

Schedules

Schedule-A

(See Clauses 2.1 and 8.1)

Site of the Project

1 The Site

- (i) Site of the [Two-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.
- (i) 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

[Note: 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. All the chainages/location referred to in Annex-I to Schedule-A shall be existing chainages.]

1. Site

The Site starts at Beltoli (junction with SH-5) near Bilasipara and ends at Jalukbari interchange in Guwahati. The total length of the existing road stretch is 215.578 km. The project road is divided into 16(sixteen) packages. The PKG-6 of the project road starts from end of Jogighopa Bridge near Pancharatna and ends at Nichinta after Sagunbashi forest (Ex.Ch.75.330km to Ex.Ch.88.00km). The entire package falls under Goalpara district of Assam.

The land, carriageway and structures comprising the Site are described below.

2. Land

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

SL No.	Chainage (KM)		Right of Way(m)
	From	To	
1	75.330	75.500	71
2	75.500	75.750	90
3	75.750	76.000	88
4	76.000	76.250	88
5	76.250	76.500	19
6	76.500	76.750	10
7	76.750	77.000	11
8	77.000	77.250	18
9	77.250	77.500	18
10	77.500	77.750	17
11	77.750	78.000	17
12	78.000	78.250	15
13	78.250	78.500	80
14	78.500	78.750	85
15	78.750	79.000	80
16	79.000	79.250	47
17	79.250	79.500	72
18	79.500	79.750	53
19	79.750	80.000	12
20	80.000	80.250	12
21	80.250	80.500	12

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode.

SL No.	Chainage (KM)		Right of Way(m)
	From	To	
22	80.500	80.750	13
23	80.750	81.000	13
24	81.000	81.250	13
25	81.250	81.500	13
26	81.500	81.750	41
27	81.750	82.000	39
28	82.000	82.250	40
29	82.250	82.500	39
30	82.500	82.750	42
31	82.750	83.000	21
32	83.000	83.250	12
33	83.250	83.500	12
34	83.500	83.750	12
35	83.750	84.000	12
36	84.000	84.250	14
37	84.250	84.500	12
38	84.500	84.750	12
39	84.750	85.000	13
40	85.000	85.250	12
41	85.250	85.500	24
42	85.500	85.750	24
43	85.750	86.000	35
44	86.000	86.250	28
45	86.250	86.500	26
46	86.500	86.750	24
47	86.750	87.000	26
48	87.000	87.250	27
49	87.250	87.500	14
50	87.500	88.000	13

3. Carriageway

The present carriageway of the Project Highway consists two Lane with earthen shoulder configuration from Ex.Ch.75.330km to Ex.Ch.88. 000km.The type of the existing pavement of the section is flexible.

4. Major Bridges

The Site includes the following Major Bridge: -

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	Super structure			
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	Super structure		
Nil					

7. Minor bridges

The Site includes the following minor bridges:

S. No.	Chainage (km)	Type of Structure			No. of Spans with span length (m)	Width (m)
		Foundation	Sub- structure	Super-structure		
1	82.121	-	-	-	8X1.2	22.3
2	84.178	-	RCC	RCC Slab	3 x 8.3	11.9
3	86.343	-	RCC Wall	RCC Slab	3 x 6.4	9.2

8. Railway level crossings

The Site includes the following railway level crossings:

Sl. No.	Chainage (km)	Location	Remarks
Nil			

9. Under passes (vehicular, non-vehicular)

The Site includes the following underpasses:

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilaspura- Guwahati road (NH 17) in the state of Assam on EPC mode.

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.	Chainage (km)	Type of Culvert	Span/Opening with Span Length	Width of Culvert (m)
1	75.759	Pipe	1X0.6 m Dia	16
2	75.806	Pipe	1X0.6 m Dia	16.6
3	75.945	Pipe	2X1.8 m Dia	45
4	75.97	Pipe	1X0.8 m Dia	17
5	76.113	Pipe	1X1.8 m Dia	53
6	76.225	Pipe	2X1.8 m Dia	48
7	76.436	Pipe	2X1.6 m Dia	47
8	78.87	Pipe	2X1.8 m Dia	56.6
9	81.466	Pipe	2X1.0 m Dia	25.2
10	81.683	Pipe	2X1.0 m Dia	22.3
11	81.81	Pipe	2X1.0 m Dia	22.2
12	82.592	Pipe	1X0.9 m Dia	11.9
13	82.75	Pipe	2X1.0 m Dia	10.2
14	83.105	Pipe	2X1.0 m Dia	11.6
15	83.28	Pipe	1X0.9 m Dia	22.6
16	83.42	Pipe	1X0.9 m Dia	26.4
17	83.636	Pipe	1X0.9 m Dia	30
18	84.338	Pipe	2X1.0 m Dia	13.7
19	84.537	BOX	1X1.5m	10.2
20	84.775	Pipe	2X1.0 m Dia	10.2
21	85.407	Pipe	1X0.6 m Dia	22.8
22	85.767	BOX	1X1.5m	13.6

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 trucklay byes are as follows:

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

13. Roadside drains

The details of the roadside drains are as follows:

Sl. No.	Location		Type	
	From km	To km	Masonry/cc (Pucca)	Earthen (Kutchha)
NIL				

14. Major junctions

The details of major junctions are as follows:

S. No.	Location		At grade	Separated	Category of Cross Road			
	From km	to km			NH	SH	MDR	Others
1	79.900		✓			SH-46		
2	85.556		✓			SH-12A		

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

15. Minor junctions

The details of the minor junctions are as follows:

Sl. No.	Location		Type	
	From km	To km	T-Junction	Cross Road
1	80.175		Y	Leads to Pancha Ratna NC
2	80.300		Y	Leads to Pancha Ratna NC
3	82.700		Y	Leads to Hadalapara
4	82.727		Y	Leads to Hadalapara
5	82.800		Y	Leads to Hadalapara
6	84.410		Y	Leads to Petrol Pump
7	84.490		Y	Leads to Petrol Pump
8	84.554		Y	Leads to Kalyanpur
9	84.570		Y	Leads to Kalyanpur NC
10	85.110		Y	Leads to Kalyanpur
11	85.150		Y	Leads to Kalyanpur
12	85.630		Y	Leads to Kochpara
13	85.660		Y	Leads to Gendra
14	85.810		Y	Leads to Kochpara

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode.

Sl. No.	Location		Type	
	From km	To km	T-Junction	Cross Road
15	86.520		Y	Leads to Chamaguri (LHS), Budhi Para (RHS),
16	86.960		Y	Leads to Jungle Block
17	87.200		Y	Leads to Budhipara
18	87.570		Y	Leads to santipur
19	87.620		Y	Leads to Nichinta

16. Bypasses

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

S.No.	Name of (town)	Chainage(km)		Length (in Km)
		From (km)	to (km)	
Nil				

17. Other structures

[Provide details of other structures, if any.]

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:

Sr. No.	From km To km	Length (Km)	Proposed ROW (m)	Date of providing ROW*
1	2	3	4	5
Full Right of Way (full width)	Excluding Bypass & Realignment, Bus bays, Truck Lay Bye	9.400	Rural Area =30- 40m Built-up Area=35 m VUP location =45 m Forest Area=30 m	At appointed date
Balance Right of Way (Width)	Realignment	2.900	35	Within 90 days of declaration of appointed date
	Bypass	-	-	
	Bus bays	-	-	
	Truck Lay Bye	-	-	

*The dates specified herein shall in no case be beyond 150 (one hundred and fifty) days after the Appointed Date.

Annex-III

(Schedule-A)

Alignment Plans

The existing alignment of the Project Highway shall be modified in the following sections as per the alignment plan 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, he 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,
 - (iii) 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.
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Annex - IV

(Schedule-A)

Environment Clearances

The following environment clearances have been obtained: [***]

The following environment clearances are awaited: [***]

Sr. No.	Clearances	Present Status
1	Environment clearance	Not Required
2	Forest Clearance	Forest proposal uploaded in forest portal
3	Wildlife Approval	Not Required

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-Laning and Strengthening] 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 [Four-Laning]

[Note: 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:84-2014& 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) Four-Laning [with] paved shoulders shall be undertaken. The paved carriageway shall be [7(seven)x2m] wide in accordance with the typical cross section's drawings in the Manual.

Provided that in the built-up areas [refer to paragraphs 2.1 (ii) (a) of the Manual and provide necessary details]: the width of the carriageway shall be as specified in the following table:

Sl. No.	Built-up stretch (Township)	Location	Width (m)	Typical Cross Section
1	Ch.81.540km to Ch.82.500km	Solmari	Roadway Width=35m	TCS-4E

(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 hr for plain/ rolling terrain] and Rulling design speed of [100 km per hr for plain/ rolling terrain

(iii) Improvement of the existing road geometrics

[Refer to paragraph 2.1 (v) of the Manual and provide details]

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 beprovided:

Sl. No.	Stretch (from km to km)	Type of deficiency	Remarks
1	71.800km to 72.350km	-	No Curve improvent is required. (Proposed Alignment Follows Existing alignment)
2	72.350km to 74.900km	-	Realignment Stretch
3	74.900km to 84.100km	-	No Curve improvent is required. (Proposed Alignment Follows Existing alignment)

(iv) Right of Way

[Refer to provision of relevant Manual]. Details of the Right of Way are given in Annex-II of Schedule-A.

v) Type of shoulders

[Refer to paragraph 2.5.2 of the Manual and specify]

(a) In VUP locations. Drain cum footpaths/fully paved shoulders shall be provided in the following stretches:

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/ footpaths	Reference to cross section
1	Km 75.475 to km 76.325	2 X 1.5 m Paved Shoulder/ 2 X 1.5m width Drain Cum Footpath	TCS-6A
2	Km 81.540 to km 82.500	2 X 2.5m Paved Shoulder/ 2 X 1m width Drain Cum Footpath	TCS-4E

(b) In open country, [paved shoulders of 2.5 m width shall be provided and balance 1.5m width shall be covered with 150 mm thick compacted layer of granularmaterial].

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

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 clearance at underpasses and provision of guard rails/crash barriers shall be as per requirements specified in the relevant Manual.

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

Sl. No.	Location (Chainage)	Span/opening(m)	Remarks
NIL			

- (vii) Lateral and vertical clearances at overpasses

(a) Lateral and vertical clearances at overpasses shall be as per requirements specified in the relevant 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

Service roads shall be constructed at the locations and for the lengths indicated below:
[Refer requirements specified in the relevant Manual]

Sl. No.	Location of service road (from km to km)	Right hand side (RHS)/Left hand side (LHS)/or Both sides	Length (km) of service road
1	Km 75.475 to km 76.325	Both side	850
2	Km 81.540 to km 82.500	Both side	960

- (ix) Grade separated structures

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

[Refer to requirements specified in the relevant Manual]

Sl. No.	Location of Structure (VUP)	Length(m)	Number and length of spans (m)	Approach gradient	Remarks
1	75.994	30	1 x 30m	2.50%	PSC T 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:[Refer to provision of the Manual and specify the type of vehicular underpass/ overpass structure and whether the cross road is to be carried at the existing Level. Raised or lowered]

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

- (x) Cattle and pedestrian underpass /overpass

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

Sl.No.	Location	Type of crossing
Nil		

- (xi) Typical cross-sections of the Project Highway

[Give typical cross-sections of the Project Highway by reference to the Manual]
As per attached Drawings

TCS Type	Description	Length(m)
TCS 1A	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN RURAL AREA ECCENTRIC WIDENING AND OVERLAY OVER EXISTING PAVEMENT	5140
TCS 1B	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN RURAL AREA (RECONSTRUCTION OVER EXISTING PAVEMENT WITH PARTIAL GRANULAR LAYER SCARIFICATION)	1050
TCS 3	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN REALIGNMENT.	2900
TCS 4E	TYPICAL CROSS SECTION OF 4 LANE CARRIAGEWAY WITH BOTH SIDE SERVICE ROAD IN BUILT-UP AREA FOLLOWS EXISTING 2- LANE ROAD (RECONSTRUCTION OVER EXISTING PAVEMENT WITH PARTIAL GRANULAR LAYER SCARIFICATION).	960
TCS 5A	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN RURAL AREA IN FOREST STRETCH OVERLAY OVER EXISTING PAVEMENT.	1400
TCS 6A	TYPICAL CROSS SECTION OF 4 LANE DIVIDED CARRIAGEWAY WITH PAVED SHOULDER IN VUP/ROB APPROACHES WITH BOTH SIDE SERVICE ROAD IN BUILT UP/ RURAL AREA FOLLOWS EXISTING 2-LANE ROAD (CONCENTRIC WIDENING).	850
Total Length=		12300

Chainage (m)		Length	TCS No
From	To.	(m)	
71800	72250	450	TCS 1A
72250	75150	2900	TCS 3
75150	75475	325	TCS 1A
75475	76325	850	TCS 6A
76325	76600	275	TCS 1A
76600	77650	1050	TCS 1B
77650	81540	3890	TCS 1A
81540	82500	960	TCS 4E
82500	83900	1400	TCS 5A
83900	84100	200	TCS 1A
Total Length =		12300	

4. Intersections and Grade Separators

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

[Refer to provision of the relevant Manual and specify the requirements. Explain where necessary with drawings/sketches/general arrangement]

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

- (i) At-grade intersections

Major Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	Solmari (Ch.81.600km)	3-legged	Junction with SH-12A

Minor Intersections

Sl. No.	Location		Type	
	From km	To km	T-Junction	Cross Road
1	76.260		Y	Leads to Pancha Ratna NC
2	76.400		Y	Leads to Pancha Ratna NC
3	78.800		Y	Leads to Hadalapara
4	78.820		Y	Leads to Hadalapara
5	78.900		Y	Leads to Hadalapara
6	80.500		Y	Leads to Petrol Pump

Sl. No.	Location		Type	
	From km	To km	T-Junction	Cross Road
7	80.570		Y	Leads to Petrol Pump
8	80.640		Y	Leads to Kalyanpur
9	80.660		Y	Leads to Kalyanpur NC
10	81.200		Y	Leads to Kalyanpur
11	81.250		Y	Leads to Kalyanpur
12	81.730		Y	Leads to Kochpara
13	81.750		Y	Leads to Gendra
14	81.900		Y	Leads to Kochpara
15	82.600		Y	Leads to Chamaguri (LHS), Budhi Para (RHS),
16	83.050		Y	Leads to Jungle Block
17	83.270		Y	Leads to Budhipara
18	83.650		Y	Leads to santipur
19	83.700		Y	Leads to Nichinta

(ii) Grade separated intersection with/with out ramps

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

4. Road Embankment and Cut Section

- (i) Widening and improvement of the existing road embankment/cuttings and construction of new road embankment/cuttings shall conform to the Specifications and Standards given in Section 4 of the Manual and the specified cross-sectional details. Deficiencies in the plan and profile of the existing road shall be corrected.
- (ii) Raising of the existing road [Refer to provision of the relevant Manual and specify sections to be raised]

The existing road shall be raised in the following sections:

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

5. Pavement Design

- (i) Pavement design shall be carried out for a design life of 20 years considering 33 MSA.

(ii) Type of pavement

[Refer to the provision of relevant Manual and state specific requirement, if any, of providing cement concrete pavement.]

Flexible pavement shall be designed as per IRC: 37-2018(Fourth Revision) and the details given below

<p><u>For Overlay</u> BC-40mm DBM-50mm DBM (Profile Corrective Course)-50mm Total -140 mm</p>	<p><u>For New Construction/Widening/RE Wall portion</u> BC -40 mm DBM -60 mm WMM - 100 mm CT Base-100 mm CT Sub-Base- 200 mm Total -500 mm</p>
<p><u>For Existing Reconstruction</u> BC -40 mm DBM -60 mm RAP-110 mm GSB-300mm Total -510 mm</p>	<p><u>For Existing Reconstruction</u> BC -40 mm DBM -100 mm WMM I - 125 mm WMM II - 125 mm GSB- 200 mm Total - 590 mm</p>

(iii) Design requirements

[Refer to the provision of relevant Manual and specify design requirements and strategy]

(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 any thing to the contrary contained in this Agreement or the Manual. The Contractor shall design the pavement for design traffic of 33 million standard axles.

(iv) Reconstruction of stretches

[Refer to the provision of relevant Manual and specify the stretches, if any, to be reconstructed.]

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

SL NO.	Stretch from Km to Km	TCS Type
1	76.600km to 77.650km	TCS 1B
2	81.540km to 82.500km	TCS 4E

6. Roadside Drainage

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

RCC Cover drain has been proposed in built up area for the Project Highway has been provided in the table given below:

RCC Covered Drain

Chainage (m)		Side	Length (m)
From	To		
75475	76325	Both	2x850
81540	82500	Both	2x960
Total length=			3620 m

7. Design of Structures

(i) General

(a) All bridges culverts and structures shall be designed and constructed in accordance with provision of the relevant Manual and shall conform to the cross-sectional features and other details specified therein.

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

[Refer to provision of the relevant Manual and specify the width of carriageway of new bridges and structures of more than 60(sixty)meter length. If the carriageway width is different from 7.5(seven point five) meters in the table below.]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
1	78.214	Carriageway Width = 9.5 m
2	80.265	
3	82.346	

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

[Refer to provision of the relevant Manual and provide details of new Structures with footpath]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features*
Nil		

- (d) All bridges shall be high-level bridges.

[Refer to provision of the relevant Manual and state if there is any exception]

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

[Refer to provision of the relevant Manual and provide details]

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

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

(iii) 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:

[Refer to provision of the relevant Manual and provide details]

Sl. No.	Culvert location (Design Ch.) (Km)	Span of existing culvert (m)	Span of proposed culvert (m)	Repairs to be carried out [specify]
1	71.824	1X0.6 M Dia	1 X 1.0M Dia	Reconstruction
2	71.871	1X0.6 M Dia	1 X 1.0M Dia	Reconstruction
3	72.035	1X0.8 M Dia	1 X 1.0M Dia	Reconstruction
4	77.770	2X1.0 M Dia	1 X 2.0 X 3.0	Reconstruction
5	77.900	2X1.0 M Dia	1 X 2.0 X 3.0	Reconstruction
6	78.682	1X0.9 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
7	78.840	2X1.0 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
8	79.195	2X1.0 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
9	79.371	1X0.9 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
10	79.508	1X0.9 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
11	79.723	1X0.9 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
12	80.425	2X1.0 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
13	80.864	2X1.0 M Dia	1 X 2.0 X 2.0_EC	Reconstruction
14	81.491	1X0.6M Dia	1 X 2.0 X 3.0	Reconstruction

*[Specify modifications, if any, required in the road level, etc.]

- (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 provision of the relevant Manual. Repairs and strengthening of existing structures where required shall be carried out.

Sl. No.	Culvert location (Design Ch.) (Km)	Span of existing culvert (m)	Span of proposed Culvert (m)	Repairs to be carried out [specify]
1	72.009	2X1.8 M Dia	2 X 1.8M Dia	Right side Widening
2	72.178	1X1.8 M Dia	1 X 1.8M Dia	Right side Widening
3	72.288	2X1.8 M Dia	2 X 1.8M Dia	Right side Widening
4	72.498	2X1.6 M Dia	2 X 1.6M Dia	Right side Widening
5	74.956	2X1.8M Dia	2 X 1.8M Dia	Right side Widening
6	77.554	2X1.0 Dia	2 X 1.0M Dia	Left side Widening
7	80.625	1X1.5	1 X 2.0 X 2.3	Left side Widening
8	81.856	1X1.5M	1 X 2.0 X 1.5	Both side Widening

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

Sl. No.	Culvert Location (Design Ch.) (Km)	Span /Opening (m)	Remarks*
1	72.723	1 X 4.0 X 3.0_EC	Single Cell
2	72.983	1 X 2.0 X 3.0	Single Cell
3	73.211	1 X 2.0 X 2.0_EC	Single Cell
4	73.290	1 X 2.0 X 2.0_EC	Single Cell
5	73.394	1 X 2.0 X 2.0_EC	Single Cell
6	73.481	1 X 2.0 X 2.0_EC	Single Cell
7	73.803	1 X 2.0 X 2.0_EC	Single Cell
8	73.963	1 X 2.0 X 2.0_EC	Single Cell
9	75.146	1 X 2.0 X 2.0	Single Cell
10	75.457	1 X 2.0 X 2.0_EC	Single Cell
11	76.340	1 X 2.0 X 2.0	Single Cell
12	76.55	1 X 2.0 X 2.0	Single Cell
13	77.334	1 X 2.0 X 2.0	Single Cell
14	78.376	1 X 2.0 X 3.0	Single Cell
15	79.976	1 X 2.0 X 2.0	Single Cell
16	81.161	1 X 2.0 X 2.0	Single Cell
17	82.516	1 X 2.0 X 2.0	Single Cell
18	83.166	1 X 2.0 X 2.0	Single Cell

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

[Refer provision of the relevant Manual and provide details]

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode.

Sl.No.	Location at km	Type of repair required
1	72.009	Dismantling of existing Head Wall
2	72.178	
3	72.288	
4	72.498	
5	74.956	
6	77.554	
7	80.625	Dismantling of existing Wing Wall
8	81.856	Dismantling of existing Wing Wall, Dismantling of parapet wall, Dismantling of deck slab for providing stiffening beam & Patching of damaged concrete surface of Deck Slab

- (f) Floor protection works shall be as specified in the relevant IRC Codes and Specifications.
- (iii) Bridges
- (a) Existing bridges to be re-constructed/widened

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

[Refer provision of the relevant Manual and provide details]

Sl. No.	Bridge location (Design Ch.) (km)	Salient details of existing bridge		Salient details of proposed bridge		Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Remarks
		Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)	Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)		
1	78.214	HUME PIPE	8X1.2	RCC Box	3 x 6 x 6	-	Reconstruction
2	82.346	RCC Slab	3 x 6.4	RCC Box	3 x 6 x 4	-	Reconstruction

*Attach GAD

(ii) The following narrow bridges shall be widened:

Sl. No.	Bridge location (Design Ch.) (km)	Salient details of existing bridge		Salient details of proposed bridge		Adequacy or otherwise of the existing waterway, vertical clearance etc.*	Remarks
		Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)	Type of Structures	Span Arrangement and Total Vent way (No. x Length) (m)		
Nil							

@ Attach cross-section

(b) Additional new bridges

[Specify additional newbridges if required. And attach GAD]

New bridges at the following locations on the Project Highway shall be constructed. GADs for the new bridges are attached in the drawings folder.

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
1	80.265	3 x 8 x 3.5	Additional 2 Lane

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

[Refer provision of the relevant Manual and provide details:]

Sl.No.	Location at km	Remarks
Nil		

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

[Refer to provision of the relevant Manual and provide details]

Sl.No.	Location at km	Remarks
Nil		

(e) Drainage system for bridge decks

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

(f) Structures in marine environment

[Refer to provision of the relevant Manual and specify the necessary measures/treatments for protecting structures in marine environment. Where applicable]

(iv) Rail-road bridges

(a) Design construction and detailing of ROB/RUB shall be as specified in provision of the relevant Manual [Refer to provision of the relevant Manual and specify modification, if any]

(b) Road over-bridges

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

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

(c) Road under-bridges

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

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

(v) Grade separated structures

[Refer provision of the relevant Manual]

The grade separated structures shall be provided at the locations and of the type and length specified in paragraphs 2(ix) and 3 of this Annex-I.

(vi) Repairs and strengthening of bridges and structures

[Refer to provision of the relevant Manual and provide details]

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	80.265	Patching of Concrete Surface & Painting on concrete surface

(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 provisions of relevant Manual.

Sl No.	Traffic Signages, Road Marking and other appurtenances	unit	Quantity
1	Right Hand Side Curve (900 mm Triangular)	No.	11
2	Left Hand Side Curve(900 mm Triangular)	No.	7
3	School (900 mm Triangular)	No.	10
4	Side road left(900 mm Triangular)	No.	22
5	Side road right(900 mm Triangular)	No.	14
6	Cross Road(900 mm Triangular)	No.	4
7	Hospital	No.	0
8	Petrol pump/ Filling facility (800x600 rectangular)	No.	2
9	Bus Stop (800x600 rectangular)	No.	4
10	Direction Sign <.0.9 sqm	No.	24
11	Direction Sign >0.9 sqm	No.	5
12	Stop Sign (900 mm Octagonal)	No.	37
13	Speed limit (600mm Circular)	No.	1
14	Horn prohibited (600mm Circular)	No.	10
15	Hazard Marker (one way) (900x300 mm rectangular)	No.	176
16	Object Marker (one way)(900x300 mm rectangular)	No.	9
17	Object Marker (Two way) (900x450 mm rectangular)	No.	3

Sl No.	Traffic Signages, Road Marking and other appurtenances	unit	Quantity
18	Pedestrian Crossing (900 mm Tringular)	No.	27
19	T Intersection (900 mm Tringular)	No.	1
20	U-Turn prohibited (600mm Cicular)	No.	5
21	Rumble strip (900 mm Tringular)	No.	3
22	Road Marking	Sqm.	9800
23	Road Delineators	no	338
24	Road Studs	no	1048
15	W-Beam Crash Barrier	Rm	6400

(ii) Specifications of the reflective sheeting. [Refer to provision of relevant Manual and specify]

9. Roadside Furniture

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

(ii) Overhead traffic signs: location and size

[Refer to the provision of relevant Manual and provide details]

Sl. No.	Location (Km)	Size
NIL		

10. Compulsory Afforestation

[Refer to provision of relevant Manual and specify the number of trees which are required to be planted by the concerned department as compensatory afforestation.]

11. Hazard Location

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

a) Reinforced Earth wall

Location		Length (km)
From(km)	To(km)	
75.475	76.325	0.850

b) Length of Chute Drain=464m

12. Special Requirement for Hill Roads

[Refer to the provision of relevant Manual and provide details where relevant and required.]

13. Change of Scope

The length of Structures and bridges specified here in above shall be treated asan approximate assessment. The actual lengths as required on the basis of detailed investigations shall be determined by the Contractor inaccordance with the Specifications and Standards. Any variations in the lengths specified in this Schedule- B shall not constitutea Change of Scope save and exceptany 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:

Sl. No	Description	Unit	Nos.
1	Electric Post	Nos.	35
2	Lamp post	Nos.	5
3	11kv Post	Nos.	92
4	Telephone Post	Nos.	2
5	Transformer	Nos.	8
6	OFC	Mtr	10106

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (DesignCh.71.800km to Ch.84.100km) of Tulungia- Jogighopa Bridge Approach Section (Package-6) of Bilaspura- Guwahati road (NH 17) in the state of Assam on EPC mode.

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[s]
- (b) Roadside furniture;
- (c) Pedestrian facilities;
- (d) Tree plantation;
- (e) Truck Lay byes;
- (f) Bus-bays and passenger shelters;
- (g) Rest areas; and
- (h) Others to be specified

2. Description of Project Facilities

Each of the Project Facilities is described below:

a) Toll Plaza:-

Sl. No.	Design Chainage (km)	Name of the Place
1	73.465	Near Khar Boja

Note: Provide adequate details of each Project Facility to ensure their design and completion in accordance with the project-specific requirements and the provisions of the Manual.

b) Roadside furniture: -

Sl. No	Description	Location	Design Standard
1	Traffic sign & pavement marking	Entire Length (As per Schedule B)	As per Manual
2	Km Stone, 5th kilometre stone	Entire Length	As per Manual
3	Boundary Stone	Entire Length	As per Manual
4	Roadside Delineator, marker & Road Stud	As per Schedule B	As per Manual
5	Metal beam crash barrier	As per Schedule B	As per Manual

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (DesignCh.71.800km to Ch.84.100km) of Tulungia- Jogighopa Bridge Approach Section (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode.

C) Pedestrian Facility: -

Pedestrian facilities in the form of foot path shall be provided in the built-up area (refer typical cross – section drawing). Pedestrian facilities shall be provided at the locations of Built up sections in order to ensure safety of pedestrians while crossing in consultation with NHIDCL.

d) Truck Lay bye: -

Sl. No.	Truck lay bye Chainage (Both Side)	Name of the Place
NIL		

e) Bus Bay with Passenger shelter: -

Sl. No.	Project Facility	Location (km)	Name of the Place
1	Passenger shelter	82.860 (Both Side)	Budhi Para

f) Rest Areas

Sl. No.	Rest Area Chainage	Name of the Place
Nil		

g) Roadside Amenities

Nil

h) Others to be specified

Street Lighting:

Total 128 Nos. Street lighting shall be provided in junction, Bus , Passenger Shelter, Built up & VUP locations.

Utility Duct:

Utility duct has been proposed at Median center and both edge of the carriageway.

Note: Provide adequate details of each Project Facility to ensure their design and completion in accordance with the project-specific requirements and the provisions of the Manual.

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (DesignCh.71.800km to Ch.84.100km) of Tulungia- Jogighopa Bridge Approach Section (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode.

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 Lanning of Highways (IRC: SP: 84-2014), referred to herein as the Manual]

[Note: Specify the relevant Manual, Specifications and Standards]

Annex - I

(Schedule-D)

Specifications and Standards for Construction

1. Specifications and Standards

All Material works and construction operations shall conform to the Manual of Specifications and Standards for [Four-Lanning of Highways (IRC: SP:84-2014)], 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) [Not withstanding 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:]

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Schedule-H

(See Clauses 10.1(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	58.78 %	A- Widening and strengthening of existing road	
		(1) Earthwork up to top of the sub-grade	4.56%
		(2) Sub-base Course	12.63%
		(3) Non bituminous Base course	7.52%
		(4) Bituminous Base course	15.96%
		(5) Wearing Coat	9.03%
		(6) Widening and repair of culverts	2.12%
		B.1-Reconstruction/New 2-Lane Realignment /Bypass(Flexible Pavement)	
		(1) Earthwork up to top of the sub-grade	12.14%
		(2) Sub-base Course	5.41%
		(3) Non bituminous Base course	3.11%
		(4) Bituminous Base course	3.19%
		(5) Wearing Coat	2.3%
		B.2-Reconstruction/New 8-Lane Realignment/ Bypass(Rigid Pavement)	
		(1) Earthwork up to top of the sub-grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) DryLean Concrete (DLC) Course	[Nil]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		C.1-Reconstruction/ New Service Road(Flexible Pavement)	
		(1) Earthwork up to top of the sub-grade	0.4%
(2) Sub-base Course	1.68%		
(3) Non bituminous Base course	1.63%		
(4) Bituminous Base course	1.3%		
(5) Wearing Coat	1.07%		

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
		C.2- Reconstruction/New Service road(Rigid Pavement)	
		(1) Earthwork up to top of the sub-grade	[Nil]
		(2) Sub-base Course	[Nil]
		(3) DryLean Concrete (DLC) Course	[Nil]
		(4) Pavement Quality Control (PQC) Course	[Nil]
		D- Reconstruction & New Culverts on existing road, realignments, bypasses Culverts (length <6m)	15.95%
Minorbridge/ Underpasses/ Overpasses	7.01 %	A.1-widening and repairing of Minor Bridges (length >6 m<60m)	
		Minor Bridges	0.44%
		A.2- New Minor bridges (length >6 mand<60m)	
		(1) Foundation : On completion of the foundation work .	2.065%
		(2)Sub-Structure: On completion of the Sub structure work	30.08%
		(3) Super-structure:On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road,signs & markings, tests on completion etc. complete in all respect.	17.35%
		(4)Approaches:On completion of approaches including Retainingwalls, stonepitching, protection works complete in all and fit for use	7.4%
		(5) GuideBundsand River Training Works:On completion of Guide Bunds and river training works complete in all respects	[Nil]
		B.1- Widening and repairs 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.	24.15%

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
		(7)Guide bunds, River Training works etc.	[Nil]
		(8)Approaches (including Retaining walls, stone pitching and protection works)	[Nil]
		B.1-Widening and repairs of (a) ROB (b) RUB	
		(1) Foundations	[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) incase of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, 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	
		(1)Foundations	[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) incase of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, 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.1- Widening and repair of Elevated Section/Flyovers/Grade Separators	
		(1) Foundations	[Nil]
		(2) Sub-Structure	[Nil]

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
		(3)Super-Structure(Including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, 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) Foundations	[Nil]
		(2) Sub-Structure	[Nil]
		(3)Super-Structure(Including bearings)	[Nil]
		(4)Wearing Coat including expansion joints	[Nil]
		(5) Miscellaneous Items like handrails, crash barrier, 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	34.21 %	(i) Toll Plaza	43.22%
		(ii) Road side drains	9.97%
		(iii) Road signs,markings,km stones,safety devices etc	8.76%
		(iv) Project facilities	
		a) Bus Bays	[Nil]
		b) Truck Lay-byes	[Nil]
		c) Passenger Shelter	0.09%
		d) Rest Area	[Nil]
		e) Road Side Aminities	[Nil]
		f) Street Light	0.76%
		g) Utility Duct	6.29%
		(v) Road side Plantation	[Nil]
		(vi)Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[Nil]
		(vii) Safety &Traffic Management during const.	[Nil]
		(viii) Junction	
		(ix) Toe Wall	[Nil]

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Item	Weightage in percentage to the Contract Price	Stage for Payment	Percentage weightage
1	2	3	4
		(x) Retaining Wall	[Nil]
		(xi) Boundarywall	[Nil]
		(xii) Site Clearance & Dismanteling	0.93%
		(xiii) Reinforced Earth Wall	24.6%
		(xiv) Junction	3%
		(xv) Seeding & Mulching	2.08%
		(xvi) Chute Drain	0.3%
		(xvii) Ground Improvement Works (Sand Pile)	[Nil]

1.3 Procedure of estimating the value of work done

1.3.1 Roadworks

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

Table 1.3.1

Stage of Payment	Percentage weightage	Payment Procedure
A- Widening & Strengthening of 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 the sub-grade	4.56%	
(2) Sub-base Course	12.63%	
(3) Non bituminous Base course	7.52%	
(4) Bituminous Base course	15.96%	
(5) Wearing Coat	9.03%	
(6) Widening and repair of culverts	2.12%	Cost of ten completed culverts shall be determined on pro rata basis with respect to the total number of culverts.
B.1- Reconstruction/New 2-Lane Realignment/Bypass(Flexible Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5(five) km length, whichever is less.
(1) Earthwork up to top of the sub-grade	12.14%	
(2) Sub-base Course	5.41%	
(3) Non bituminous Base course	3.11%	
(4) Bituminous Base course	3.19%	
(5) Wearing Coat	2.3%	
B.2- Reconstruction/New 8-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 upto top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC) Course	[Nil]	

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Stage of Payment	Percentage weightage	Payment Procedure
(4) Pavement Quality Control (PQC) Course	[Nil]	
C.1- Reconstruction/New Service Road/ Slip 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 upto top of the sub-grade	0.4%	
(2) Sub-base Course	1.68%	
(3) Non bituminous Base course	1.63%	
(4) Bituminous Basecourse	1.3%	
(5) Wearing Coat	1.07%	
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)Earthworkuptotopofthesub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) DryLean Concrete (DLC)Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
D- Reconstruction & New Culverts on existingroad,realignments, bypasses		Cost of each culverts 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 <6m)	15.95%	

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

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

Where,

P = Contract Price

L = Total length in km

Similarly, the rates perkm for otherstages shallbe 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 theContract 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

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 75.330km to Ch.88.000 km (Design Ch.71.800km to Ch.84.100km) of (Package-6) of Bilasipura- Guwahati road (NH 17) in the state of Assam on EPC mode

Stage of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m& <60m)	0.44%	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 the completion of widening & repair works of a minor bridge
A.2- New Minor Bridges (length>6m& <60m)		
(1)Foundation : On completion of the foundation work .	2.065%	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. 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 Sub structure work	30.08%	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 of sub-structure of each bridge.
(2)Super-structure:On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road,signs & markings, tests on completion etc. complete in all respect.	17.35%	Super-structure:Payment shall be made on pro-rata basis on completion of a stage i.e.completion of super structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(3)Approaches:On completion of approaches including Retaining walls, stone pitching, protection works complete in all and fit for use	7.4%	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	[Nil]	Guide Bunds and River Training Works: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of Guide Bund and River training Works in all respects as specified
B.1- Widening and repairs of underpasses/overpasses	[Nil]	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.

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Stage of Payment	Weightage	Payment Procedure
1	2	3
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.	24.15%	<p>Foundation: 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 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 Underpasses/Overpasses.</p> <p>In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.</p>
(2) Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect. Wearing Coat (a) in case of Overpass-wearing coat including expansion joints complete in all respects as specified and (b) in case of underpass-rigid pavement including drainage facility complete in all respects as specified.	18.5%	<p>Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure of at least one span in all respects as specified in the column of "Stage of Payment" in this sub-clause. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above</p>
(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]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

1.3.3 Major Bridge works, ROB/RUB and Structures.

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

Table 1.3.3

Stage of Payment	Weightage	Payment Procedure
A.1- Widening and repairs of Major Bridges		
(1)Foundation	[Nil]	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. Incase where load testing is required for foundation,the trigger of first payment shall include loadtesting also where specified.
(2)Sub-structure	[Nil]	Sub-structure:Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of majorbridge.
(3)Super-structure(including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e.completion of super- structure including bearings of atleast one span in all respects as specified.In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)WearingCoatincluding expansion joints	[Nil]	WearingCoat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crashbarriers,road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	Wingwalls/return walls:Payments shall be made on completion of all wing walls/returnwalls complete in all respects as specified.
(7)Guidebunds,River Trainingworks etc.	[Nil]	Guide Bunds, River Trainingworks: Payments shall be made on completion of all guidebunds/river training works etc. complete in all respects as specified.

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Stage of Payment	Weightage	Payment Procedure
(8) Approaches (including Retaining walls, stone pitching and protection works)	[Nil]	Approaches: Payments shall be made on pro rata basis on completion of 10% of the scope of each stage.
A.2-New Major Bridges		
(1) Foundation	[Nil]	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. 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]	Sub-structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of major bridge.
(3) Super-structure (including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/return walls	[Nil]	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]	Guide Bunds, River Training works: Payments 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]	Approaches: Payments shall be made on pro rata basis on completion of 10% of the scope of each stage.

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Bilaspura- Guwahati road (NH 17) in the state of Assam on EPC mode

Stage of Payment	Weightage	Payment Procedure
B.1- Widening and repairs of (a)ROB (b)RUB		
(1) Foundations	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m)of theROB/RUB.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. 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]	Sub-structure: Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e.not less than 25% of the scope of sub- structure of ROB/RUB.
(3) Super-Structure (Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e.completion of super- structure including bearings of at least one span in all respects as specified.In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(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]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) in case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road marking etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	Wing walls/return walls: Payments shall be made on completion of all wing walls/return walls complete in all respects as specified.

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 52.470km to Ch.71.500 km
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Stage of Payment	Weightage	Payment Procedure
(7) Approaches (Including Retaining walls, Stone Pitching and protection works)	[Nil]	Payments shall be made on prorata basis on completion of 20% of the total area.
B.2-NewROB/RUB		
(1) Foundation	[Nil]	Foundation: Cost of each ROB/RUB shall be determined on pro rata basis with respect to the total linear length (m) of the ROB/RUB. Payment against foundation shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of foundation of the ROB/RUB.
(2) Sub-structure	[Nil]	Sub-structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. Not less than 25% of the scope of sub-structure of ROB/RUB.
(3) Super-structure (including bearing)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(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]	Wearing Coat: Payment shall be made on completion (a) in case of ROB-wearing coat including expansion joints complete in all respects as specified and (b) In case of RUB-rigid pavement under RUB including drainage facility complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	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]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 52.470km to Ch.71.500 km
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Stage of Payment	Weightage	Payment Procedure
C.1- Widening and repairs of Elevated Section/ Flyovers/Grade Separators		
(1) Foundations	[Nil]	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. 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]	Sub-structure: Payment against sub-structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub-structure of structure.
(3) Super-Structure (Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e. completion of super-structure including bearings of at least one span in all respects as specified. In case of structures where pre-cast girders have been proposed by the Contractor, 50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4) Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. Complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	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]	Payment shall be made on pro-rata basis on completion of a stage in all respects as specified
C.2- New Elevated Section/ Flyovers/Grade		

Widening/Improvement to 4 (Four) Lane with Paved Shoulder from Ch. 52.470km to Ch.71.500 km
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Stage of Payment	Weightage	Payment Procedure
Separators		
(1) Foundations	[Nil]	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. 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]	Sub-structure:Payment against sub- structure shall be made on pro-rata basis on completion of a stage i.e. not less than 25% of the scope of sub- structure of structure.
(3)Super-Structure(Including bearings)	[Nil]	Super-structure: Payment shall be made on pro-rata basis on completion of a stage i.e.completion of super- structure including bearings of atleast one span in all respects as specified.In case of structures where pre-cast girders have been proposed by the Contractor,50% of the stage payment shall be due and payable on casting of girders for each span and balance 50% of the stage payment shall be made on completion of stage specified as above
(4)Wearing Coat including expansion joints	[Nil]	Wearing Coat: Payment shall be made on completion of wearing coat including expansion joints complete in all respects as specified.
(5) Miscellaneous Items like handrails, crash barrier, road markings etc.	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road markings etc. complete in all respects as specified.
(6) Wing walls/Return walls	[Nil]	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]	Payments shall be made on pro rata basis on completion of 20% of the total area.

Note: (1) In case of innovative 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.

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

1.3.4 Other works.

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

Table 1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) Toll Plaza	43.22%	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 plaza.
(2) Road side drains	9.97%	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 5 % (five percent) of the total length.
(3) Road signs, markings, km stones, safety devices etc	8.76%	
(4) Project Facilities		Payment shall be made on pro rata basis for completed facilities.
a) Bus Bays	[Nil]	
b) Truck Lay-byes	[Nil]	
c) Passenger Shelter	0.09%	
d) Rest Area	[Nil]	
e) Road Side Amenities	[Nil]	
f) Street Light	0.76%	
g) Utility Duct	6.29%	
(5) Retaining Wall	[Nil]	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 5% (five percent) of the total length.
(6) Road side Plantation including Horticulture in Wayside Amenities	[Nil]	
(7) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROB's/ RUBs	[Nil]	
(8) Boundary wall	[Nil]	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 5% (five percent) of the total length.
(9) Safety and traffic management during construction	[Nil]	Payment shall be made on pro rata basis every six months.

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Stage of Payment	Weightage	Payment Procedure
1	2	3
(10) Breast Wall	[Nil]	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 5% (five percent)of the total length.
(11) Toe Wall	[Nil]	
(12)Site Clearance & Dismanteling	0.93%	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 5% (five percent)of the total length.
(13) Reinforced Earth Wall	24.6%	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 5% (five percent)of the total length.
(14) Junction	3%	Cost of each Junction shall be determined on pro rata basis with respect to the total number of junctions. Payment shall be made on the completion of at least five junctions.
(15) Seeding & Mulching	2.08%	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 5% (five percent)of the total length.
(16) Ground Improvement Works (Sand Pile)	[Nil]	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 5% (five percent)of the total length.
(17) Chute Drain	0.3%	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 5 % (five percent) of the total length.

2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated in Clause14.1.1.

2.2 Payment for Maintenance shall be made in quarterly installments in accordance with the provisions of Clause 19.7.

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 189th 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 324th 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 459th 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.
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5. Scheduled Completion Date

- (i) The Scheduled Completion Date shall occur on the 540th 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.