160	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
12	115+520	115+590	70	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
13	115+590	115+750	160	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
14	115+750	115+850	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)

Sl. No.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
15	115+850	115+980	130	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
16	115+980	116+110	130	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
17	116+110	116+180	70	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
18	116+180	116+500	320	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
19	116+500	116+635	134.7	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
20	116+635	116+645	10.6	STR	MNB
21	116+645	117+050	404.7	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
22	117+050	117+120	70	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
23	117+120	117+163	42.5	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
24	117+163	117+178	15.1	STR	MNB
25	117+178	117+260	82.4	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
26	117+260	117+410	150	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
27	117+410	117+470	60	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
28	117+470	117+540	70	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
29	117+540	117+570	30	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
30	117+570	117+710	140	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment

Sl. No.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
31	117+710	117+810	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
32	117+810	118+150	340	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
33	118+150	118+250	100	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
34	118+250	118+420	170	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
35	118+420	118+460	40	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
36	118+460	118+550	90	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
37	118+550	118+610	60	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
38	118+610	118+710	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
39	118+710	118+830	120	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
40	118+830	119+490	660	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
41	119+490	119+580	90	STR	MJB
42	119+580	119+840	260	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
43	119+840	120+200	360	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
44	120+200	120+310	110	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
45	120+310	120+420	110	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)

Sl. No.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
46	120+420	120+590	170	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
47	120+590	120+750	160	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
48	120+750	121+100	350	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
49	121+100	121+191	91.1	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
50	121+191	121+209	17.8	STR	MNB
51	121+209	121+330	121.1	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
52	121+330	121+470	140	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
53	121+470	121+690	220	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
54	121+690	121+730	40	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
55	121+730	121+830	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
56	121+830	122+030	200	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
57	122+030	122+210	180	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
58	122+210	122+350	140	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
59	122+350	122+390	40	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
60	122+390	122+490	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)

Sl. No.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
61	122+490	122+830	340	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
62	122+830	122+900	70	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
63	122+900	123+150	250	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
64	123+150	123+650	500	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
65	123+650	124+210	560	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
66	124+210	124+480	270	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
67	124+480	124+625	145	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
68	124+625	124+780	155	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
69	124+780	124+970	190	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
70	124+970	125+340	370	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
71	125+340	126+866	1526.3	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
72	126+866	126+874	7.5	STR	MNB
73	126+874	128+293	1418.7	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
74	128+293	128+308	15	STR	MNB
75	128+308	128+704	396.5	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
76	128+704	128+716	12	STR	MNB
77	128+716	129+872	1156	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment

Sl. No.	Design Ch.(km)		Length(m)	TCS No.	Description
	From	To			
78	129+872	129+938	66	STR	MJB
79	129+938	130+630	692	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
80	130+630	130+840	210	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
81	130+840	130+990	150	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
82	130+990	131+152	162	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)

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:

Major Intersections:

Sl No.	Design Chainage (Km)	Road Segment	Type of Intersection	Type	Side	Improvement Proposals	Remarks
1	125+500	Daboka - Lahorijan (NH 29)	Major	3 - legged	Right	At-grade Intersection	Start of Manja Bypass
2	130+500		Major	3 - legged	Right	At-grade Intersection	End of Manja Bypass

Minor Intersections:

Sl. No.	Design Chainage (m)	Type of Intersection	Type	Side	Improvement Proposals
1	114+000	Minor	3 legged	Right	At Grade
2	114+530	Minor	3 legged	Right	At Grade
3	115+100	Minor	3 legged	Left	At Grade
4	116+500	Minor	3 legged	Left	At Grade
5	116+950	Minor	3 legged	Right	At Grade
6	117+420	Minor	3 legged	Left	At Grade
7	118+200	Minor	3 legged	Left	At Grade
8	119+860	Minor	3 legged	Left	At Grade
9	120+660	Minor	3 legged	Left	At Grade
10	121+300	Minor	3 legged	Right	At Grade
11	121+950	Minor	3 legged	Both	At Grade
12	123+800	Minor	3 legged	Left	At Grade
13	124+000	Minor	3 legged	Right	At Grade
14	124+600	Minor	3 legged	Left	At Grade
15	125+890	Minor	3 legged	Both	At Grade
16	126+850	Minor	3 legged	Both	At Grade
17	129+190	Minor	3 legged	Both	At Grade

(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 be corrected.

(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 20 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.

(iv) Reconstruction of stretches

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

Sl. No.	Stretch From km to km	Remarks
NIL		

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.

RCC covered drain should be provided in following locations.

Sl no.	Design chainage (km)		Length (km)	Side (LHS/RHS/Both Side)
	From	To		
NIL				

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 specified therein.

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

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	Remarks
1	117+170	1x15.1	MNB	15.1	2x13.5	RCC T-Girder	New 4 lane	Realignment
2	119+535	3x30	MJB	90.0	2x13.5	PSC I-Girder	New 4 lane	New Construction (Realignment)
3	126+870	1x7.5	MNB	7.5	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
4	128+300	2x7.5	MNB	15.0	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
5	128+710	2x6.0	MNB	12.0	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
6	129+905	3x22.0	MJB	66.0	2x13.5	RCC T Girder	New 4 lane	New Construction (Manja Bypass)

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 No.	Design Chainage (km)	Remarks
1	116+640	-
2	117+170	-
3	119+535	-
4	121+200	-
5	126+870	-
6	128+300	-
7	128+710	-
8	129+905	-

(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)	Proposed Type of Culvert	Proposed Span Arrangement (m)	Improvement Proposal	Remarks
1	114+090	HP Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
2	115+980	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
3	116+090	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
4	116+340	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane	Reconstruction
5	116+920			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
6	117+350			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
7	117+530			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
8	117+780			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
9	118+350			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
10	118+470			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
11	118+850	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction
12	120+000			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
13	120+250			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
14	120+630			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
15	120+900	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction
16	122+340			Pipe Culvert	1x1.2	New 4Lane	Reconstruction
17	123+060	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction
18	123+820	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction
19	124+220	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction
20	124+330	HP Culvert		Pipe Culvert	1x1.2	New 4Lane	Reconstruction

(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 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 Existing Culvert	Existing Span Arrangement/Dia. (m)	Proposed Type of Culvert	Proposed Span Arrangement (m)	Improvement Proposal	Remarks
1	113+935	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
2	114+820	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
3	116+770	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
4	121+520	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
5	124+740	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
6	124+980	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain
7	125+260	HP Culvert	1x1.2	Pipe Culvert	1x1.2	New 2Lane	Ext. Retain

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

Sl. No.	Design Chainage (km)	Proposed Type of Culvert	Proposed Span Arrangement (m)	Improvement Proposal	Remarks
1	114+570	Pipe Culvert	1x1.2	New 4Lane	New Construction
2	117+660	Pipe Culvert	1x1.2	New 4Lane	New Construction
3	118+060	Pipe Culvert	1x1.2	New 4Lane	New Construction
4	118+390	Pipe Culvert	1x1.2	New 4Lane	New Construction
5	118+670	Pipe Culvert	1x1.2	New 4Lane	New Construction
6	120+510	Pipe Culvert	1x1.2	New 4Lane	New Construction
7	121+330	Pipe Culvert	1x1.2	New 4Lane	New Construction
8	123+300	Pipe Culvert	1x1.2	New 4Lane	New Construction
9	123+540	Pipe Culvert	1x1.2	New 4Lane	New Construction
10	125+960	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
11	126+220	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
12	126+570	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
13	126+760	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
14	127+080	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
15	127+280	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
16	127+580	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
17	127+940	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
18	128+210	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
19	128+550	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
20	128+940	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
21	129+290	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
22	129+600	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
23	129+850	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
24	130+220	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
25	130+480	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
26	130+620	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass

Sl. No.	Design Chainage (km)	Proposed Type of Culvert	Proposed Span Arrangement (m)	Improvement Proposal	Remarks
27	130+850	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass
28	130+950	Pipe Culvert	1x1.2	New 4Lane	Manja Bypass

(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.	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.	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	Remarks
1	116+640	1x10.6	MNB	10.6	Widening + 13.5	RCC Box	New 2 lane	Widening
2	121+200	2x8.9	MNB	17.8	Widening + 13.5	RCC Box	New 2 lane	Widening

(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 is 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	Remarks
1	117+170	1x15.1	MNB	15.1	2x13.5	RCC T-Girder	New 4 lane	Realignment
2	119+535	3x30	MJB	90.0	2x13.5	PSC I-Girder	New 4 lane	New Construction (Realignment)
3	126+870	1x7.5	MNB	7.5	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
4	128+300	2x7.5	MNB	15.0	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
5	128+710	2x6.0	MNB	12.0	2x13.5	RCC Box	New 4 lane	New Construction (Manja Bypass)
6	129+905	3x22.0	MJB	66.0	2x13.5	RCC T Girder	New 4 lane	New Construction (Manja Bypass)

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

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

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

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

(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
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.	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	Remarks
1	119+535	3x30	MJB	90.0	2x13.5	PSC I-Girder	New 4 lane	New Construction (Realignment)
2	129+905	3x22.0	MJB	66.0	2x13.5	RCC T Girder	New 4 lane	New Construction (Manja Bypass)

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. Roadside Furniture

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

(ii) Overhead traffic signs:

Minimum 1 no. overhead traffic signs (Full width) 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

NIL.

12. Special Requirement for Hill Roads

NIL

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 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	33 KV (HT) Line	Meter	8000
A2	LT Line	Meter	17000
A3	11 KV Line	Meter	15000
A4	Transformers	Nos.	4
B			
B1	Water Pipe Line	meters	10000
B2	Hand Pump	Nos.	5
C	***Felling of Tress***	***Nos.***	***2400***

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) roadside 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	114+400	RHS
2	114+500	LHS

(g) bus-bays and bus shelters;

Bus bays shall be provided at locations given below:

Sl. no.	Design Ch. (km)	Side
1	115+000	BOTH
2	118+050	BOTH
3	120+130	LHS
4	120+360	RHS
5	123+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)	

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 for Payment	Percentage weightage
1	**2**	**3**	**4**
Road works including culverts, widening and repair of culverts	59.13	**A- Widening and strengthening of existing road**	
		(1) Earthwork up to top of sub-grade	6.83
		(2) Sub Base Course	7.30
		(3) Non Bituminous Base Course	7.88
		(4) Bituminous Base Course	15.54
		(5) Wearing Coat	6.33
		(6) Widening and repair of culvert	NIL
		B.1- Reconstruction / New 2-Lane realignment/ bypass (Flexible Pavement)	
		(1)) Earthwork up to top of sub-grade	9.83
		(2) Sub Base Course	10.16
		(3) Non-Bituminous Base Course	10.47
		(4) Bituminous Base Course	17.01
		(5) Wearing Coat	6.68
		B.2- Reconstruction / New 2-Lane realignment/ bypass (Rigid Pavement)	
		(1) Earthwork up to top of sub-grade	NIL
		(2) Sub Base Course	NIL
		(3) Dry Lean Concrete (DLC) Course	NIL
		(4) Pavement Quality Control (PQC) Course	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		C.1- Reconstruction / New Service road (Flexible Pavement)	
		(1)) Earthwork up to top of sub-grade	NIL
		(2) Sub Base Course	NIL
		(3) Non-Bituminous Base Course	NIL
		(4) Bituminous Base Course	NIL
		(5) Wearing Coat	NIL
		C.2- Reconstruction / New Service road (Rigid Pavement)	
		(1)) Earthwork up to top of sub-grade	NIL
		(2) Sub Base Course	NIL
		(3) Dry Lean Concrete (DLC) Course	NIL
		(4) Pavement Quality Control (PQC) Course	NIL
		D- Re-Construction and New culverts on existing road, realignments, bypasses:	
		Culverts (Length <6 m)	1.98
Minor Bridges/ Underpasses/ Overpasses	7.44	**A.1- Widening and repairs of Minor Bridges (length>6m and <60m)**	
		Minor Bridges	26.33
		A.2- New Minor Bridges (length>6m and <60m)	
		(1) **Foundation:** On completion of the foundation work including foundation for wing and return walls, abutments, piers	19.91
		(2) **Sub-Structure:** On completion of the substructure work for wing and return walls, abutments, piers upto the abutment/pier cap.	24.84
		(3) **Super-Structure:** On completion of the super structure in all respects	19.62

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		including wearing coat, bearings, expansion joints, hand rails, crash barriers, road sign & markings tests on completion etc. complete in all respect.	
		(3) **Approaches:** On completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	2.80
		(4) **Guide Bunds and River Training works:** On completion of Guide Bunds and river Training works complete in all respects	6.49
		B.1- Widening and Repair of underpasses/overpasses	
		Underpasses/ Overpasses	NIL
		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.	NIL
		(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & makings, 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	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		complete in all respects as specified as specified.	
		(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	NIL
Major Bridges (Length >60m) works and ROB/RUB/elevated section/flyover including viaducts if any.	20.18	**A.1 - Widening and repairs of Major Bridges**	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL
		(4) Wearing Coat including expansion joints	NIL
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL
		(6) Wing walls/return walls	NIL
		(7) Guide Bunds, River Training works etc	NIL
		(8) Approaches (including Retaining walls, stone pitching and protection works)	NIL
		A.2- New Major Bridges	
		(1) Foundation	55.38
		(2) Sub-structure	15.94
		(3) Super-structure (including bearings)	24.09
		(4) Wearing Coat including expansion joints	1.75
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	2.05
		(6) Wing walls/return walls	NIL
		(7) Guide Bunds, River Training works etc.	0.26
		(8) Approaches (including Retaining walls, stone pitching and protection works)	0.52
		B.1- Widening and Repair of **(a) ROB** **(b) RUB**	

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL
		(4) Wearing Coat: (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified.	NIL
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL
		(6) Wing walls/return walls	NIL
		(7) Approaches (including Retaining walls, stone pitching and protection works)	NIL
		B.2- New ROB/RUB **(a) ROB** **(b) RUB**	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL
		(4) Wearing Coat: (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified.	NIL
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL
		(6) Wing walls/return walls	NIL
		(7) Approaches (including Retaining walls, stone pitching and protection works)	NIL
		C.1- Widening and repair of Elevated Section/Flyovers/Grade	

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		Separators	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL
		(4) Wearing Coat including expansion joints.	NIL
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL
		(6) Wing walls/return walls	NIL
		(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	NIL
		C.2- New Elevated Section/Flyovers/Grade Separators	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL
		(4) Wearing Coat including expansion joints.	NIL
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL
		(6) Wing walls/return walls	NIL
		(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	NIL
Other works	13.25	(i) Toll Plaza	NIL
		(ii) Road side drains	12.53
		(iii) Road signs, markings, km stones, safety devices, ….	46.73
		(iv) Project facilities	
		(a) Bus Bays & Bus Shelter	4.19
		(b) Truck lay-byes	2.14
		(c) Rest areas	NIL
		(d) Electrical Works	0.58
		(e) Junctions	18.53
		(f) others	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		(v) Road side plantation	7.18
		(vi) Protection works other than elevated sections/ flyovers/grade separators and ROBs/RUBs.	NIL
		(vii) Safety and traffic management during construction	NIL
		(viii) Maintenance of Existing Road	5.50
		(ix) Median & Island Filling	2.62

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 for Payment	Percentage weightage	Payment Procedure
A- Widening and strengthening of existing road		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in a length of not less than 5 (Five) percent of the total length.
(1) Earthwork up to top of sub-grade	6.83	
(2) Sub Base Course	7.30	
(3) Non-Bituminous Base Course	7.88	
(4) Bituminous Base Course	15.54	
(5) Wearing Coat	6.33	
(6) Widening and repair of culvert	NIL	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 one culvert.
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 1(one) km. length whichever is less.
(1) Earthwork up to top of sub-grade	9.83	
(2) Sub Base Course	10.16	
(3) Non-Bituminous Base	10.47	

Stage for Payment	Percentage weightage	Payment Procedure
Course		
(4) Bituminous Base Course	17.01	
(5) Wearing Coat	6.68	
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 1(one) km. length whichever is less.
(1) Earthwork up to top of sub-grade	NIL	
(2) Sub Base Course	NIL	
(3) Dry Lean Concrete (DLC) Course	NIL	
(4) Pavement Quality Control (PQC) Course	NIL	
C.1- Reconstruction / New Service road (Flexible Pavement)		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 1(one) km. length whichever is less.
(1) Earthwork up to top of sub-grade	NIL	
(2) Sub Base Course	NIL	
(3) Non-Bituminous Base Course	NIL	
(4) Bituminous Base Course	NIL	
(5) Wearing Coat	NIL	
C.2- Reconstruction / New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 1(one) km. length whichever is less.
(1) Earthwork up to top of sub-grade	NIL	
(2) Sub Base Course	NIL	
(3) Dry Lean Concrete (DLC) Course	NIL	
(4) Pavement Quality Control (PQC) Course	NIL	
D- Re-Construction and New culverts on existing road, realignments, bypasses:		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 one culverts.
Culverts (Length <6 m)	1.98	

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

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

Where P= Contract Price

L = Total length in km

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

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

1.3.2 Minor Bridges and Underpasses/Overpasses.

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

Table 1.3.2

Stage for Payment	Percentage weightage	Payment Procedure
A.1- Widening and repairs of Minor Bridges (length>6m and <60m) Minor Bridges	26.33	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 each minor bridge.
A.2- New Minor Bridges (length>6m and <60m)		
(1) **Foundation:** On completion of the foundation work including foundation for wing and return walls, abutments, piers	19.91	(i) **Foundation:** Cost of each minor bridge shall be determined on pro rata basis with respect to the total linear length (m) of the minor bridges. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of each bridge subject to completion of at least one foundation of each bridge. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) **Sub-Structure:** On completion of the substructure work including wing and return walls, abutments, piers upto the abutment/pier cap.	24.84	(i) **Sub-Structure:** 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 sub-structure shall be made on pro-rata basis on completion of a stage i.e.

Stage for Payment	Percentage weightage	Payment Procedure
		not less than 25% of the scope sub-structure of each bridge subject to completion of at least one sub-structure upto abutment/pier cap level of each bridge.
(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.	19.62	(ii) **Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of atleast one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(3) **Approaches:** On completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	2.80	(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 in the column of "Stage of Payment" in this sub-clause.
(4) **Guide Bunds and River Training works :** On completion of Guide Bunds and river Training works complete in all respects	6.49	(iv) **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 in all respects as specified.
B.1- Widening and Repair of underpasses/overpasses		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.
Underpasses/ Overpasses	NIL	
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.	NIL	(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 atleast two foundations along with sub-structure upto abutment/pier cap

Stage for Payment	Percentage weightage	Payment Procedure
		each underpass/ overpass. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & makings, 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 as specified.	NIL	(ii) **Super-structure:** Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of atleast one span in all respects as specified in the column of "Stage of Payment" in this sub-clause.
(3) Approaches: On completion of approaches including Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	NIL	(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 for Payment	Percentage weightage	Payment Procedure
A.1 - Widening and repairs of Major Bridges		
(1) Foundation	NIL	(i) **Foundation:** Cost of each Major Bridge shall be determined on pro rata basis with respect to the total linear length (m) of the

Stage for Payment	Percentage weightage	Payment Procedure
		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 atleast 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.
(2) Sub-structure	NIL	(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-sructure of the major bridge subject to completion of at least two sub-structures of abutments/piers upto abutment/pier cap level of the major bridge.
(3) Super-structure (including bearings)	NIL	(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.
(4) Wearing Coat including expansion joints	NIL	(iv) **Wearing Coat :** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/ return walls complete in all respects as specified.
(7) Guide Bunds, River Training works etc.	NIL	(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.
(8) Approaches (including Retaining walls, stone pitching and protection works)	NIL	(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		

Stage for Payment	Percentage weightage	Payment Procedure
(1) Foundation	55.38	(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.
(2) Sub-structure	15.94	(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-sructure of the major bridge subject to completion of at least two sub-structures of abutments/piers upto abutment/ pier cap level of the major bridge.
(3) Super-structure (including bearings)	24.09	(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.
(4) Wearing Coat including expansion joints	1.75	(iv) **Wearing Coat :** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	2.05	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Guide Bunds, River Training works etc.	0.26	(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.
(8) Approaches (including Retaining walls, stone pitching and protection works)	0.52	(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 Repair of **(a) ROB** **(b) RUB**		
(1) Foundation	NIL	(i) **Foundation:** Cost of each ROB/RUB shall be determined on pro rata basis with respect

Stage for Payment	Percentage weightage	Payment Procedure
		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.
(2) Sub-structure	NIL	(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-sructure of the ROB/RUB subject to completion of at least two sub-structures of abutments/piers upto abutment/pier cap level of the ROB/RUB.
(3) Super-structure (including bearings)	NIL	(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 atleast one span in all respects as specified.
(4) Wearing Coat: (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified.	NIL	(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.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/ return walls complete in all respects as specified.
(7) Approaches (including Retaining walls, stone pitching and protection works)	NIL	(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 ROB/RUB **(a) ROB** **(b) RUB**		
(1) Foundation	NIL	(i) **Foundation:** Cost of each ROB/RUB shall be determined on pro rata basis with respect to

Stage for Payment	Percentage weightage	Payment Procedure
		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 atleast 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.
(2) Sub-structure	NIL	(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-sructure of the ROB/RUB subject to completion of atleast two sub-structures of abutments/piers upto abutment/pier cap level of the ROB/RUB.
(3) Super-structure (including bearings)	NIL	(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 atleast one span in all respects as specified.
(4) Wearing Coat: (a) in case of ROB- wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB- rigid pavement under RUB including drainage facility complete in all respects as specified.	NIL	(iv) **Wearing Coat :** Payment shall be made on completion of (a) in case of ROB- wearing coat including expansion jointds 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.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (including Retaining walls, stone pitching and protection works)	NIL	(vii) **Approaches :** Payments shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
C.1- Widening and repair of Elevated Section/Flyovers/Grade Separators		
(1) Foundation	NIL	(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.

Stage for Payment	Percentage weightage	Payment Procedure
		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.
(2) Sub-structure	NIL	(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-sructure of the major bridge subject to completion of at least two sub-structures of abutments/piers upto abutment/pier cap level of the structure.
(3) Super-structure (including bearings)	NIL	(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.
(4) Wearing Coat including expansion joints .	NIL	(iv) **Wearing Coat :** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	NIL	(vii) **Approaches :** Payment shall be made on completion of both approaches including stone pitching, protection works, etc. complete in all respects as specified.
C.2- New Elevated Section/Flyovers/Grade Separators		
(1) Foundation	NIL	(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 the structure subject to completion of at least two foundations of the structure. In case where load testing is required for

Stage for Payment	Percentage weightage	Payment Procedure
		foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	NIL	(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-sructure of the structure subject to completion of at least two sub-structures of abutments/piers upto abutment/pier cap level of the structure.
(3) Super-structure (including bearings)	NIL	(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.
(4) Wearing Coat including expansion joints.	NIL	(iv) **Wearing Coat :** Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	NIL	(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.
(6) Wing walls/return walls	NIL	(vi) **Wing walls/return walls:** Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.
(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	NIL	(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 for Payment	Percentage weightage	Payment Procedure
(i) Toll Plaza	NIL	Unit of measurement is each completed toll

Stage for Payment	Percentage weightage	Payment Procedure
		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	12.53	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.
(iii) Road signs, markings, km stones, safety devices, ….	46.73	
(iv) Project facilities		Payment shall be made on pro rata basis for completed facilities.
(a) Bus Bays & Bus Shelter	4.19	
(b) Truck lay-byes	2.14	
(c) Rest areas	NIL	
(d) Electrical Works	0.58	
(e) Junctions	18.53	
(f) others	NIL	
(v) Road side plantation	7.18	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.	NIL	
(vii) Safety and traffic management during construction	NIL	Payment shall be made on pro rata basis every six months.
(viii) Maintenance of Existing Road	5.50	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) Median & island Filling	2.62	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.

Schedule - J

(See Clause 10.3 (ii))

Project Completion Schedule

1. Project Completion Schedule

During Construction period, the Contractor shall comply with the requirements set forth in this Schedule-J for each of the Project Milestones and the Scheduled Completion Date. Within 15 (fifteen) days of the date of each Project Milestone, the Contractor shall notify the Authority of such compliance along with necessary particulars thereof.

2. Project Milestone-I

(i) Project Milestone-I shall occur on the date falling on the [35% of the Scheduled Construction Period] day from the Appointed Date (the "Project Milestone- I").

(ii) Prior to the occurrence of Project Milestone-I, the Contractor shall have commenced construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 10% (ten per cent) of the Contract Price.

3. Project Milestone-II

(i) Project Milestone-II shall occur on the date falling on the [60% of the Scheduled Construction Period] day from the Appointed Date (the "Project Milestone- II").

(ii) Prior to the occurrence of Project Milestone-II, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 35% (thirty five per cent) of the Contract Price and should have started construction of all bridges

4. Project Milestone-III

(i) Project Milestone-III shall occur on the date falling on the [85% of the Scheduled Construction Period] day from the Appointed Date (the "Project Milestone- III").

(ii) Prior to the occurrence of Project Milestone-III, the Contractor shall have continued with construction of the Project Highway and submitted to the Authority duly and validly prepared Stage Payment Statements for an amount not less than 70% (seventy per cent) of the Contract Price and should have started construction of all project facilities.

5. Scheduled Completion Date

(i) The Scheduled Completion Date shall occur on the 540 day from the Appointed Date.

(ii) On or before the Scheduled Completion Date, the Contractor shall have completed construction in accordance with this Agreement.

6. Extension of time

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.