Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

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

2. [Rehabilitation and augmentation]

[Rehabilitation and augmentation] shall include [Two-Lanning 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 [Two-Lanning]

[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 [Two Lanning of Highways (IRC: SP: 73-2015)] 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 the se 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 hilly terrain to the extent land is available.

(ii) Width of Carriageway

(a) Two-Lanning [with] earthen shoulders shall be undertaken. The paved carriageway shall be [7(seven) m] wide.

Provided that in the built-up areas: the width of the carriageways hall be as specified in the following table:

Sl. No.	Built-up stretch (Township)	Location	Width (m)	Typical Cross Section (Refer to Manual)	Remarks (Reference to cross section)
1	Langdang/Choithar	56.100 km to 56.600 km	7	As per attached TCS drawing	2
2	Langdang	56.600 km to 57.500 km	7	As per attached TCS drawing	2A
3	Langdang	58.500 km – 59.200 km	7	As per attached TCS drawing	2
4	Shirui	63.300 km to 64.700 km	7	As per attached TCS drawing	2A
5	Nungbi Khullen	74.250 km to 74.800 km	7	As per attached TCS drawing	**2A**
6	Nungbi Khullen	75.500 km to 76.000 km	7	As per attached TCS drawing	**2A**
7	Nungbi Khullen	76.300 km to 76.600 km	7	As per attached TCS drawing	**2**
8	Nungbi Khullen	77.800 km to 78.100 km	7	As per attached TCS drawing	**2A**

Sl. No.	Built-up stretch (Township)	Location	Width (m)	Typical Cross Section (Refer to Manual)	Remarks (Reference to cross section)
9	Nungbi Khullen	78.100 km to 78.660 km	7	As per attached TCS drawing	**2**
10	Nungbi Khullen	79.600 km to 79.830 km	7	As per attached TCS drawing	**2A**
11	Namrei	94.700 km to 95.300 km	7	As per attached TCS drawing	**2**

(b) Except asotherwise provided inthis Agreement the width of the paved carriageway and cross-sectional features shall conform to paragraph 1.1 above.

2. GeometricDesign andGeneralFeatures

(i) General

GeometricdesignandgeneralfeaturesoftheProjectHighway shallbeinaccordance with Section 2 of the Manual.

(ii) Design speed

For Mountainous terrain designspeedshallbetheminimumdesignspeedof 40-60 km/hr and for sharp curve and hair pin bend locations speed reduces up to 30kmph .

(iii) Improvement of the existing road geometrics

The stretches where design speed reduces below 40 kmph are summarized below:

Sl. No.	Stretch (km to km)	Type of Deficiency	Remarks (Design Speed in kmph)
1.	66.900 to 79.105	Built-up	30.000

Inthefollowingsectionswhereimprovementoftheexistingroadgeometricstothe prescribedstandardsisnotpossibletheexistingroadgeometricsshallbeimproved totheextentpossiblewithinthe existingrightofwayandproperroadsignsandsafety Measuresshall beprovided.

(iv) Right of Way

[Refertoprovision of relevant Manual].DetailsoftheRightofWayaregiveninAnnex-II of Schedule-A.

(v) Type ofshoulders

[Refer to provision of relevant Manual and specify]

(a) Inbuilt-upsections.footpaths/fullypaved shouldersshallbeprovidedinthe followingstretches:

Sl. No.	Stretch (from Km to Km)	Fully Paved shoulders/footpaths	Reference to cross section
1	56.100 km to 56.600 km	Footpath on Covered Drains	2
2	58.500 km – 59.200 km	Footpath on Covered Drains	2
3	76.300 km to 76.600 km	Footpath on Covered Drains	2
4	78.100 km to 78.660 km	Footpath on Covered Drains	2

5	94.700 km to 95.300 km	Footpath on Covered Drains	2

(b) Earthen shoulders of 2.5 m width shall be provided with selected earth wherever applicable as per TCS drawing.

(c) Design andspecificationsofpavedshouldersandgranularmaterialshall conformtotherequirementsspecifiedinthe relevant Manual.

(vi) Lateral and verticalclearances at underpasses

(a) Lateraland vertical clearances at underpasses and provision of guardrails/crash barriers shall be as per requirementsspecifiedinthe relevant Manual.

(b) Lateralclearance:Thewidthoftheopeningattheunderpassesshallbeas follows:

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

(vii) Lateral and verticalclearances at overpasses

(a) Lateralandverticalclearancesatoverpassesshallbeasperrequirementsspecifiedinthe relevant Manual.

(b) Lateralclearance:Thewidthoftheopeningattheoverpasses shallbeas follows:

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

(viii) Service roads

Serviceroadsshallbeconstructedatthelocationsandforthelengthsindicatedbelow: [Refer requirementsspecifiedinthe relevant Manual]

Sl. No.	Location ofservice road(fromkmtokm)	Righthandside(RHS)/Lefthand side(LHS)/orBothsides	Length (km)of service road
Nil			

(ix) Grade separatedstructures

(a) Gradeseparatedstructuresshallbeprovidedasperprovisionofthe Manual. The requisite are givenbelow:

[Refer to requirementsspecifiedinthe relevant Manual]

Sl. No.	Location of Structure (VUP)	Length (m)	Number andlengthofspans	Approach gradient	Remarks. if any
Nil					

(b) In thecase ofgradeseparated structuresthe type ofstructure andthe level of theProjectHighwayandthecrossroads shallbeasfollows:[Referto provisionofthe Manual andspecifythetypeofvehicularunderpass/ overpassstructureandwhetherthecrossroadistobecarriedattheexisting Level. raisedorlowered]

Sl.	Location	Type of	Cross road at	Remarks.if any

No.		structure Length(m)	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 provisionofthe relevant Manual and specify the requirements of cattle and pedestrian underpass/overpass]

Sl.No.	Location	Typeofcrossing
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

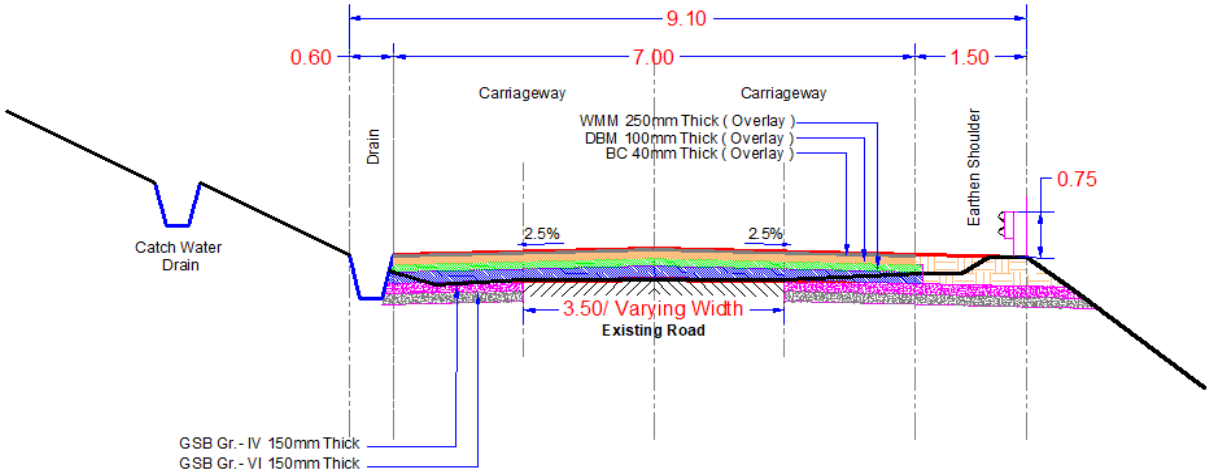
TCS TYPE	DESCRIPTION	Length (m)
TYPICAL-1	2-lane with 1.5 m earthen shoulders with W-beam crash barrier on valley side and 0.6 m lined drain on hill side	15900
TYPICAL-2	2-lane with 1.5 m earthen shoulders with 1m covered drain on both side	2600
TYPICAL-2(A)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on both side	6250
TYPICAL-2(B)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain and hill section on both side	5600
TYPICAL-3	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on hill side	1590
TYPICAL-3(A)	2-lane with 1.5 m earthen shoulders with breast wall on hill side	800
TYPICAL-3(B)	2-lane with 1.5 m earthen shoulders with breast wall on hill side and retaining wall on valley side	0
TYPICAL-4	2-lane with 1.5 m earthen shoulders with breast wall on hill side and W-beam crash barrier on valley side	1850
TYPICAL-5	2-lane with 1.5 m with 0.6 m lined drain on hill side and retaining wall & W-beam crash barrier on valley side	2800
TYPICAL-6	2-lane with 1.5 m earthen shoulder with breast wall on hill side and retaining wall & W-beam crash barrier on valley side	0
TYPICAL-7	2-lane with 1.5 m earthen with retaining wall & W-beam crash barrier on both side	0
TYPICAL-7(A)	2-lane with 1.5 m earthen with Reinforced Earth Wall on both side	0
TYPICAL-8	2-lane with 1.5 m earthen with Breast Wall on both side	5200
	Total length =	**42.590 km**

Typical Cross Section 1				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	54.500	54.645	145.000	145.000
2	54.645	56.100	1455.000	1353.500
3	57.500	58.500	1000.000	939.400
4	59.200	59.450	250.000	239.900
5	60.600	62.300	1700.000	1609.100
6	65.500	67.500	2000.000	1876.300
7	68.300	69.800	1500.000	1399.000
8	72.000	74.250	2250.000	2152.000
9	74.800	75.500	700.000	665.000
10	76.000	76.300	300.000	286.000
11	78.600	79.600	1000.000	944.000
12	81.600	83.900	2300.000	2223.000
13	89.600	90.000	400.000	400.000
14	91.300	91.700	400.000	379.000
15	94.400	94.700	300.000	286.000
16	95.500	95.700	200.000	200.000
			15900.000	15097.200
Typical Cross Section 2				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1			0.000	0.000
2	56.100	56.600	500.000	489.900
3	58.500	59.200	700.000	659.600
4	76.300	76.600	300.000	286.000
5	78.100	78.600	500.000	479.000
6	94.700	95.300	600.000	565.000
			2600.000	2479.500
Typical Cross Section 2A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	56.600	57.500	900.000	849.500
2	63.300	64.700	1400.000	1315.700
3	74.250	74.800	550.000	522.000
4	75.500	76.000	500.000	479.000
5	77.800	78.100	300.000	293.000
6	79.600	79.830	230.000	227.900
7	79.830	80.500	670.000	642.000
8	80.900	81.600	700.000	672.000
9	87.000	87.800	800.000	786.000

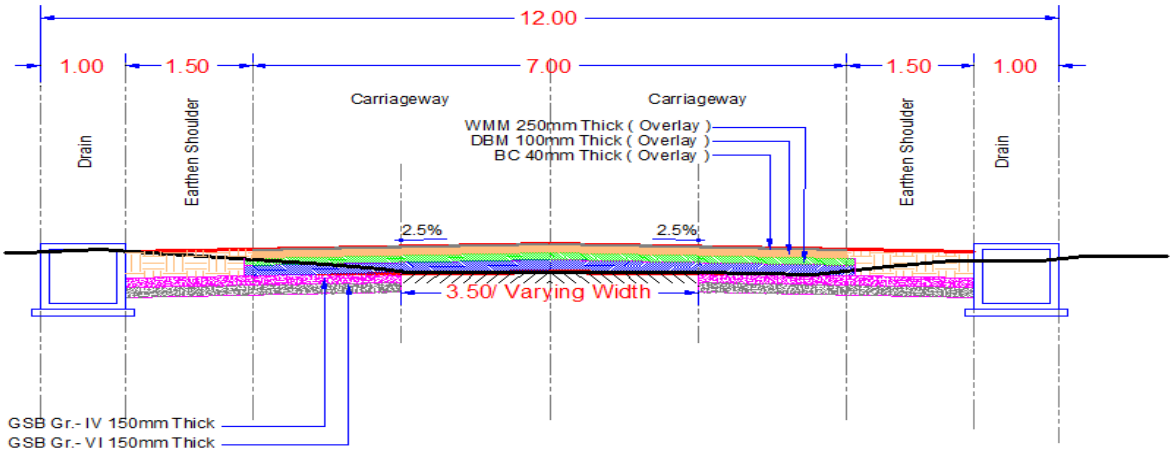
10	95.300	95.500	200.000	200.000
			6250.000	5987.100
Typical Cross Section 2B				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	85.000	86.400	1400.000	1358.000
2	87.800	88.000	200.000	193.000
3	90.000	91.300	1300.000	1279.000
4	91.700	94.400	2700.000	2637.000
			5600.000	5467.000
Typical Cross Section 3				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	53.110	54.100	990.000	879.400
2	86.400	87.000	600.000	572.000
			1590.000	1451.400
Typical Cross Section 3A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	64.700	65.200	500.000	469.700
2	65.200	65.500	300.000	300.000
			800.000	769.700
Typical Cross Section 4				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	59.450	60.600	1150.000	1100.000
2	77.100	77.800	700.000	658.000
			1850.000	1758.000
Typical Cross Section 5				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	76.600	77.100	500.000	479.000
2	80.500	80.900	400.000	393.000
3	83.900	85.000	1100.000	1051.000
4	88.000	88.800	800.000	758.000
			2800.000	2681.000
Typical Cross Section 8				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts (m)**
1	54.100	54.500	400.000	379.800
2	62.300	63.300	1000.000	959.600
3	67.500	68.300	800.000	748.000
4	69.800	71.500	1700.000	1619.700
5	71.500	72.000	500.000	451.000

6	88.800	89.600	800.000	786.000
			5200.000	4944.100
Total length of Road			**42590.00**	**m**
Total length of Road after deducting culverts			**40635.00**	**m**

TYPICAL CROSS SECTION 1



TYPICAL CROSS-SECTION 2



TYPICAL CROSS-SECTION 2A

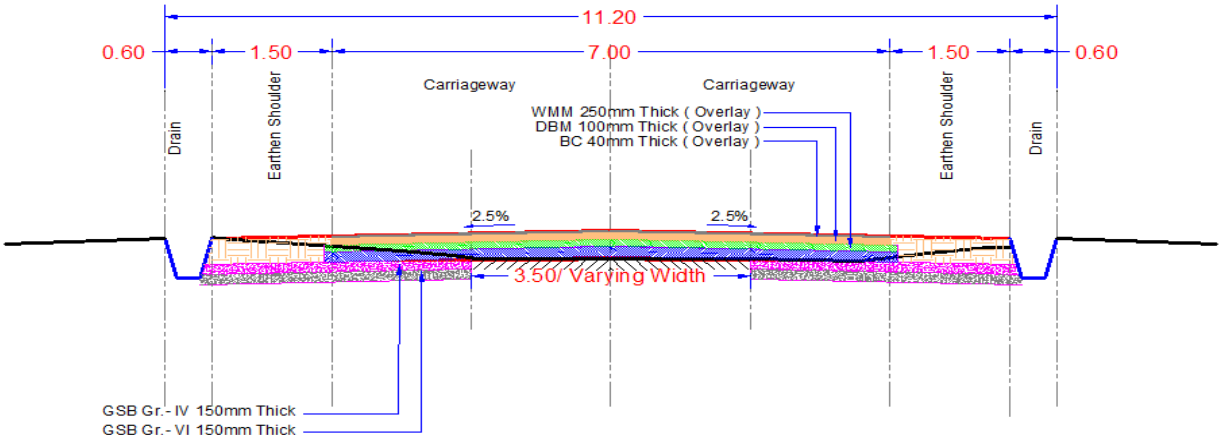


Figure 1: Typical Cross-section 2B

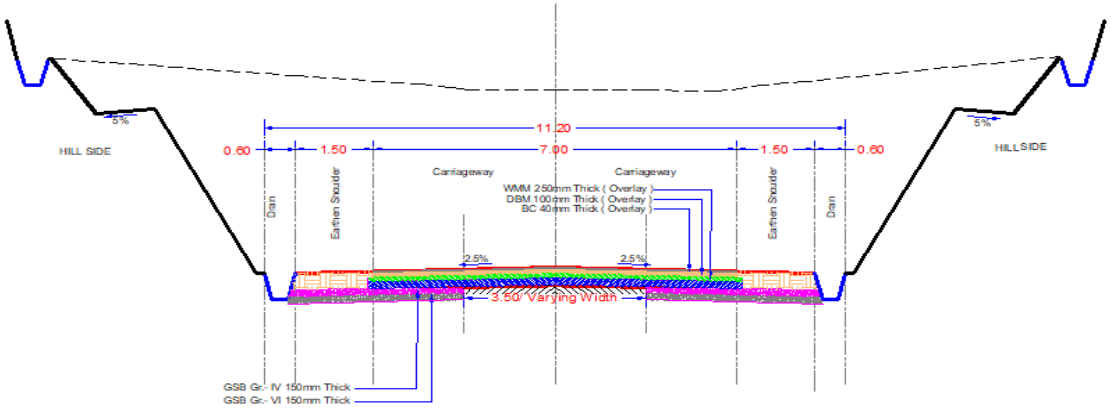


Figure 2: Typical Cross-section 3

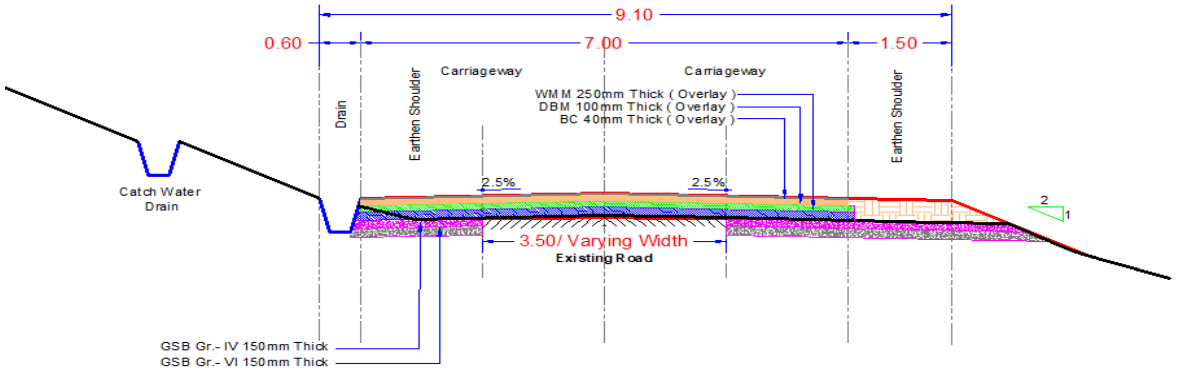


Figure 3: Typical Cross-section 3A

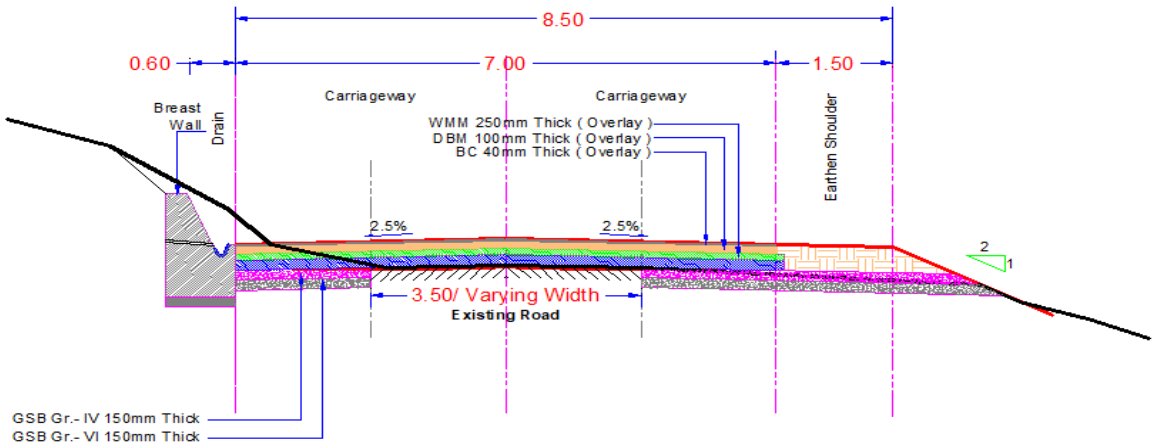


Figure 4: Typical Cross-section 4

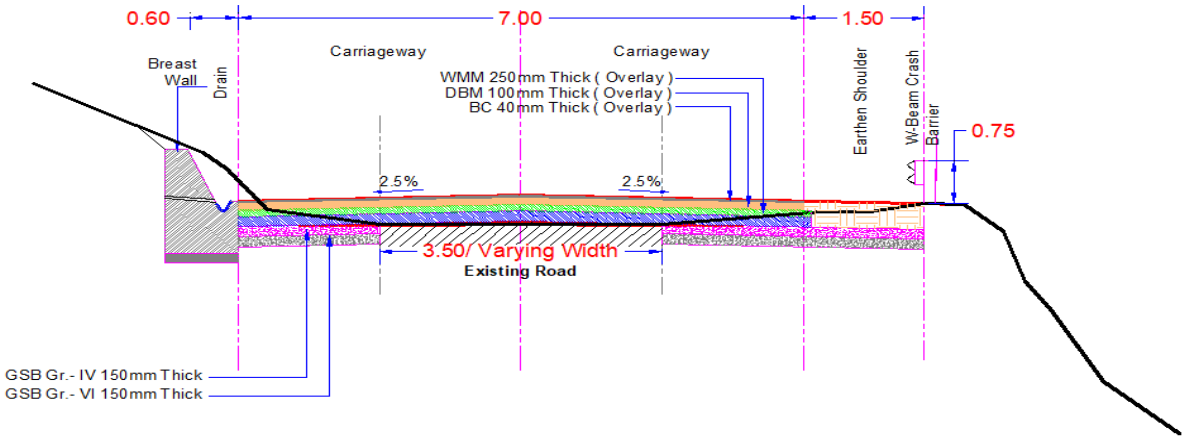


Figure 5: Typical Cross-section 5

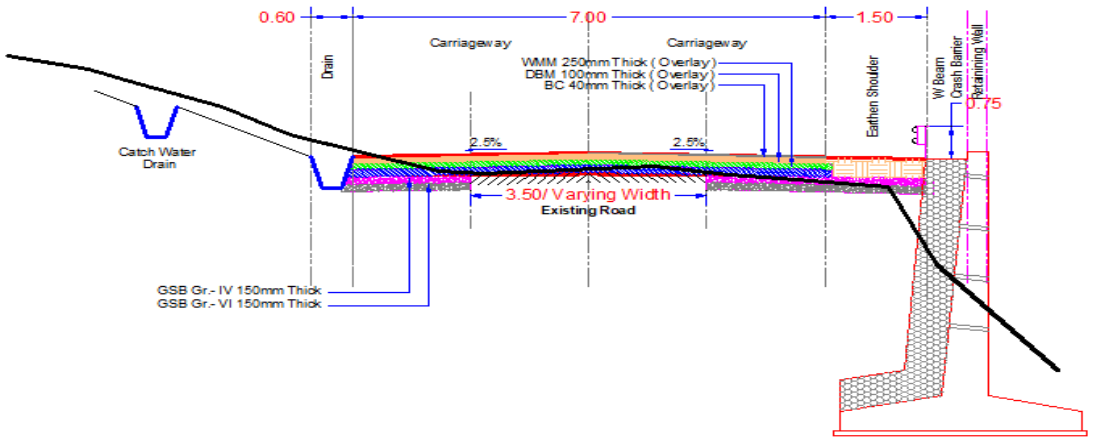
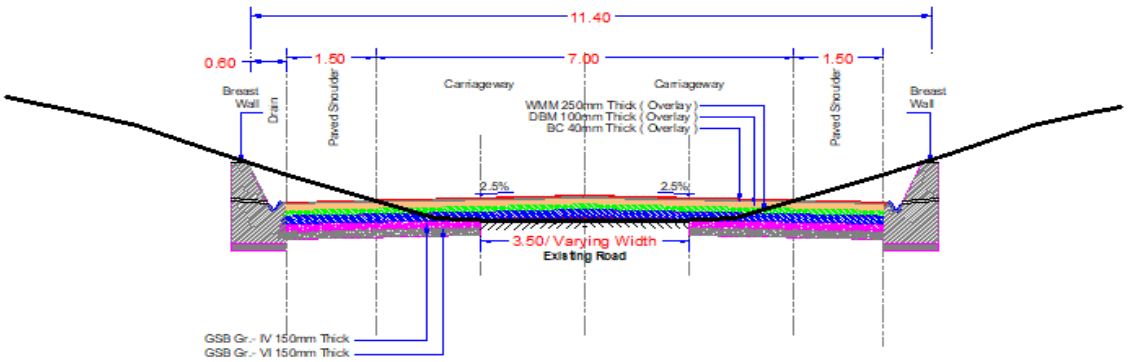


Figure 6: Typical Cross-section 8



3.IntersectionsandGradeSeparators

Allintersectionsandgradeseparatorsshallbe asperSection 3oftheManual.Existing intersections which are deficientshall be improvedto the prescribed standards.

[Refertoprovisionofthe relevant Manual andspecifytherequirements. Explain where necessarywith drawings/sketches/general arrangement]

Properlydesignedintersectionsshallbeprovidedatthelocationsandofthetypes and features given in the tables below:

(i) At-gradeintersections

Major Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features	Remarks
NIL				

Minor Intersections

Sl. No.	Location of intersection (Km)	Type of intersection	Other features
1	59.445	Y (L)	Shiroy Village
2	59.720	Y (L)	Shiroy Village
3	84.173	Y(L)	27th Assam Rifle
4	87/220	Y(R)	Awang Kasom

(ii) Grade separatedintersection with/without ramps

Sl. No.	Location	Salient features	Minimumlengthof viaduct tobe provided	Roadtobecarried over/underthe structures
Nil				

4. RoadEmbankmentandCutSection

(i) Widening and improvement of the existing road embankment/cuttings and

constructionofnewroad embankment/cuttingsshallconformtotheSpecifications andStandards giveninSection4oftheManualandthespecifiedcrosssectional details. Deficiencies in theplan and profile of the existing roadshall be corrected.

(ii) Raising oftheexistingroad[Refer toprovisionofthe relevant Manual and specify sections to be raised]

The existing road shall beraised in the followingsections:

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

5. PavementDesign

(i) Pavement design shall becarried outin accordance with provision of the relevant manual.

(ii) Type of pavement

Flexible Pavement

(iii) Design requirements

[Refertoprovisionofthe relevant Manual andspecifydesignrequirements and strategy]

(a) Design Period andstrategy

Flexiblepavementfornewpavement orfor wideningandstrengtheningof the existing pavement shallbe designed for a minimum design period of20 years. Stage construction shall not bepermitted.

(b) Design Traffic

Notwithstandinganythingtothecontrarycontained in this Agreement or the Manual. The Contractor shall design the pavement for design traffic of 20 msa.

(iv) Reconstruction of stretches

[Refer toprovisionofthe relevant Manual and specifythestretchesif any tobe reconstructed.]

Thefollowingstretchesoftheexistingroadshallbereconstructed.Theseshall be designedas newpavement.

Sl.No.	Chainage		Length	Typical Cross-section	Improvement
	To	From			
1	53.11	54.1	990	3	Reconstruction
2	54.1	54.5	400	8	Reconstruction
3	54.5	56.1	1600	1	Reconstruction
4	56.1	56.6	500	2	Reconstruction
5	56.6	57.5	900	2A	Reconstruction
6	57.5	58.5	1000	1	Reconstruction
7	58.5	59.2	700	2	Reconstruction
8	59.2	59.45	250	1	Reconstruction

Sl.No.	Chainage		Length	Typical Cross-section	Improvement
	To	From			
9	59.45	60.6	1150	4	Reconstruction
10	60.6	62.3	1700	1	Reconstruction
11	62.3	63.3	1000	8	Reconstruction
12	63.3	64.7	1400	2A	Reconstruction
13	64.7	65.2	500	3A	Reconstruction
14	65.2	65.5	300	3A	Reconstruction
15	65.5	67.5	2000	1	Reconstruction
16	67.5	68.3	800	8	Reconstruction
17	68.3	69.8	1500	1	Reconstruction
18	69.8	71.5	1700	8	Reconstruction
19	71.5	74.25	2750	1	Reconstruction
20	74.25	74.8	550	2A	Reconstruction
21	74.8	75.5	700	1	Reconstruction
22	75.5	76	500	2A	Reconstruction
23	76	76.3	300	1	Reconstruction
24	76.3	76.6	300	2	Reconstruction
25	76.6	77.1	500	5	Reconstruction
26	77.1	77.8	700	4	Reconstruction
27	77.8	78.1	300	2A	Reconstruction
28	78.1	78.6	500	2	Reconstruction
29	78.6	79.6	1000	1	Reconstruction
30	79.6	79.83	230	2A	Reconstruction
31	79.83	80.5	670	2A	Reconstruction
32	80.5	80.9	400	5	Reconstruction
33	80.9	81.6	700	2A	Reconstruction
34	81.6	83.9	2300	1	Reconstruction
35	83.9	85	1100	5	Reconstruction
36	85	86.4	1400	2B	Reconstruction
37	86.4	87	600	3	Reconstruction
38	87	87.8	800	2A	Reconstruction
39	87.8	88	200	2B	Reconstruction
40	88	88.8	800	5	Reconstruction
41	88.8	89.6	800	8	Reconstruction
42	89.6	90	400	1	Reconstruction
43	90	91.3	1300	2B	Reconstruction
44	91.3	91.7	400	1	Reconstruction
45	91.7	94.4	2700	2B	Reconstruction
46	94.4	94.7	300	1	Reconstruction
47	94.7	95.3	600	2	Reconstruction

6. RoadsideDrainage

DrainagesystemincludingsurfaceandsubsurfacedrainsfortheProjectHighway has been

provided in the table given below:

RCC Covered Drain

Chainage (Km)		Length of CD	Net Length (m)
From	To		
56.100	56.600	500	1500
58.500	59.200	700	700
76.300	76.600		300
78.100	78.600		500
94.700	95.300		600
		Total length =	3600

RR Masonry Trapezoidal Drain

Chainage (Km)		Side	Net Length (m)
From	To		
53.11	54.1	Trapezoidal PCC Drain on Hill side	990
54.1	54.5	Trapezoidal Drain in Breast Wall on Hill Side	400
54.5	56.1	Trapezoidal PCC Drain on Hill side	1600
56.6	57.5	Trapezoidal PCC Drain on both side	900
57.5	58.5	Trapezoidal PCC Drain on Hill side	1000
59.2	59.45	Trapezoidal PCC Drain on Hill side	250
59.45	60.6	Trapezoidal Drain in Breast Wall on Hill Side	1150
60.6	62.3	Trapezoidal PCC Drain on Hill side	1700
62.3	63.3	Trapezoidal Drain in Breast Wall on Hill Side	1000
63.3	64.7	Trapezoidal PCC Drain on both side	1400
64.7	65.2	Trapezoidal Drain in Breast Wall on Hill Side	500
65.2	65.5	Trapezoidal Drain in Breast Wall on Hill Side	300
65.5	67.5	Trapezoidal PCC Drain on Hill side	2000
67.5	68.3	Trapezoidal Drain in Breast Wall on Hill Side	800
68.3	69.8	Trapezoidal PCC Drain on Hill side	1500
69.8	71.5	Trapezoidal Drain in Breast Wall on Hill Side	1700
71	74.25	Trapezoidal PCC Drain on Hill side	2750
74.25	74.8	Trapezoidal PCC Drain on both side	550
74.8	75.5	Trapezoidal PCC Drain on Hill side	700
75.5	76	Trapezoidal PCC Drain on both side	500
76	76.3	Trapezoidal PCC Drain on Hill side	300
76.6	77.1	Trapezoidal PCC Drain on Hill side	500
77.1	77.8	Trapezoidal Drain in Breast Wall on Hill Side	700
77.8	78.1	Trapezoidal PCC Drain on both side	300
78.6	79.6	Trapezoidal PCC Drain on Hill side	1000
79.6	79.83	Trapezoidal PCC Drain on both side	230
79.83	80.5	Trapezoidal PCC Drain on both side	670
80.5	80.9	Trapezoidal PCC Drain on Hill side	400
80.9	81.6	Trapezoidal PCC Drain on both side	700

Chainage (Km)		Side	Net Length (m)
From	To		
81.6	83.9	Trapezoidal PCC Drain on Hill side	2300
83.9	85	Trapezoidal PCC Drain on Hill side	1100
85	86.4	Trapezoidal PCC Drain on both side	1400
86.4	87	Trapezoidal PCC Drain on Hill side	600
87	87.8	Trapezoidal PCC Drain on both side	800
87.8	88	Trapezoidal PCC Drain on both side	200
88	88.8	Trapezoidal PCC Drain on Hill side	800
88.8	89.6	Trapezoidal Drain in Breast Wall on Hill Side	800
89.6	90	Trapezoidal PCC Drain on Hill side	400
90	91.3	Trapezoidal PCC Drain on both side	1300
91.3	91.7	Trapezoidal PCC Drain on Hill side	400
91.7	94.4	Trapezoidal PCC Drain on both side	2700
94.4	94.7	Trapezoidal PCC Drain on Hill side	300
		Length =	**33550**

7. Design ofStructures

(i)General

(a) All bridges culverts and structures shall be designed and constructed in accordancewithprovisionofthe relevant Manual and shallconformtothecross- sectional features andother detailsspecifiedtherein.

(b) Width of the carriagewayof new bridges and structures shall be asfollows:

[Referto provisionofthe relevant Manual andspecifythe width ofcarriageway ofnewbridgesandstructuresofmorethan60(sixty)metrelength. ifthe carriagewaywidthisdifferentfrom7.5(sevenpointfive)metres in the table below.]

Sl. No.	Bridge/Structure at km	Width of carriageway and cross-sectional features
All Major and Minor Bridges shall be provided as per GAD attached.		

(c) The following structuresshall be providedwith footpaths:

[Refer to provisionofthe 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 bridgesshall be high-level bridges.

[Refer to provisionofthe relevant Manual and stateif there is anyexception] (e)

Thefollowingstructuresshallbedesigned tocarryutility servicesspecifiedin Table below:

[Refer to provisionofthe relevant Manual and provide details]

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

(f) Cross-sectionofthenewculvertsandbridgesatdecklevelfortheproject Highwayshall conformtothetypicalcross-sectionsgiveninprovisionofthe relevant Manual.

(ii) Culverts

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

Theexistingculvertsatthefollowinglocationsshallbere-constructedasnew culverts:

[Refer to provisionofthe relevant Manual and provide details]

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	53.360	1 X 0.9	SLAB
2	53.825	1 X 0.9	SLAB
3	54.095	1 X 0.9	SLAB
4	54.760	1 X 0.9	SLAB
5	54.810	1 X 0.9	SLAB
6	55.180	1 X 1.0	SLAB
7	55.685	1 X 0.9	SLAB
8	55.810	1 X 1.0	SLAB
9	56.135	1 X 1.0	SLAB
10	56.975	1 X 1.2	SLAB
11	58.025	1 X 0.9	SLAB
12	58.115	1 X 1.2	SLAB
13	58.300	1 X 1.1	SLAB
14	59.445	1 X 0.5	SLAB
15	59.475	1 X 0.9	SLAB
16	59.800	1 X 0.9	SLAB
17	60.020	1 X 0.9	SLAB
18	60.625	1 X 0.9	SLAB
19	60.920	1 X 0.95	SLAB
20	61.525	1 X 0.8	SLAB
21	62.905	1 X 0.9	SLAB
22	63.335	1 X 0.9	SLAB
23	65.195	1 X 1.2	SLAB
24	65.825	1 X 2.8	SLAB
25	66.345	1 X 2.6	SLAB
26	66.490	1 X 1.5	SLAB
27	66.770	1 X 3.0	SLAB
28	67.115	1 X 0.9	SLAB
29	68.055	1 X 1.1	SLAB
30	68.200	1 X 0.9	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
31	68.365	1 X 0.9	SLAB
32	68.445	1 X 0.9	SLAB
33	68.605	1 X 1.5	SLAB
34	68.855	1 X 0.9	SLAB
35	69.010	1 X 0.9	SLAB
36	69.220	1 X 0.9	SLAB
37	69.425	1 X 0.9	SLAB
38	69.965	1 X 0.9	SLAB
39	72.780	1 X 1.5	SLAB
40	73.050	1 X 0.9	SLAB
41	73.405	1 X 0.9	SLAB
42	73.545	1 X 0.9	SLAB
43	73.680	1 X 0.9	SLAB
44	73.795	1 X 0.9	SLAB
45	73.940	1 X 0.9	SLAB
46	74.045	1 X 0.9	SLAB
47	74.525	1 X 0.8	SLAB
48	75.000	1 X 1.0	SLAB
49	75.295	1 X 0.9	SLAB
50	75.390	1 X 0.8	SLAB
51	75.550	1 X 0.8	SLAB
52	75.780	1 X 1.0	SLAB
53	76.090	1 X 0.8	SLAB
54	76.580	1 X 0.9	SLAB
55	76.710	1 X 0.9	SLAB
56	76.895	1 X 0.9	SLAB
57	77.135	1 X 2.0	SLAB
58	77.200	1 X 0.9	SLAB
59	77.415	1 X 0.9	SLAB
60	77.525	1 X 1.5	SLAB
61	77.980	1 X 0.9	SLAB
62	78.425	1 X 0.9	SLAB
63	78.930	1 X 0.9	SLAB
64	79.155	1 X 0.9	SLAB
65	79.310	1 X 0.9	SLAB
66	79.450	1 X 0.9	SLAB
67	79.565	1 X 0.9	SLAB
68	79.970	1 X 0.9	SLAB
69	80.195	1 X 0.9	SLAB
70	80.820	1 X 0.9	SLAB
71	80.905	1 X 0.8	SLAB
72	81.235	1 X 0.9	SLAB
73	81.360	1 X 0.9	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
74	82.680	1 X 0.9	SLAB
75	82.785	1 X 0.7	SLAB
76	83.005	1 X 0.7	SLAB
77	83.180	1 X 0.9	SLAB
78	83.350	1 X 0.9	SLAB
79	83.550	1 X 0.9	SLAB
80	83.715	1 X 0.9	SLAB
81	84.005	1 X 0.9	SLAB
82	84.300	1 X 0.8	SLAB
83	84.820	1 X 0.7	SLAB
84	84.910	1 X 0.9	SLAB
85	85.010	1 X 0.9	SLAB
86	85.535	1 X 0.9	SLAB
87	85.970	1 X 0.9	SLAB
88	86.025	1 X 0.9	SLAB
89	86.390	1 X 1.1	SLAB
90	86.660	1 X 0.9	SLAB
91	86.735	1 X 0.9	SLAB
92	87.045	1 X 0.8	SLAB
93	87.825	1 X 0.9	SLAB
94	88.050	1 X 1.0	SLAB
95	88.315	1 X 0.9	SLAB
96	88.900	1 X 0.9	SLAB
97	91.070	1 X 0.9	SLAB
98	91.325	1 X 0.9	SLAB
99	91.685	1 X 0.7	SLAB
100	91.730	1 X 0.9	SLAB
101	91.855	1 X 0.9	SLAB
102	93.080	1 X 3.0	SLAB
103	93.765	1 X 5.7	SLAB
104	94.225	1 X 1.5	SLAB
105	94.635	1 X 1.1	SLAB
106	94.945	1 X 3.0	SLAB

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

(c) Wideningof existingculverts:

Allexistingculvertswhicharenottobereconstructedshallbewidenedtothe Roadway width of the Project Highway as per the typical cross section given in provisionofthe relevant Manual. Repairs and strengthening of existing structures where required shall be carried out.

Sl. No.	Culvert location	Type, span, height and width of existing culvert (m)	Repairs to be carried out [specify]
1	53.945	1 X 1.1	SLAB

Sl. No.	Culvert location	Type, span, height and width of existing culvert (m)	Repairs to be carried out [specify]
2	54.525	1 X 2.9	SLAB
3	54.65	1 X 1.1	SLAB
4	54.975	1 X 1.5	SLAB
5	55.265	1 X 2.9	SLAB
6	56.285	1 X 1.5	SLAB
7	59.935	1 X 1.4	SLAB
8	61.1	1 X 1.0	SLAB
9	61.75	1 X 1.5	SLAB
10	61.87	1 X 1.5	SLAB
11	63.395	1 X 1.5	SLAB
12	63.605	1 X 4.0	SLAB
13	63.735	1 X 1.3	SLAB
14	64.205	1 X 1.0	SLAB
15	64.685	1 X 5.7	SLAB
16	66.99	1 X 1.4	SLAB
17	67.07	1 X 1.1	SLAB
18	67.235	1 X 1.2	SLAB
19	67.705	1 X 1.2	SLAB
20	68.29	1 X 4.3	SLAB
21	69.105	1 X 1.5	SLAB
22	70.78	1 X 1.3	SLAB
23	72.305	1 X 1.3	SLAB
24	74.785	1 X 1.2	SLAB
25	74.885	1 X 1.0	SLAB
26	75.235	1 X 1.0	SLAB
27	78.63	1 X 1.3	SLAB
28	78.795	1 X 1.3	SLAB
29	84.18	1 X 1.3	SLAB
30	84.575	1 X 1.0	SLAB
31	86.935	1 X 1.1	SLAB
32	88.61	1 X 1.0	SLAB
33	88.745	1 X 1.0	SLAB
34	90.715	1 X 3.0	SLAB
35	94.03	1 X 1.1	SLAB
36	94.795	1 X 1.1	SLAB
37	94.91	1 X 1.0	SLAB
38	95.195	1 X 1.4	SLAB
39	95.275	1 X 1.3	SLAB

(d) Additionalnewculvertsshallbeconstructedasperparticularsgiveninthe table below:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	53.250	1 X 1.5	SLAB
2	53.615	1 X 1.5	SLAB
3	54.180	1 X 1.5	SLAB
4	54.390	1 X 1.5	SLAB
5	55.465	1 X 1.5	SLAB
6	56.550	1 X 1.5	SLAB
7	56.605	1 X 1.5	SLAB
8	56.800	1 X 1.5	SLAB
9	57.220	1 X 1.5	SLAB
10	57.465	1 X 1.5	SLAB
11	57.700	1 X 1.5	SLAB
12	57.910	1 X 1.5	SLAB
13	58.425	1 X 1.5	SLAB
14	58.630	1 X 1.5	SLAB
15	58.785	1 X 1.5	SLAB
16	58.920	1 X 1.5	SLAB
17	59.200	1 X 1.5	SLAB
18	60.305	1 X 1.5	SLAB
19	62.015	1 X 1.5	SLAB
20	62.115	1 X 3.0	SLAB
21	62.225	1 X 1.5	SLAB
22	62.445	1 X 1.5	SLAB
23	62.700	1 X 1.5	SLAB
24	63.180	1 X 1.5	SLAB
25	63.835	1 X 1.5	SLAB
26	64.025	1 X 1.5	SLAB
27	65.040	1 X 1.5	SLAB
28	65.500	1 X 1.5	SLAB
29	65.595	1 X 1.5	SLAB
30	66.125	1 X 1.5	SLAB
31	67.310	1 X 5.0	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
32	67.490	1 X 1.5	SLAB
33	67.950	1 X 1.5	SLAB
34	69.485	1 X 1.5	SLAB
35	69.710	1 X 1.5	SLAB
36	69.815	1 X 1.5	SLAB
37	70.165	1 X 1.5	SLAB
38	70.425	1 X 1.5	SLAB
39	70.555	1 X 1.5	SLAB
40	70.930	1 X 1.5	SLAB
41	71.300	1 X 1.5	SLAB
42	71.750	1 X 1.5	SLAB
43	72.045	1 X 3.0	SLAB
44	72.410	1 X 1.5	SLAB
45	72.585	1 X 1.5	SLAB
46	73.145	1 X 1.5	SLAB
47	73.250	1 X 1.5	SLAB
48	74.185	1 X 1.5	SLAB
49	74.415	1 X 1.5	SLAB
50	74.685	1 X 1.5	SLAB
51	75.900	1 X 1.5	SLAB
52	76.185	1 X 1.5	SLAB
53	76.330	1 X 1.5	SLAB
54	76.460	1 X 1.5	SLAB
55	76.995	1 X 1.5	SLAB
56	77.655	1 X 1.5	SLAB
57	77.785	1 X 1.5	SLAB
58	78.175	1 X 1.5	SLAB
59	78.565	1 X 1.5	SLAB
60	79.375	1 X 1.5	SLAB
61	79.705	1 X 1.5	SLAB
62	80.450	1 X 1.5	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
63	80.600	1 X 1.5	SLAB
64	81.570	1 X 1.5	SLAB
65	81.675	1 X 1.5	SLAB
66	81.820	1 X 1.5	SLAB
67	82.075	1 X 1.5	SLAB
68	82.565	1 X 1.5	SLAB
69	83.830	1 X 1.5	SLAB
70	84.685	1 X 1.5	SLAB
71	85.220	1 X 1.5	SLAB
72	86.335	1 X 1.5	SLAB
73	86.515	1 X 1.5	SLAB
74	87.205	1 X 1.5	SLAB
75	87.650	1 X 1.5	SLAB
76	88.445	1 X 1.5	SLAB
77	88.545	1 X 1.5	SLAB
78	89.035	1 X 1.5	SLAB
79	89.520	1 X 1.5	SLAB
80	90.420	1 X 1.5	SLAB
81	91.565	1 X 1.5	SLAB
82	91.995	1 X 1.5	SLAB
83	92.345	1 X 1.5	SLAB
84	92.620	1 X 1.5	SLAB
85	93.420	1 X 1.5	SLAB
86	93.885	1 X 1.5	SLAB
87	94.475	1 X 1.5	SLAB
88	95.390	1 X 1.5	SLAB

(e) Repairs/replacementsofrailing/parapets,flooringandprotectionworksof the existingculvertsshall be undertaken as follows:

[Refer provisionofthe relevant Manual and provide details]

Sl.No.	Location atkm	Typeofrepair required
Nil		

(f) Floorprotectionworksshallbeasspecifiedintherelevant IRC Codesand Specifications.

(iii) Bridges

(a) Existing bridges to be re-constructed/widened

[(i) Theexistingbridgesatthefollowinglocationsshallbere-constructed as newStructures]

[Refer provisionofthe relevant Manual and provide details]

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

(ii) The following narrow bridges shall bewidened:

Sl. No.	Location (km)	Existing width(m)	Extent of widening(m)	Cross-sectionatdeck levelforwidening@
Nil				

(b) Additional new bridges

[Specify additional newbridgesif required. And attach GAD]

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

Sl. No.	Location (km)	Total Length (m)	Remarks. If any
Nil			

(c) The railingsof existingbridgesshall bereplacedby crash barriersat the followinglocations:

[Refer provisionofthe relevant Manual and provide details:]

Sl.No.	Location atkm	Remarks
Nil		

(d) Repairs/replacements ofrailing/parapets oftheexistingbridgesshallbe undertaken as follows:

[Refer to provisionofthe relevant Manual and providedetails]

Sl.No.	Location atkm	Remarks
Nil		

(e) Drainagesystem forbridge decks

Aneffectivedrainagesystemforbridgedecks shall beprovidedas specified in provisionofthe relevant Manual

(f) Structures in marine environment

[Refertoprovisionofthe relevant Manual andspecify thenecessarymeasures/

treatments for protecting structuresin marineenvironment. Where applicable]

(v) Rail-roadbridges

(a) DesignconstructionanddetailingofROB/RUBshallbeasspecifiedinprovisionofthe relevant Manual [Refer toprovisionofthe relevant Manual andspecify modification, if any]

(b) Road over-bridges

Roadover-bridges(roadoverrail)shall beprovidedatthefollowinglevel crossings. As per GAD drawings attached:

Sl. No.	Location ofLevelcrossing(Chainagekm)	Lengthofbridge (m)
Nil		

(c) Road under-bridges

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

Sl. No.	Location ofLevelcrossing (Chainage km)	Number andlengthof span(m)
Nil		

(v) Grade separatedstructures

[Refer provisionofthe relevant Manual]

Thegradeseparatedstructuresshallbeprovidedatthelocationsandofthetypeand length specified in paragraphs 2(ix) and3 of this Annex-I.

(vi) Repairs andstrengthening of bridges andstructures

[Refer to provisionofthe relevant Manual and provide details]

Theexistingbridgesandstructurestoberepaired/strengthenedandthenatureand extent of repairs /strengtheningrequired are given below:

(a) Bridges

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

(b) ROB / RUB

Sl. No.	Location of ROB/RUB (km)	Natureandextent ofrepairs/strengtheningtobe carriedout
Nil		

(c) Overpasses/Underpasses and otherstructures

Sl. No.	Location of Structure(km)	Natureandextent ofrepairs/strengtheningtobe carriedout
Nil		

(vii) List of Major Bridges andStructures

The following is the list ofthe Major Bridges and Structures:

Sl. No.	Location (Km)
Nil	

8. Traffic ControlDevicesandRoadSafetyWorks

(i) Trafficcontroldevicesandroadsafetyworksshallbeprovidedinaccordancewith provisionsof relevantManual.

Sl. No	Traffic Signage, Road Marking and other appurtenances	unit	Quantity
1	Ordinary Kilometre stones=	Nos	33
2	5th Kilometre stones=	Nos	8
3	hectometer Stones=	Nos	163
4	Delineators (100 cm long and circular shaped) =	Nos	539
5	900 mm Octagonal	Nos	15
6	600 mm circular	Nos	255
7	900 mm Triangular	Nos	253
8	800 mm x 600 mm rectangular	Nos	380
9	Fluroscent Strips	Rolls	7
10	Object Hazard Marker (one way)	Nos	239

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

9. RoadsideFurniture

(i) Roadsidefurnitureshallbeprovidedinaccordancewith article 8(i) of this schedule.

(ii) Overhead trafficsigns: location andsize

Sl. No.	Location (Km)	Size
1	At Longpi Kajui (Ch. 73+000 km)	16 m X 1.2 m (Double Pole)
2	At Nameri (Ch. 92+350 km)	16 m X 1.2 m (Double Pole)

10. Compulsory Afforestation

[Refertoprovision of relevantManualandspecifythenumberoftreeswhichare required to be plantedby the concerned department as compensatoryafforestation.]

11. Hazardous Locations

The safetybarriers shall also be provided at thefollowinghazardous locations:

a) Breast Wall

Chainage		Side	Net Length (m)
From (km)	To (km)		
59.450	60.600	One side	1100.000
77.100	77.800	One side	658.000
54.100	54.500	Both	379.800
62.300	63.300	Both	959.600
67.500	68.300	Both	748.000
69.800	71.500	Both	1619.700

Chainage		Side	Net Length (m)
From (km)	To (km)		
71.500	72.000	Both	451.000
88.800	89.600	Both	786.000
		Total Net Length =	11446.

b) Retaining Wall

Chainage		Side	Net Length (m)
From (km)	To (km)		
76.600	77.100	Valley	479.000
80.500	80.900	Valley	393.000
83.900	85.000	Valley	1051.000
88.000	88.800	Valley	758.000
		Total Net Length =	**2681.000**

c) W-Beam Crash Barrier

Chainage		Side	Net Length (m)
From (km)	To (km)		
54.500	54.645	Valley	145.000
54.645	56.100	Valley	1353.500
57.500	58.500	Valley	939.400
59.200	59.450	Valley	239.900
60.600	62.300	Valley	1609.100
65.500	67.500	Valley	1876.300
68.300	69.800	Valley	1399.000
72.000	74.250	Valley	2152.000
74.800	75.500	Valley	665.000
76.000	76.300	Valley	286.000
78.600	79.600	Valley	944.000
81.600	83.900	Valley	2223.000
89.600	90.000	Valley	400.000
91.300	91.700	Valley	379.000
94.400	94.700	Valley	286.000
95.500	95.700	Valley	200.000
59.450	60.600	Valley	1100.000
77.100	77.800	Valley	658.000

Chainage		Side	Net Length (m)
From (km)	To (km)		
76.600	77.100	Valley	479.000
80.500	80.900	Valley	393.000
83.900	85.000	Valley	1051.000
88.000	88.800	Valley	758.000
		Total net length =	**19536.200**

12. Special RequirementforHillRoads

12.1 Seeding and Mulching:

Sl No	From	To	Length	Height	Sq mt
1	62300	62410	110	10	1100
2	74270	74330	60	12	720
3	89020	89980	960	12	11520
4	85210	85260	50	10	500
	Both side of Carriageway		2	x	**13840**
				Total	**27680**

[Refertothe provision of relevantManualandprovidedetailswhererelevant and required.]

13. ChangeofScope

ThelengthofStructuresandbridgesspecifiedhere in aboveshallbetreated asan approximateassessment. Theactuallengthsasrequiredonthebasisofdetailed investigationsshallbedeterminedby theContractorinaccordance withthe SpecificationsandStandards.AnyvariationsinthelengthsspecifiedinthisSchedule-BshallnotconstituteaChangeofScopesaveand exceptanyvariationsinthelength arisingoutofaChange ofScopeexpresslyundertakeninaccordancewiththe provisions of Article 13.

(Schedule-B1)

1. The shifting of utilities and felling of trees shall be carried out by the concerned department. The cost of the same shall be borne by the concerned department.

Annexure-I

Schedule-B1

(Refer Sheet-II)

Utility Shifting.

Shifting of obstructing existing utilities indicated in Schedule A to an appropriate location in accordance with the standards and specification of concerned Utility Owning Department is part of the scope of work of the Contractor/Concessionaire*. The bidders may visit the site and assess the quantum of shifting of utilities for the projects before submission of their bid. Copy of utility relocation plan is enclosed. The specification of concerned Utility Owning Department shall be applicable and followed.

Notes:

a) The type/spacing/size/specifications of poles/towers/lines/cables to be used in shifting work shall be as per the guidelines of utility owning department and it is to be agreed solely between the contractor/Concessionaire* and the utility owning department. No change of scope shall be admissible and no cost shall be paid for using different type/spacing/size/specifications in shifted work in comparison to those in the existing work or for making any overhead crossing to underground as per requirement of utility owning department and/or construction of project highway. The contractor/concessionaire* shall carry out joint inspection with utility owning department and get the estimates from the utility owning department. The assistance of the Authority is limited to giving forwarding letter on the proposal of contractor/concessionaire* to utility owning department whenever asked by the contractor/concessionaire*. The decision/ approval of utility owning department shall be on the contractor/concessionaire*.

b) The supervision charges at the rates/charges applicable of the utility owning department shall be paid directly by the Authority to the utility Owning department as and when contractor/concessionaire*furnishes demand of utility Owning Department along with a copy of estimated cost given by later.

c) The dismantled material/scrap of existing Utility to be shifted/Dismantled shall belong to the contractor/concessionaire* who would be free to dispose-off the dismantled material as deemed fit by them unless the contractor/concessionaire* is required to deposit the dismantled material may be availed by the contractor/concessionaire* as per estimate agreed between them.

d) The utilities shall be handed over after shifting work is completed to utility Owning Department to their entire satisfaction. The maintenance liability shall rest with the Utility Owning Department after Handing over Process is complete as far as utility shifting works are concerned.

Note –II Copy of utility shifting plans enclosed as Annexure-II to Schedule B1.

Schedule-H

(See Clauses 10.1(iv) and 19.3)

Contract Price Weightages

1.1 The Contract Price for this Agreement is

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

Bill No	Weightage in percentage to the contract price	Description of Items		Percentage weightage
1				
	66.15%	*A1.1*	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A1.2	*Sub-Base Course*	**0.00%**
		A1.3	*Non Bituminous Base Course*	**0.00%**
		A1.4	*Bituminous Base Course*	**0.00%**
		A1.5	*Wearing Coat*	**0.00%**
		A1.6	*Widening and repair of culverts*	**0.00%**
		A1.7	*Hard Shoulder*	**0.00%**
2		**RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(FLEXIBLE PAVEMENT)**		**0.00%**
		A2.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**27.03%**
		A2.2	*Sub-Base Course*	**8.64%**
		A2.3	*Non Bituminous Base Course*	**6.03%**
		A2.4	*Bituminous Base Course*	**9.14%**
		A2.5	*Wearing Coat*	**3.99%**
		A2.6	*Hard Shoulder*	**0.00%**
3		**RECONSTRUCTION/NEW 2-LANE ALIGNMENT/BYPASS(RIGID PAVEMENT)**		**0.00%**
		A3.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A3.2	*Sub-Base Course*	**0.00%**
		A3.3	*Dry Lean Concrete(DLC) Course*	**0.00%**
		A3.4	*Pavemennt Quality Control(PQC) Course*	**0.00%**

4		**RECONSTRUCTION/NEW SERVICE ROAD (FLEXIBLE PAVEMENT)**		**0.00%**
		A4.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A4.2	*Sub-Base Course*	**0.00%**
		A4.3	*Non Bituminous Base Course*	**0.00%**
		A4.4	*Bituminous Base Course*	**0.00%**
		A4.5	*Wearing Coat*	**0.00%**
5		**RECONSTRUCTION/NEW SERVICE ROAD (RIGID PAVEMENT)**		**0.00%**
		A5.1	*Earthwork up to top of the sub-grade including excavation in soil, soft rock and hard rock including Cleaning & grubbing with required site clearance etc.*	**0.00%**
		A5.2	*Sub-Base Course*	**0.00%**
		A5.3	*Dry Lean Concrete(DLC) Course*	**0.00%**
		A5.4	*Pavemennt Quality Control(PQC) Course*	**0.00%**
6		**RECONSTRUCTION AND NEW CULVERTS ON EXISTING ROAD, REALIGNMENTS, BYPASSES**		**0.00%**
		A6.1	*Culverts and associated Protection Works (Length< 6m)*	**11.32%**
7	**0.24%**	**WIDENING AND REPAIR OF MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A7.1	*Minor Bridges*	**0.00%**
8		**NEW MINOR BRIDGES (Length > 6 m and < 60 m)**		**0.00%**
		A8.1	***Foundation + Sub Structures:*** *On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.*	**0.21%**
		A8.2	***Super-structure:*** *On completion of the super structure in all respect including wearing coat, bearings, expansion joints, hand rails, crash barriers, road signs & markings, tests on completion etc. complete in all respect.*	**0.03%**
		A8.3	***Approaches:*** *On completion of approaches including retaining wall, stone pitching, protection works complete in all respect and fit for use.*	**0.00%**
		A8.4	***Guide Bunds and River Training Works:*** *On completion of Guide bunds and river training works complete in all respects.*	**0.00%**
9		**WIDENING AND REPAIRS OF UNDERPASSES/ OVERPASSES**		**0.00%**
		A9.1	*Underpasses/ Overpasses*	**0.00%**
10		**NEW UNDERPASSES/ OVERPASSES**		**0.00%**
		A10.1	***Foundation + Sub Structures:*** *On completion of the foundation work including foundations for wing wall and return walls, abutments, piers upto the abutment/pier cap.*	**0.00%**
		A10.2	***Super-structure:*** *On completion of the super structure in all respect including*	**0.00%**

				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 joint complete in all respects as specified and (b) in case of underpass- Rigid pavement including drainage facility complete in all respects as specified.		
			A10.3		***Approaches:*** *On completion of approaches including retaining walls/ Reinforced earth walls, stone pitching, protection works complete in all respect and fit for use.*	**0.00%**
11	**0.000%**	**WIDENING AND REPAIRS OF MAJOR BRIDGES**				**0.00%**
			A11.1		*Foundation*	**0.00%**
			A11.2		*Sub-structure*	**0.00%**
			A11.3		*Super-structure(including bearings)*	**0.00%**
			A11.4		*Wearing Coat including expansion joints*	**0.00%**
			A11.5		*Miscellaneous items like handrails, crash barriers, road markings etc.*	**0.00%**
			A11.6		*Wing walls/ Return walls*	**0.00%**
			A11.7		*Guide Bunds, River Training Works etc*	**0.00%**
			A11.8		*Approaches (including Retaining walls, stone pitching and protection works)*	**0.00%**
12		**NEW MAJOR BRIDGES**				**0.00%**
			A12.1		*Foundation*	**0.00%**
			A12.2		*Sub-structure*	**0.00%**
			A12.3		*Super-structure(including bearings)*	**0.00%**
			A12.4		*Wearing Coat including expansion joints*	**0.00%**
			A12.5		*Miscellaneous items like handrails, crash barriers, road markings etc.*	**0.00%**
			A12.6		*Wing walls/ Return walls*	**0.00%**
			A12.7		*Guide Bunds, River Training Works etc*	**0.00%**
			A12.8		*Approaches (including Retaining walls, stone pitching and protection works)*	**0.00%**
13		**WIDENING AND REPAIR OF ROB/RUB**				**0.00%**
			A13.1	***(a)***	***ROB***	**0.00%**
				(i)	-	**0.00%**
				(ii)	-	**0.00%**
				(iii)	-	**0.00%**
				(iv)	-	**0.00%**
				(v)		**0.00%**
				(vi)		**0.00%**
				(vii)	-	**0.00%**
			A13.2	***(b)***	***RUB***	**0.00%**
				(i)	-	**0.00%**

			(ii)	-		**0.00%**
			(iii)	-		**0.00%**
			(iv)	-		**0.00%**
			(v)			**0.00%**
			(vi)			**0.00%**
			(vii)	-		**0.00%**
14		**NEW ROB/RUB**				**0.00%**
		A14.1	***(a)***	***ROB***		**0.00%**
			(i)	-		**0.00%**
			(ii)	-		**0.00%**
			(iii)	-		**0.00%**
			(iv)	-		**0.00%**
			(v)			**0.00%**
			(vi)			**0.00%**
			(vii)	-		**0.00%**
		A14.2	***(b)***	***RUB***		**0.00%**
			(i)	-		**0.00%**
			(ii)	-		**0.00%**
			(iii)	-		**0.00%**
			(iv)	-		**0.00%**
			(v)			**0.00%**
			(vi)			**0.00%**
			(vii)	-		**0.00%**
15		**WIDENING AND REPAIR OF ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				**0.00%**
		A.15.1	*(i)*	-		**0.00%**
			(ii)	-		**0.00%**
			(iii)	-		**0.00%**
			(iv)	-		**0.00%**
			(v)			**0.00%**
			(vi)			**0.00%**
			(vii)	-		**0.00%**
16		**NEW ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				**0.00%**
		A.16.1	*(i)*	-		**0.00%**
			(ii)	-		**0.00%**

			(iii)	-		**0.00%**
			(iv)	-		**0.00%**
			(v)			**0.00%**
			(vi)			**0.00%**
			(vii)	-		**0.00%**
17	**32.32%**	**OTHER WORKS**				**0.00%**
		A17.1	*Toll Plaza*			**0.00%**
		A17.2	*Road side drain*			**3.40%**
		A17.3	*Road signs, marking, Km stones, Safety devices etc.*			**0.00%**
			(a)	*Pavement Marking*		**1.11%**
			(b)	*Crash barrier/W metal crash barrier*		**1.91%**
			(c)	*Traffic Sign*		**0.13%**
			(d)	*Road Boundary stone, km Stone,5th km stone and hectometer stone*		**0.01%**
			(e)	*Traffic blinker LED delineator, stud, reflective payment marker, tree reflector*		**0.01%**
			(f)	*Traffic impact Attenuators at Abutments and Piers traffic island*		**0.00%**
			(g)	*Road furniture (overhead signboard etc.)*		**0.08%**
			(h)	*Others including Toilet Blocks and Street lightining*		**0.21%**
		A17.4	*Project facilities*			**0.00%**
			(a)	*Truck lay-byes*		**0.00%**
			(b)	*Bus bays and Bus Shelter*		**0.10%**
			(c)	*Junctions (Major & Minor)*		**0.02%**
			(d)	*Others including Cable duct & Lighing on Bridges, etc.*		**0.00%**
			(e)	*Rest areas (viewpoint/recreational areas)*		**0.00%**
		A17.5	*Road Side Plantation, Median plantation & Turfing of the embankment slope*			**0.00%**
		A17.6	*Repair of protection works other than approaches to the bridges, elevated sections/ fly-overs/ grade separator and ROBs/ RUBs.*			**0.00%**
		A17.7	*Traffic diversion, Safety and traffic management during construction*			**0.00%**
		A17.8	*Slope Protection Works as special requirement for hill road*			**0.00%**
			(a)	*Hydro Seeding of Cut Slopes in Soil*		**0.01%**
			(b)	*Seeding and Mulching with Jute net all along the perpetual slide locations*		**0.28%**
			(c)	*Catchwater Drain*		**0.00%**
			(d)	*Retaining Wall*		**8.92%**
			(e)	*Reinforced earth wall*		**0.00%**
			(f)	*Breast wall*		**13.96%**

			(g)	*Soil Nailing*	**0.04%**
			(h)	*Gabion Structure*	**2.13%**
18	**1.29%**	*A18*	***Utility Shifting***		**1.29%**
Total Civil Cost (In Rs.)					**100.00%**
Civil Cost Per Km (In Cr.)					

Sheet-III

1.2.1 Details of utility shifting

Item	Weightage in percentage to the Utility Shifting Price	Stage for Payment	Percentage weightage
Electrical Utilities and public Health Utilities (Water pipe lines and sewage lines)	*1.29%*	(i) EHT line	0%
		(ii) EHT crossings	
		(iii) HT/LT line	15.3%
		(iv) HT/LT crossings	
		(v) Water pipeline	84.7%
		(vi) Water pipeline crossings	
		(vii) Sewage lines	0%
		(viii) Sewage lines crossings	

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:

Table1.3.1

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 10(ten) percent of the total length.
(1)Earthwork up to top of the sub-grade	[Nil]	
(3) Sub-base Course	[Nil]	
(4) Non bituminous Base course	[Nil]	
(5) Bituminous Base course	[Nil]	
(6) Wearing Coat	[Nil]	
(7) Widening and repair of culverts	[Nil]	Cost of ten completed culverts shall be determined on pro rata basis with respect to the total number of culverts.
B.1- Reconstruction/New2-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 0.5 (Half) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	**27.03%**	
(3) Sub-base Course	**8.64%**	
(4) Non bituminous Base course	**6.03%**	
(5) Bituminous Base course	**9.14%**	
(6) Wearing Coat	**3.99%**	
(7) Widening and repair of culverts		
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
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	

Stage of Payment	Percentage weightage	Payment Procedure
(3) Dry Lean Concrete (DLC) Course	[Nil]	less.
(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 5 (five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Non bituminous Base course	[Nil]	
(4) Bituminous Basecourse	[Nil]	
(5) Wearing Coat	[Nil]	
C.2- Reconstruction/New Service road (Rigid Pavement)		Unit of measurement is linear length. Payment of each stage shall be made on pro rata basis on completion of a stage in full length or 5 (five) km length, whichever is less.
(1)Earthwork up to top of the sub-grade	[Nil]	
(2) Sub-base Course	[Nil]	
(3) Dry Lean Concrete (DLC)Course	[Nil]	
(4) Pavement Quality Control (PQC) Course	[Nil]	
D- Reconstruction &New Culverts on existing road, 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 culverts
Culverts (length <6m)	11.32%	

@ 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 of Payment	Weightage	Payment Procedure
1	2	3
A.1-Widening and repairs of Minor Bridges(length>6m&<60m)	[Nil]	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

Stage of Payment	Weightage	Payment Procedure
		widening & repair works of a minor bridge
A.2- New Minor Bridges (length > 6m & < 60m)		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	0.21%	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)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.	0.03%	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	[Nil]	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 sand 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.
B.2- New Underpasses/Overpasses		
(1)Foundation + Sub-Structure: On completion of the foundation work including foundations for wing and return walls, abutments, piers up to the abutment/pier cap.	[Nil]	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. In case where load testing is required for foundation, the trigger of first payment shall include load testing also where specified.
(2)Super-structure: On completion of the super-structure in all respects including wearing coat, bearings, expansion joints, hand	[Nil]	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

Stage of Payment	Weightage	Payment Procedure
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.		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/ 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. 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	[Nil]	Miscellaneous: Payments shall be made on completion of all miscellaneous works like handrails, crash barriers, road

Stage of Payment	Weightage	Payment Procedure
markings etc.		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/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.
A.2-NewMajorBridges		
(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 lessthan25% 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. 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/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.
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 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.

Stage of Payment	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]	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%ofthe 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]	Wingwalls/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]	Payments shall be made on pro-rata 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	[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

Stage of Payment	Weightage	Payment Procedure
case of RUB-rigid pavement under RUB including drainage facility 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]	Wingwalls/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.1-Wideningandrepairs 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]	Wingwalls/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 Separators		
(1) Foundations	[Nil]	Foundation: Cost of each structure shall be determined on

Stage of Payment	Weightage	Payment Procedure
		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 foreach 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]	Wingwalls/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 caseofinnovateMajor Bridge projects like cablesuspension/cable stayed/Extra Dozedandexceptionallylongspanbridges, theschedulemay bemodifiedasper site requirements before biddingwith due approval ofCompetentAuthority.

(2) The Schedule for exclusive tunnel projects may be prepared as per site requirements beforebiddingwith dueapproval of CompetentAuthority.

1.3.4 Other works.

Procedureforestimatingthevalueofotherworksdoneshallbeasstatedin table 1.3.4.

Table1.3.4

Stage of Payment	Weightage	Payment Procedure
1	2	3
(1) 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 plaza.
(2) Roadside drains	3.40%	Unit of measurement is linear length. Payment

Stage of Payment	Weightage	Payment Procedure
(3) Road signs, markings, km stones, safety devices etc.	3.46%	shall be made on pro-rata basis on completion of a stage in a length of not less than 05% (five percent)of the total length.
(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/Bus Shelter	0.1%	
d) Rest Area	0.00%	
e) Junction	0.02%	
(5) Road side Plantation including Horticulture in Wayside Amenities	[Nil]	Unit of measurement is linear length
(6) Repair of Protection Works other than approaches to the bridges, elevated sections/flyover/grade separators and ROBs/ RUBs	[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 10% (ten percent)of the total length.
(7) Safety and traffic management during construction	[Nil]	Payment shall be made on prorate basis every six months.
(8) Protection Works		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 05% (five percent) of the total length.
(a) Retaining Wall	8.92%	
(b) Breast Wall	13.96%	
(c) Gabion Wall	2.13%	
(d) Soil Nailing	0.04%	
(9) Site Clearance & Dismantling	[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 05% (five percent) of the total length.
(10) Other Works (turfing & seeding & Mulching)	0.29%	Unit of measurement is square metre.

1.3.5 Utility Shifting

Stage of Payment	Weightage	Payment Procedure
1	2	3
(i) EHT line	0%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of EHT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of poles 20%, (ii) Conductor stringing including laying of cable 30%, (iii) DTR erection if involved)-15% and (iv) Charging of line including dismantling and site clearance-35% (with DTR) and 50% without DTR)
(ii) ETH crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 4 crossings.
(iii) HT/LT line	15.3%	Unit of measurement is as per completed activities. Cost per

(including transformers if any)		activity hall be determine on pro-rate basis as per its weightage with reference to total cost of LT/HT line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is (i) Erection of poles 20%, (ii) Conductor stringing including laying of cable 30%, (iii) DTR erection if involved)-10% and (iv) Charging of line including dismantling and site clearance-40% (with DTR) and 50% without DTR)
(iv) HT/LT crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 10 crossings.
(v) Water pipeline	84.7%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)
(vi) Water pipeline crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for not less than 25% of the crossing subject to a minimum of 8 crossings.
(vii)Sewage lines	0%	Unit of measurement is as per completed activities. Cost per activity hall be determine on pro-rate basis as per its weightage with reference to total cost of pipe line. Payment shall be made for completed activity. (The average weightage of major activities (only for payment purpose) in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)
(viii)Sewage line crossing		Cost of each crossing shall be determined on pro-rate basis as per its weightage with reference to total no of crossings. Payment shall be made for completed activity. (The average weightage of major activities in shifting work is laying of pipe-50%, Charging of line including all miscellaneous works and dismantling and site clearance-50%)

2. Procedure for payment for Maintenance

2.1 The cost for maintenance shall be as stated inClause14.1.1.

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