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 80+930 (existing Ch. km 81+000 of NH 29) to km 96+400 (existing Ch. km 95+400 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	81+920	82
2	82+920	83
3	83+920	84
4	84+930	85
5	85+930	86
6	86+935	87
7	Bypass	88
8		89
9		90
10		91
11		92
12	95+155	94
13	96+100	95

2. Land

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

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
80+950	15.00	15.00	30.00
81+000	15.50	16.00	31.50
81+050	15.50	17.00	32.50
81+100	14.00	18.00	32.00
81+150	13.00	17.00	30.00

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
81+200	11.00	16.00	27.00
81+250	11.00	17.00	28.00
81+300	11.00	18.00	29.00
81+350	11.00	20.00	31.00
81+400	12.00	21.00	33.00
81+450	12.00	22.00	34.00
81+500	11.00	24.00	35.00
81+550	12.00	24.00	36.00
81+600	14.00	22.50	36.50
81+650	14.00	21.50	35.50
81+700	14.00	19.00	33.00
81+750	15.00	20.00	35.00
81+800	16.50	21.00	37.50
81+850	18.00	22.00	40.00
81+900	18.00	24.00	42.00
81+950	15.00	22.00	37.00
82+000	15.00	22.00	37.00
82+050	14.00	20.00	34.00
82+100	12.00	15.00	27.00
82+150	14.00	15.00	29.00
82+200	19.00	12.00	31.00
82+250	23.00	10.00	33.00
82+300	22.00	10.00	32.00
82+350	13.00	10.00	23.00
82+400	11.00	10.00	21.00
82+450	10.00	10.50	20.50
82+500	11.00	11.00	22.00
82+550	11.50	11.00	22.50
82+600	12.00	10.00	22.00
82+650	13.00	10.00	23.00
82+700	14.00	9.00	23.00
82+750	14.00	9.00	23.00
82+800	14.00	9.00	23.00
82+850	13.00	9.00	22.00
82+900	12.50	9.00	21.50
82+950	12.00	9.00	21.00
83+000	12.00	9.00	21.00
83+050	12.00	9.00	21.00
83+100	12.00	8.00	20.00
83+150	12.50	8.00	20.50
83+200	13.00	8.00	21.00
83+250	13.00	8.00	21.00
83+300	14.00	8.50	22.50

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
83+350	13.50	9.50	23.00
83+400	17.00	10.50	27.50
83+450	19.00	11.50	30.50
83+500	20.00	13.00	33.00
83+550	21.00	15.00	36.00
83+600	18.00	19.00	37.00
83+650	16.50	20.00	36.50
83+700	16.00	16.00	32.00
83+750	18.00	15.00	33.00
83+800	17.00	17.00	34.00
83+850	17.00	18.00	35.00
83+900	17.00	17.00	34.00
83+950	16.00	11.00	27.00
84+000	15.50	10.00	25.50
84+050	16.00	10.00	26.00
84+100	17.00	9.00	26.00
84+150	15.00	10.00	25.00
84+200	15.50	10.00	25.50
84+250	16.00	9.50	25.50
84+300	16.00	10.00	26.00
84+350	16.00	10.00	26.00
84+400	16.00	10.00	26.00
84+450	16.00	10.00	26.00
84+500	16.50	10.00	26.50
84+550	17.00	10.00	27.00
84+600	17.00	10.00	27.00
84+650	17.00	10.00	27.00
84+700	17.00	10.00	27.00
84+750	18.00	10.00	28.00
84+800	18.00	9.00	27.00
84+850	18.00	8.00	26.00
84+900	17.00	6.00	23.00
84+950	17.00	7.50	24.50
85+000	16.00	9.00	25.00
85+050	14.00	10.00	24.00
85+100	12.00	11.00	23.00
85+150	12.50	11.00	23.50
85+200	11.00	10.00	21.00
85+250	10.00	11.00	21.00
85+300	10.00	12.00	22.00
85+350	9.00	13.00	22.00
85+400	9.00	13.00	22.00
85+450	9.00	12.50	21.50

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
85+500	9.00	12.50	21.50
85+550	9.00	13.00	22.00
85+600	9.00	13.00	22.00
85+650	9.00	13.00	22.00
85+700	9.00	13.00	22.00
85+750	8.00	13.00	21.00
85+800	9.00	11.00	20.00
85+850	10.00	10.00	20.00
85+900	9.00	11.00	20.00
85+950	9.00	11.00	20.00
86+000	9.00	11.00	20.00
86+050	9.00	11.00	20.00
86+100	9.00	11.00	20.00
86+150	10.00	11.00	21.00
86+200	11.00	11.00	22.00
86+250	13.00	11.00	24.00
86+300	14.00	10.00	24.00
86+350	14.00	11.00	25.00
86+400	14.00	11.50	25.50
86+450	14.00	12.00	26.00
86+500	14.00	12.00	26.00
86+550	15.00	12.00	27.00
86+600	15.00	13.00	28.00
86+650	14.00	11.00	25.00
86+700	14.00	11.00	25.00
86+750	13.00	11.00	24.00
86+800	13.00	11.00	24.00
86+850	12.00	11.00	23.00
86+900	11.00	11.00	22.00
86+950	12.00	12.00	24.00
87+000	13.00	13.00	26.00
87+050	14.00	11.00	25.00
87+100	14.00	10.00	24.00
87+150	12.00	11.00	23.00
87+200	11.00	10.00	21.00
87+250	12.00	10.00	22.00
87+300	11.00	12.00	23.00
87+350	**Bokulia Bypass**		
87+400			
87+450			
87+500			
87+550			
87+600			

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
87+650	Bokulia Bypass		
87+700			
87+750			
87+800			
87+850			
87+900			
87+950			
88+000			
88+050			
88+100			
88+150			
88+200			
88+250			
88+300			
88+350			
88+400			
88+450			
88+500			
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88+700			
88+750			
88+800			
88+850			
88+900			
88+950			
89+000			
89+050			
89+100			
89+150			
89+200			
89+250			
89+300			
89+350			
89+400			
89+450			
89+500			
89+550			
89+600			
89+650			
89+700			
89+750			

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
89+800	Bokulia Bypass		
89+850			
89+900			
89+950			
90+000			
90+050			
90+100			
90+150			
90+200			
90+250			
90+300			
90+350			
90+400			
90+450			
90+500			
90+550			
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90+750			
90+800			
90+850			
90+900			
90+950			
91+000			
91+050			
91+100			
91+150			
91+200			
91+250			
91+300			
91+350			
91+400			
91+450			
91+500			
91+550			
91+600			
91+650			
91+700			
91+750			
91+800			
91+850			
91+900			

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
91+950	Bokulia Bypass		
92+000			
92+050			
92+100			
92+150			
92+200			
92+250			
92+300			
92+350			
92+400			
92+450			
92+500			
92+550			
92+600			
92+650			
92+700			
92+750			
92+800			
92+850			
92+900			
92+950			
93+000			
93+050			
93+100			
93+150			
93+200			
93+250			
93+300			
93+350			
93+400			
93+450			
93+500			
93+550			
93+600			
93+650			
93+700			
93+750			
93+800			
93+850			
93+900			
93+950			
94+000			
94+050			

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
94+100	Bokulia Bypass		
94+150			
94+200			
94+250			
94+300			
94+350			
94+400			
94+450			
94+500			
94+550			
94+600			
94+650			
94+700			
94+750			
94+800			
94+850			
94+900			
94+950	12.96	10.88	23.84
95+000	13.24	11.46	24.70
95+050	12.28	12.05	24.33
95+100	11.82	12.47	24.29
95+150	11.44	13.14	24.59
95+200	11.20	13.28	24.48
95+250	11.66	11.62	23.28
95+300	11.64	12.35	23.99
95+350	12.89	11.72	24.61
95+400	12.86	11.20	24.06
95+450	10.25	11.43	21.68
95+500	10.79	11.96	22.75
95+550	10.03	11.56	21.59
95+600	11.26	9.75	21.02
95+650	11.87	9.08	20.95
95+700	12.54	8.84	21.38
95+750	13.32	10.87	24.19
95+800	13.61	10.74	24.36
95+850	11.26	11.62	22.88
95+900	9.62	12.96	22.59
95+950	12.67	10.39	23.06
96+000	12.59	12.27	24.86
96+050	12.72	13.45	26.17
96+100	13.48	13.11	26.60
96+150	13.62	13.02	26.64
96+200	11.85	12.36	24.21

Design Chainage	Distance from ECL to EROW		EROW (m)
	Left	Right	
96+250	9.88	12.51	22.40
96+300	10.73	14.23	24.96
96+350	9.13	14.53	23.66

3. Carriageway

The present carriageway of the Project Highway is double Lane with paved shoulder. Average width of the carriageway is 10.0 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 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	83+600	1	1x26	25.35	26.0	7.50	8.10	NA	RCC T Girder
2	88+600	1	1x26	25.40	26.0	7.50	8.20	NA	RCC T Girder
3	91+900	1	1x22.4	22.0	22.4	7.50	8.10	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 Structures	Thickness of Slab/Dia of Pipe(m)	No. of Span x Span Length (m)	Carriageway Width (m)	Width of Culvert (m)	Overall Condition
1	81+400	RCC Slab	0.3	1x1.2	10.0	17.6	Fair
2	81+500	HP Culvert	1.2	1x1.2	10.0	17.6	Fair
3	81+800	RCC Slab	0.3	2x1.2	10.0	17.6	Fair
4	82+470	HP Culvert	1.2	2x1.2	10.0	17.6	Fair
5	82+500	HP Culvert	0.9	1x0.9	10.0	17.1	Fair
6	82+600	HP Culvert	1.2	2x1.2	10.0	17.1	Fair

Sl. No.	Existing Chainage (km)	Type of Structures	Thickness of Slab/Dia of Pipe(m)	No. of Span x Span Length (m)	Carriageway Width (m)	Width of Culvert (m)	Overall Condition
7	82+900	HP Culvert	1.0	2x1.0	10.0	17.1	Fair
8	83+100	HP Culvert	1.2	1x1.2	10.0	17.1	Fair
9	83+300	HP Culvert	1.2	2x1.2	10.0	17.1	Fair
10	83+980	HP Culvert	1.2	2x1.2	10.0	17.1	Fair
11	84+200	HP Culvert	1.2	2x1.2	10.0	17.1	Fair
12	84+500	HP Culvert	1.0	2x1.0	10.0	17.1	Poor
13	84+700	N.V	-	-	10.0	17.1	-
14	85+200	HP Culvert	1.0	2x1.0	10.0	17.1	Poor
15	85+500	HP Culvert	1.0	2x1.0	10.0	17.1	Poor
16	85+700	HP Culvert	1.2	1x1.2	10.0	17.1	Poor
17	85+960	HP Culvert	1.2	1x1.2	9.5	13.9	Poor
18	86+200	HP Culvert	1.0	2x1.0	9.5	13.8	Poor
19	86+600	HP Culvert	1.2	2x1.2	9.5	13.8	Fair
20	86+800	HP Culvert	1.2	2x1.2	9.5	13.8	Fair
21	86+900	HP Culvert	1.2	2x1.2	9.5	13.8	Fair
22	87+100	HP Culvert	1.0	2x1.0	9.5	13.8	Fair
23	87+500	HP Culvert	1.0	2x1.0	9.5	13.9	Poor
24	87+900	HP Culvert	0.9	3x0.9	9.5	14.3	Poor
25	88+300	HP Culvert	1.2	2x1.2	9.5	15.6	Poor
26	88+400	N.V	-	-	9.5	20.5	-
27	88+500	HP Culvert	1.0	2x1.0	9.5	14.8	Poor
28	88+600	N.V	-	-	9.5	14.3	-
29	89+400	Chocked	-	-	9.5	14.6	Poor
30	89+700	HP Culvert	1.2	2x1.2	9.5	14.6	Fair
31	90+200	HP Culvert	1.0	2x1.0	9.5	14.6	Fair
32	90+900	HP Culvert	1.0	2x1.0	9.5	14.6	Fair
33	91+100	HP Culvert	1.0	2x1.0	9.5	15.6	Poor
34	91+700	HP Culvert	1.2	1x1.2	9.5	16.6	Poor
35	91+900	Chocked	-	-	9.5	15.3	Poor
36	92+000	Chocked	-	-	9.5	13.2	Poor
37	93+100	HP Culvert	1.2	1x1.2	9.5	15.5	Poor
38	93+400	HP Culvert	1.2	1x1.2	9.5	13.5	Fair
39	93+500	Chocked	-	-	9.5	12.8	Poor
40	93+900	HP Culvert	1.2	1x1.2	9.5	16.2	Poor
41	94+000	HP Culvert	1.2	1x1.2	9.5	16.2	Fair

Sl. No.	Existing Chainage (km)	Type of Structures	Thickness of Slab/Dia of Pipe(m)	No. of Span x Span Length (m)	Carriageway Width (m)	Width of Culvert (m)	Overall Condition
42	94+300	HP Culvert	1.2	1x1.2	9.5	13.8	Poor
43	94+700	HP Culvert	1.2	1x1.2	9.5	13.8	Fair
44	95+100	HP Culvert	1.2	1x1.2	9.5	14.1	Fair

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)
1	85+200	NH-29	RHS	To Howrahghat	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	Surfacing Type	Carriageway Width (m)
1	81+160	NH-29	RHS	To Village	Bituminous	3.5
2	82+760	NH-29	LHS	To Village	Bituminous	3.5
3	89+700	NH-29	RHS	To Village	Bituminous	3.5
4	89+800	NH-29	LHS	To Village	Bituminous	3.5
5	90+810	NH-29	RHS	To Village	Bituminous	3.5
6	91+700	NH-29	RHS	To Village	Bituminous	3.5
7	93+300	NH-29	LHS	To Village	Bituminous	3.5
8	94+150	NH-29	LHS	To Village	Bituminous	3.5
9	95+090	NH-29	LHS	To Rongnagar	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)	80+930	82+050	1+120	47	At appointed date
	82+050	84+800	2+750	42	
	84+800	85+530	0+730	60	
	85+530	96+400	10+870	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] 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
1	Loringthepi	80+930 to 82+050	10.0 (including paved shoulder & kerb shyness)	TCS-3

(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	85+044	65
2	85+406	65
3	95+461	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 Realignments:

Sl. No.	Design Ch.(km)		Length (m)	Remarks
	From	To		
1	95+900	96+100	200	Realignment

Details of Bypasses:

Sl. No.	Design Ch.(km)		Length (m)	Remarks
	From	To		
1	87+300	95+000	7700	Bokulia Bypass

(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	
3	80+930	82+050	Paved Shoulder & Footpath	2.5	1.5	TCS-3

(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) In approaches of grade separator structure, 2 m width paved shoulder and 1.5 m footpath has been proposed and 1.5 m footpath in service road on either side has been proposed in TCS-7

(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)
1	85+160	VUP	30	5.5

(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			
1	80+930	82+050	Both	1.120	Builtup
2	84+800	85+145	Both	0.345	VUP Approaches
3	85+175	85+530	Both	0.355	VUP Approaches

(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
1	VUP	85+160	1 x 30	30	2 X 15.1	PSC I Girder

(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	
1	Howraghat Tinali at km 85+160	VUP(30 m)	96.730	96.830	-	-

(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	80930	82050	1120	3	Typical Cross Section of 4-Lane Divided Carriageway (Concentric widening) with 7.5m Service Road on Both Sides in Built-Up Area
2	82050	83300	1250	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
3	83300	83507	207	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
4	83507	83533	26	STR	MNB

Sl. No.	Design Ch.(km)		Length (m)	TCS No.	Description
	From	To			
5	83533	83900	367	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
6	83900	84800	900	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
7	84800	85145	345	7	Typical Cross Section of 4-Lane Divided Carriageway at grade separetor approaches with Rewall and service road on both side
8	85145	85175	30	STR	VUP
9	85175	85530	355	7	Typical Cross Section of 4-Lane Divided Carriageway at grade separetor approaches with Rewall and service road on both side
10	85530	86920	1390	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
11	86920	87020	100	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
12	87020	87300	280	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
13	87300	88756.75	1456.75	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
14	88756.75	88763.25	6.5	STR	MNB
15	88763.25	89612	848.75	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
16	89612	89628	16	STR	MNB
17	89628	91140	1512	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
18	91140	91152	12	STR	MNB
19	91152	92084	932	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			
20	92084	92096	12	STR	MNB
21	92096	92311	215	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
22	92311	92323	12	STR	MNB
23	92323	95000	2677	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
24	95000	95250	250	1	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Concentric Widening)
25	95250	95770	520	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
26	95770	95850	80	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
27	95850	95900	50	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
28	95900	96100	200	1A	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in bypasses and realignment
29	96100	96180	80	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
30	96180	96280	100	2	Typical Cross Section of 4-Lane Divided Carriageway with 1.5 m Wide Raised Median in Rural Area (Eccentric Widening)
31	96280	96400	120	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:

Sl No.	Design Chainage (km)	Type of Intersection	Type	Side	Improvement Proposals	Remarks
1	87+400	Major	3 - legged	Right	At-grade Intersection	Start of Bokulia Bypass
2	94+800	Major	3 - legged	Right	At-grade Intersection	End of Bokulia Bypass

Sl. No.	Design Chainage (km)	Type of Intersection	Type	Side	Improvement Proposals
1	81+110	Minor	4 legged	Both	At Grade
2	81+430	Minor	3 legged	Left	At Grade
3	81+890	Minor	3 legged	Right	At Grade
4	82+770	Minor	4 legged	Both	At Grade
5	83+720	Minor	3 legged	Right	At Grade
6	85+350	Minor	3 legged	Right	At Grade
7	90+310	Minor	4 legged	Both	At Grade
8	93+560	Minor	4 legged	Both	At Grade
9	94+050	Minor	4 legged	Both	At Grade
10	95+340	Minor	3 legged	Left	At Grade
11	95+600	Minor	3 legged	Right	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
1	Grade separated intersection (VUP)	85+160	1 x 30	30	2 X 15.1	PSC I Girder

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		
1	80+930	82+050	1+120	Both
2	84+800	85+145	0+345	Both
3	85+175	85+530	0+355	Both

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 Total Length (m)	Width of proposed structure (m)	Proposed Type of Superstructure	Improvement Proposal	Remarks
1	88+760	1x6.5	6.5	2x13.5	RCC Box	New 4 lane	New Construction
2	89+620	2x8.0	16.0	2x13.5	RCC Box	New 4 lane	New Construction
3	91+146	2x6.0	12.0	2x13.5	RCC Box	New 4 lane	New Construction
4	92+090	2x6.0	12.0	2x13.5	RCC Box	New 4 lane	New Construction
5	92+317	2x6.0	12.0	2x13.5	RCC Box	New 4 lane	New Construction

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
1	Grade separated intersection (VUP)	85+160	1 x 30	30	2 X 15.1	PSC I Girder

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

Sl N-o.	Design Chainage (km)	Remarks
1	83+520	-
2	85+160	-
3	88+760	-
4	89+620	-
5	91+146	-
6	92+090	-
7	92+317	-

(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	Ex. Span Arrangement/Dia. (m)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal
1	81+240	Pipe Culvert	2x0.9	Pipe Culvert	2x1.2	New 4Lane
2	81+643	Pipe Culvert	2x0.9	Pipe Culvert	2x1.2	New 4Lane
3	81+922	Pipe Culvert	1x0.6	Pipe Culvert	2x1.2	New 4Lane
4	84+966	Pipe Culvert	2x0.6	Pipe Culvert	2x1.2	New 4Lane
5	85+054	Pipe Culvert	2x0.9	Pipe Culvert	2x1.2	New 4Lane
6	85+604	Pipe Culvert	2x0.6	Pipe Culvert	2x1.2	New 4Lane
7	85+829	Pipe Culvert	2x0.6	Pipe Culvert	2x1.2	New 4Lane
8	86+101	Pipe Culvert	2x0.6	Pipe Culvert	2x1.2	New 4Lane
9	96+190	Pipe Culvert	1x0.6	Pipe Culvert	1x1.2	New 4Lane

(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	Ex. Span Arrangement /Dia. (m)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal
1	80+976	Pipe Culvert	2x1.0	Pipe Culvert	2x1.0	Ex Retain & repairing +New 2Lane
2	81+387	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
3	82+334	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
4	82+444	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
5	82+744	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
6	82+800	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
7	82+988	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
8	83+168	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
9	83+885	Pipe Culvert	2x1.0	Pipe Culvert	2x1.0	Ex Retain & repairing +New 2Lane
10	84+020	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
11	84+328	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
12	84+612	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
13	84+824	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane

Sl. No.	Design Chainage (km)	Type of Existing Culvert	Ex. Span Arrangement /Dia. (m)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal
14	85+382	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
15	86+430	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
16	86+635	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
17	86+740	Pipe Culvert	2x1.0	Pipe Culvert	2x1.0	Ex Retain & repairing +New 2Lane
18	86+971	Pipe Culvert	2x1.2	Pipe Culvert	2x1.2	Ex Retain & repairing +New 2Lane
19	87+340	Pipe Culvert	2x0.9	Pipe Culvert	2x1.0	Ex Retain & repairing +New 2Lane
20	94+960	Pipe Culvert	1x0.9	Pipe Culvert	1x0.9	Ex Retain & repairing +New 2Lane
21	95+388	Pipe Culvert	1x0.9	Pipe Culvert	1x0.9	Ex Retain & repairing +New 2Lane
22	95+880	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	Ex Retain & repairing +New 2Lane
23	95+946	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	Ex Retain & repairing +New 2Lane
24	96+157	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	Ex Retain & repairing +New 2Lane
25	96+258	Pipe Culvert	1x1.2	Pipe Culvert	1x1.2	Ex Retain & repairing +New 2Lane

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

Sl. No.	Design Chainage (km)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal
1	87+550	Pipe Culvert	1x1.2	New 4Lane
2	87+800	Pipe Culvert	1x1.2	New 4Lane
3	88+050	Pipe Culvert	1x1.2	New 4Lane

Sl. No.	Design Chainage (km)	Type of Proposed Culvert	Span Arrangement (m)	Improvement Proposal
4	88+300	Pipe Culvert	1x1.2	New 4Lane
5	88+550	Pipe Culvert	1x1.2	New 4Lane
6	88+800	Pipe Culvert	1x1.2	New 4Lane
7	89+000	Box Culvert	1x4.5	New 4Lane
8	89+300	Pipe Culvert	1x1.2	New 4Lane
9	89+550	Pipe Culvert	1x1.2	New 4Lane
10	89+800	Pipe Culvert	1x1.2	New 4Lane
11	90+050	Pipe Culvert	1x1.2	New 4Lane
12	90+300	Pipe Culvert	1x1.2	New 4Lane
13	90+460	Box Culvert	1x5.0	New 4Lane
14	90+550	Pipe Culvert	1x1.2	New 4Lane
15	90+800	Pipe Culvert	1x1.2	New 4Lane
16	91+050	Pipe Culvert	1x1.2	New 4Lane
17	91+300	Pipe Culvert	1x1.2	New 4Lane
18	91+550	Pipe Culvert	1x1.2	New 4Lane
19	91+800	Pipe Culvert	1x1.2	New 4Lane
20	92+050	Pipe Culvert	1x1.2	New 4Lane
21	92+550	Pipe Culvert	1x1.2	New 4Lane
22	92+800	Pipe Culvert	1x1.2	New 4Lane
23	93+050	Pipe Culvert	1x1.2	New 4Lane
24	93+300	Pipe Culvert	1x1.2	New 4Lane
25	93+550	Pipe Culvert	1x1.2	New 4Lane
26	93+800	Pipe Culvert	1x1.2	New 4Lane
27	94+050	Pipe Culvert	1x1.2	New 4Lane
28	94+300	Pipe Culvert	1x1.2	New 4Lane
29	94+550	Pipe Culvert	1x1.2	New 4Lane
30	94+800	Pipe Culvert	1x1.2	New 4Lane

(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	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
1	83+520	1x26.0	26	Retain + 13.5	RCC T-Girder	New 2 lane	Retain & Repair

(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 Ch(km)	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
1	88+760	1x6.5	6.5	2x13.5	RCC Box	New 4 lane	New Construction
2	89+620	2x8.0	16	2x13.5	RCC Box	New 4 lane	New Construction
3	91+146	2x6.0	12	2x13.5	RCC Box	New 4 lane	New Construction
4	92+090	2x6.0	12	2x13.5	RCC Box	New 4 lane	New Construction
5	92+317	2x6.0	12	2x13.5	RCC Box	New 4 lane	New Construction

(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
1	83+520	1x26.0	26	Retain + 13.5	RCC T-Girder	New 2 lane	Retain & Repair

(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
1	83+520	1x26.0	26	Retain + 13.5	RCC T-Girder	New 2 lane	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	83+520	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. Roadside 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

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	7000
A2	LT Line	Meter	15000
A3	11 KV Line	Meter	30000
A4	Transformers	Nos.	7
B			
B1	Water Pipe Line	meters	15000
B2	Hand Pump	Nos.	5
C	***Felling of Tress***	***Nos.***	***1630***

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
Nil		

(g) bus-bays and bus shelters;

Bus bays shall be provided at locations given below:

Sl. no.	Design Ch. (km)	Side
1	86+050	LHS
2	93+900	RHS
3	94+300	LHS

(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	66.23	**A- Widening and strengthening of existing road**	
		(1) Earthwork up to top of sub-grade	7.19
		(2) Sub Base Course	7.39
		(3) Non Bituminous Base Course	8.13
		(4) Bituminous Base Course	15.07
		(5) Wearing Coat	6.18
		(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	7.92
		(2) Sub Base Course	NIL
		(3) Non-Bituminous Base Course	18.41
		(4) Bituminous Base Course	0.94
		(5) Wearing Coat	19.01
		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	0.80
		(2) Sub Base Course	1.20
		(3) Non-Bituminous Base Course	1.58
		(4) Bituminous Base Course	1.69
		(5) Wearing Coat	0.98
		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)	3.52
Minor Bridges/ Underpasses/ Overpasses	7.60	**A.1- Widening and repairs of Minor Bridges (length>6m and <60m)**	
		Minor Bridges	24.02
		A.2- New Minor Bridges (length>6m and <60m)	
		(1) **Foundation + Sub-Structure:** On completion of the foundation work including foundation for wing and return walls, abutments, piers upto the abutment/pier cap.	37.27
		(2) **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	25.75

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		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.	4.78
		(4) **Guide Bunds and River Training works:** On completion of Guide Bunds and river Training works complete in all respects	8.18
		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 complete in all respects as specified as specified.	NIL
		(3) Approaches: On completion of approaches including	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		Retaining walls/ Reinforced Earth walls, stone pitching, protection works complete in all respect and fit for use.	
Major Bridges (Length >60m) works and ROB/RUB/elevated section/flyover including viaducts if any.	12.27	**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	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
		B.1- Widening and Repair of **(a) ROB** **(b) RUB**	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure (including bearings)	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		(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 Separators	
		(1) Foundation	NIL
		(2) Sub-structure	NIL
		(3) Super-structure	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		(including bearings)	
		(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	9.57
		(2) Sub-structure	11.15
		(3) Super-structure (including bearings)	7.32
		(4) Wearing Coat including expansion joints.	0.99
		(5) Miscellaneous Items like hand rails, crash barriers, road markings etc.)	0.69
		(6) Wing walls/return walls	NIL
		(7) Approaches (including Retaining walls/ Reinforced Earth wall, stone pitching and protection works)	70.28
Other works	13.90	(i) Toll Plaza	NIL
		(ii) Road side drains	28.74
		(iii) Road signs, markings, km stones, safety devices, ….	29.51
		(iv) Project facilities	
		(a) Bus Bays & Bus Shelter	1.68
		(b) Truck lay-byes	NIL
		(c) Rest areas	NIL
		(d) Electrical Works	3.33
		(e) Junctions	17.32
		(f) others	NIL
		(v) Road side plantation	6.51
		(vi) Protection works other than elevated sections/ flyovers/grade separators and	NIL

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
		RORBs/RUBs.	
		(vii) Safety and traffic management during construction	NIL
		(viii) Maintenance of Existing Road	10.79
		(ix) Median & Island Filling	2.13

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	7.19	
(2) Sub Base Course	7.39	
(3) Non-Bituminous Base Course	8.13	
(4) Bituminous Base Course	15.07	
(5) Wearing Coat	6.18	
(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 culverts.
B.1- Reconstruction / New 2-Lane realignment/ bypass (Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 1(one) km. length whichever is less.
(1) Earthwork up to top of sub-grade	7.92	
(2) Sub Base Course	NIL	
(3) Non-Bituminous Base Course	18.41	
(4) Bituminous Base Course	0.94	
(5) Wearing Coat	19.01	
B.2- Reconstruction / New 2-		

Stage for Payment	Percentage weightage	Payment Procedure
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	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	0.80	
(2) Sub Base Course	1.20	
(3) Non-Bituminous Base Course	1.58	
(4) Bituminous Base Course	1.69	
(5) Wearing Coat	0.98	
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 5(five) 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 culvert.
Culverts (Length <6 m)	3.52	

@. 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	24.02	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	22.48	(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.	14.79	(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. 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	25.75	(ii) **Super-structure:**

Stage for Payment	Percentage weightage	Payment Procedure
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.		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.
(4) **Approaches:** On completion of approaches including retaining walls, stone pitching, protection works complete in all respect and fit for use.	4.78	(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.
(5) **Guide Bunds and River Training works :** On completion of Guide Bunds and river Training works complete in all respects	8.18	(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 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	NIL	

Stage for Payment	Percentage weightage	Payment Procedure
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.		(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 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

Stage for Payment	Percentage weightage	Payment Procedure
		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		
(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. 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

Stage for Payment	Percentage weightage	Payment Procedure
		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 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.
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 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

Stage for Payment	Percentage weightage	Payment Procedure
		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 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.

Stage for Payment	Percentage weightage	Payment Procedure
		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. 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.

Stage for Payment	Percentage weightage	Payment Procedure
		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	9.57	(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 foundation, the trigger of first payment shall include load testing also where specified.
(2) Sub-structure	11.15	(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

Stage for Payment	Percentage weightage	Payment Procedure
		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)	7.32	(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.	0.99	(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.)	0.69	(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)	70.28	(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 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	28.74	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
(iii) Road signs, markings, km stones, safety devices, ….	29.51	

Stage for Payment	Percentage weightage	Payment Procedure
		than 10% (ten per cent) of the total length.
(iv) Project facilities		Payment shall be made on pro rata basis for completed facilities.
(a) Bus Bays & Bus Shelter	1.68	
(b) Truck lay-byes	NIL	
(c) Rest areas	NIL	
(d) Electrical Works	3.33	
(e) Junctions	17.32	
(f) others	NIL	
(v) Road side plantation	6.51	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	10.79	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	2.13	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.