Schedule - B

(See Clause 2.1)

Development of the Project Highway

1. Development of the Project Highway

Development of the Project Highways hall 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 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 carriageway shall 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	Namrei	96.400 km to 97.400 km	7	As per TSC	**2**
2	Razai	100.750 km to 101.00 km	7	As per TSC	**2**
3	Kharasom	109.600 km to 111.650 km	7	As per TSC	**2**
4	Kharasom	113.100 km to 113.500 km	7	As per TSC	**2**

(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

For Mountainous terrain design speed shall be the minimum design speed of 40-60 km/hr and for sharp curve and hair pin bend locations speed reduces up to 30kmph & 20 kmph respectively.

(iii) Improvement of the existing road geometrics

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

Sl. No.	Chainage	Type of Deficiency	Remarks (Design Speed in kmph)
1	96660	Built-up	30
2	96722	Built-up	30
3	96776	Built-up	30
4	96828	Built-up	30
5	96905	Built-up	30
6	97144	Built-up	30
7	97213	Built-up	25
8	100606	Built-up	30
9	100783	Built-up	30
10	100880	Built-up	30
11	100959	Built-up	30
12	101087	Built-up	30
13	101156	Built-up	30
14	110766.7	Built-up	30
15	110832.8	Built-up	30
16	110911.5	Built-up	30
17	110982.6	Built-up	30
18	111104.1	Built-up	30
19	111286.6	Built-up	30
20	111425.8	Built-up	30
21	112832.5	Built-up	30
22	113104.8	Built-up	30
23	113444.7	Built-up	30
24	113523.7	Built-up	30

In the following sections where improvement of the existing road geometrics to the 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	96.400 km to 97.400 km	Footpath on Covered Drains	2
2	100.750 km to 101.00 km	Footpath on Covered Drains	2
3	109.600 km to 111.650 km	Footpath on Covered Drains	2
4	113.100 km to 113.500 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. 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 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	19200
TYPICAL-2	2-lane with 1.5 m earthen shoulders with 1m covered drain on both side	3700
TYPICAL-2(A)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain on both side	5700
TYPICAL-2(B)	2-lane with 1.5 m earthen shoulders with 0.6 m lined drain and hill section on both side	2200
TYPICAL-3(A)	2-lane with 1.5 m earthen shoulders with breast wall on hill side	400
TYPICAL-4	2-lane with 1.5 m earthen shoulders with breast wall on hill side and W-beam crash barrier on valley side	800
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	3200
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	5900
TYPICAL-7	2-lane with 1.5 m earthen with retaining wall & W-beam crash barrier on both side	700
TYPICAL-7(A)	2-lane with 1.5 m earthen with Reinforced Earth Wall on both side	886
	Total length =	**42686**

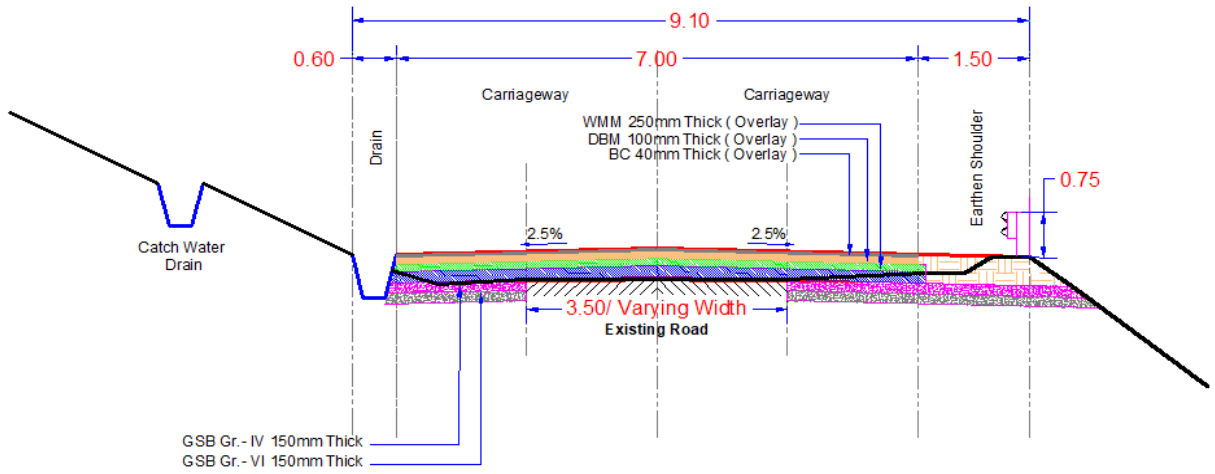
Typical Cross Section 1				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	95.700	96.400	700.000	679.000
2	99.000	100.750	1750.000	1687.000
3	101.000	101.600	600.000	572.000
4	103.800	105.700	1900.000	1781.000

5	106.000	106.480	480.000	466.000
6	106.480	106.500	20.000	6.000
7	114.450	115.100	650.000	629.000
8	115.500	116.600	1100.000	1065.000
9	117.600	118.200	600.000	579.000
10	119.000	119.900	900.000	886.000
11	120.600	121.200	600.000	572.000
12	122.300	124.430	2130.000	2081.000
13	124.430	124.470	40.000	5.000
14	124.470	124.500	30.000	30.000
15	125.900	128.300	2400.000	2337.000
16	130.700	131.700	1000.000	965.000
17	132.000	133.000	1000.000	972.000
18	133.000	134.800	1800.000	1737.000
19	136.000	137.500	1500.000	1458.000
			19200.000	18507.000
Typical Cross Section 2				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	96.400	97.400	1000.000	958.000
2	100.750	101.000	250.000	243.000
3	109.600	111.650	2050.000	1994.000
4	113.100	113.500	400.000	386.000
			3700.000	3581.000
Typical Cross Section 2A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	97.400	99.000	1600.000	1537.000
2	107.900	108.500	600.000	579.000
3	111.650	112.000	350.000	343.000
4	112.400	113.100	700.000	637.000
5	113.800	114.450	650.000	636.000
6	124.500	125.200	700.000	693.000
7	131.700	132.000	300.000	279.000
8	135.200	136.000	800.000	772.000
			5700.000	5476.000
Typical Cross Section 2B				

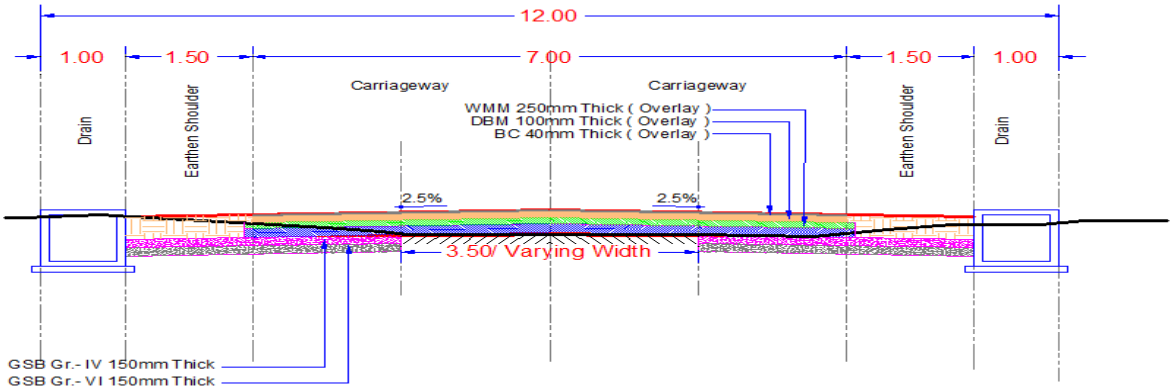
SL No	From	To	Length(m)	Length after deducting Culverts
1	106.500	106.800	300.000	293.000
2	118.200	119.000	800.000	786.000
3	121.200	122.300	1100.000	1093.000
			2200.000	2172.000
Typical Cross Section 3A				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	137.900	138.300	400.000	386.000
			400.000	386.000
Typical Cross Section 4				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	107.100	107.900	800.000	786.000
			800.000	786.000
Typical Cross Section 5				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	101.600	102.200	600.000	565.000
2	103.500	103.800	300.000	293.000
3	105.700	106.000	300.000	286.000
4	113.500	113.800	300.000	293.000
5	116.600	117.600	1000.000	986.000
6	125.200	125.900	700.000	693.000
			3200.000	3116.000
Typical Cross Section 6				
SL No	**From**	**To**	**Length(m)**	**Length after deducting Culverts**
1	102.200	103.000	800.000	779.000
2	103.000	103.100	100.000	79.000
3	106.800	107.100	300.000	286.000
4	108.500	109.600	1100.000	1051.000
5	115.100	115.500	400.000	379.000
6	128.300	130.700	2400.000	2316.000
7	134.800	135.200	400.000	386.000

8	137.500	137.900	400.000	393.000
			5900.000	5669.000
Typical Cross Section 7				
SL No	From	To	Length(m)	Length after deducting Culverts
1	119.900	120.600	700.000	693.000
			700.000	693.000
Typical Cross Section 7A				
SL No	From	To	Length(m)	Length after deducting Culverts
1	103.100	103.500	400.000	386.000
2	112.000	112.400	400.000	386.000
3	138.300	138.386	86.000	86.000
			886.000	858.000
Total length of Road			42686.00	m
Total length of Road after deducting culverts			41244.00	m

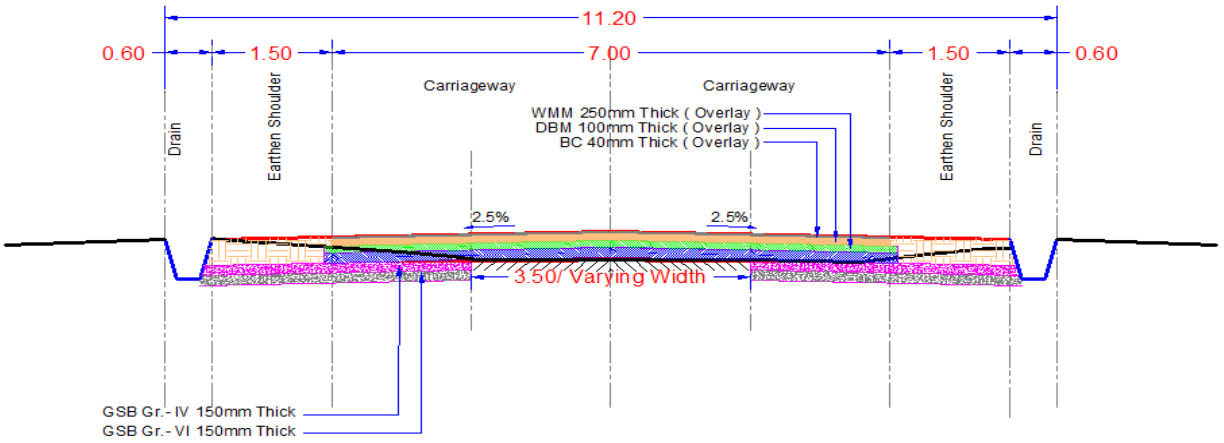
TYPICAL CROSS SECTION 1



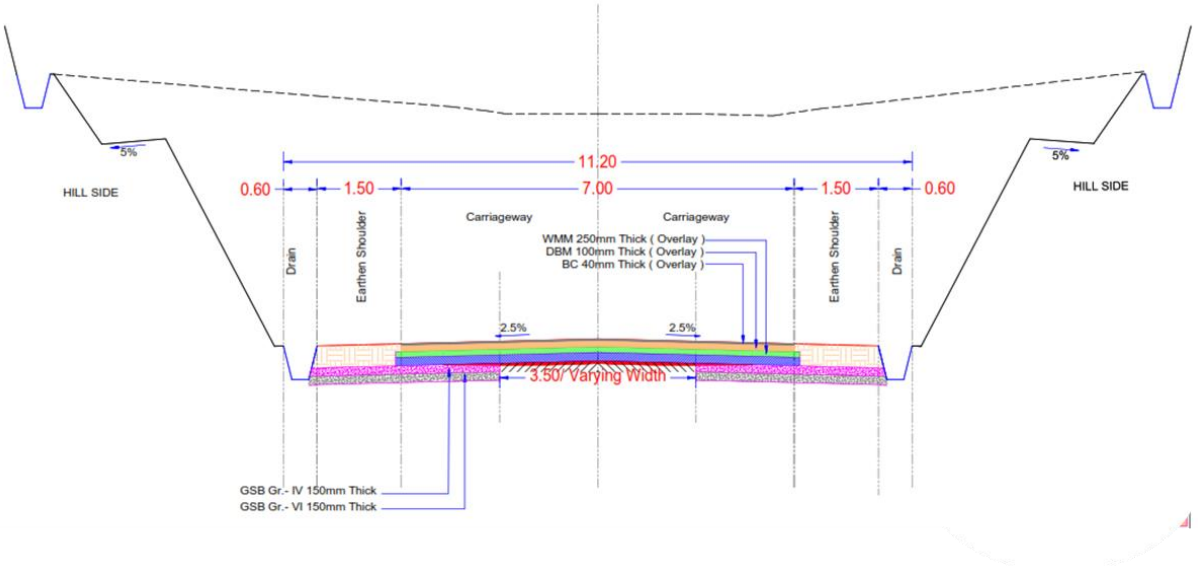
TYPICAL CROSS-SECTION 2



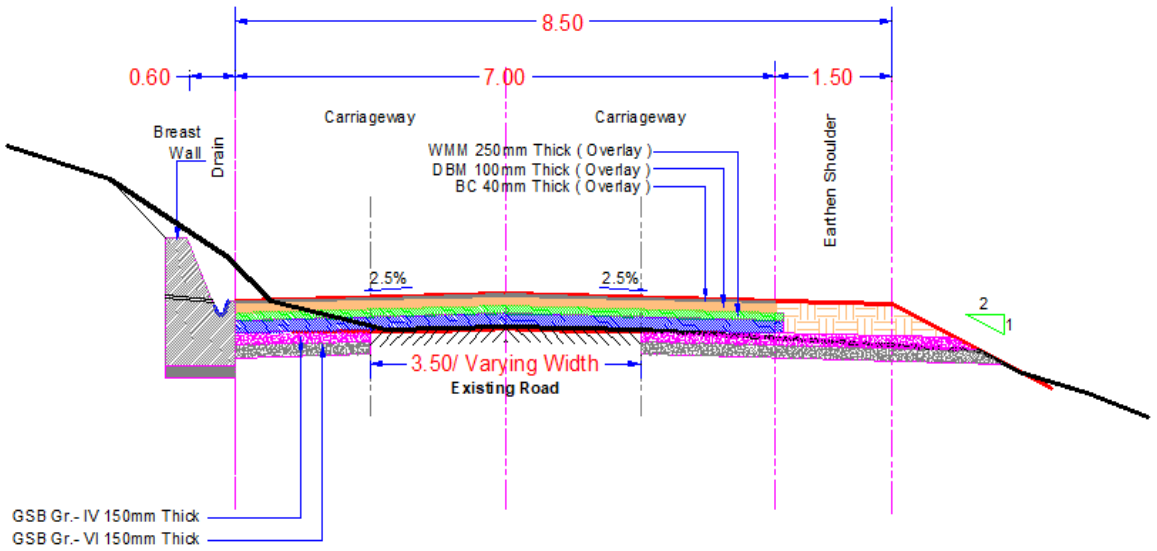
TYPICAL CROSS-SECTION 2A



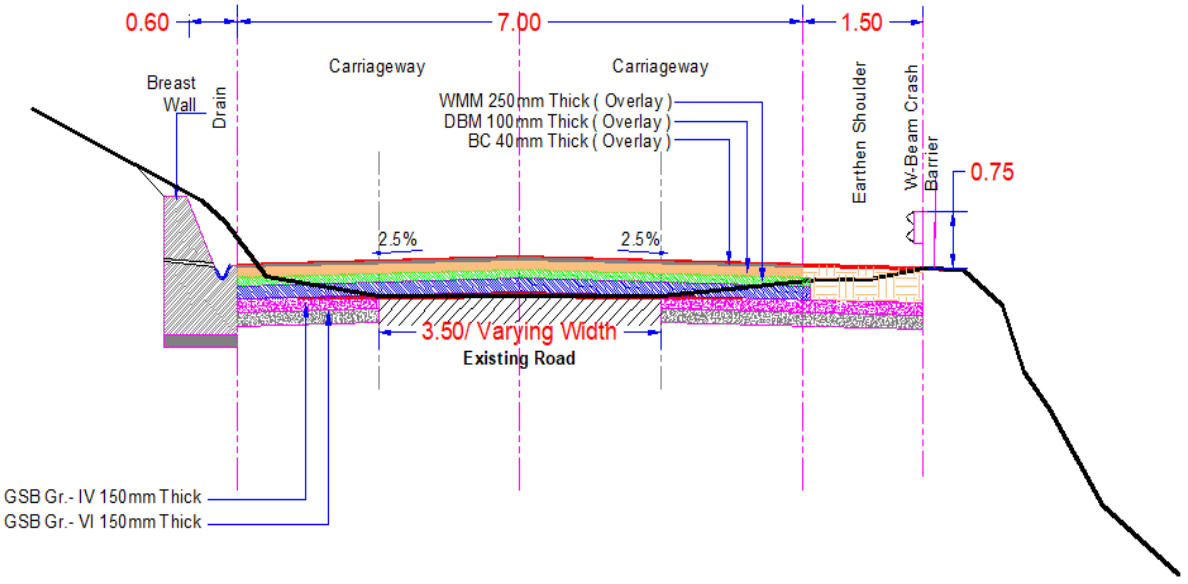
Typical Cross-section 2B



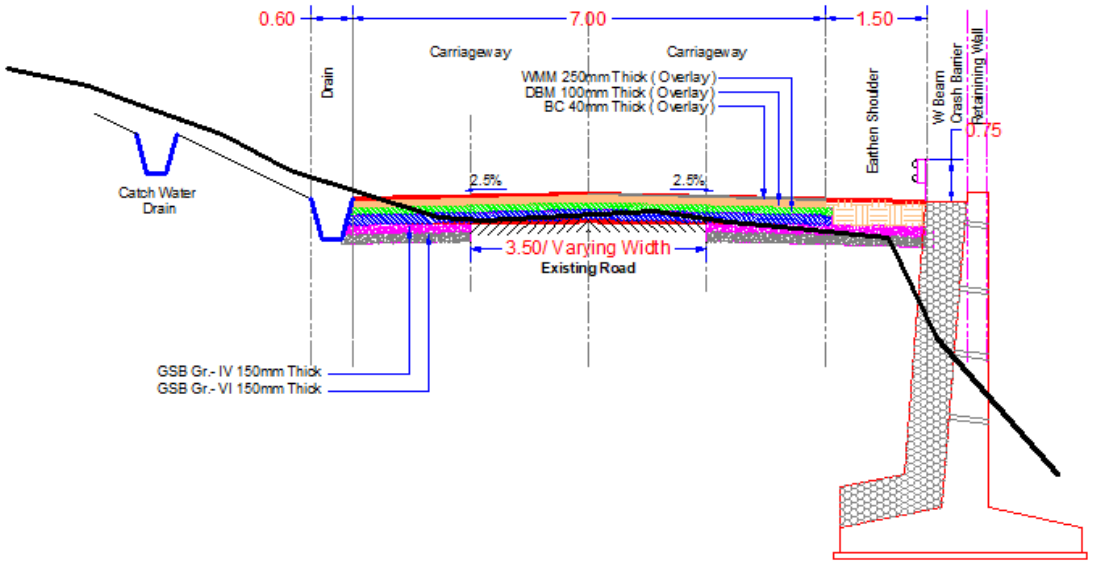
Typical Cross-section 3A



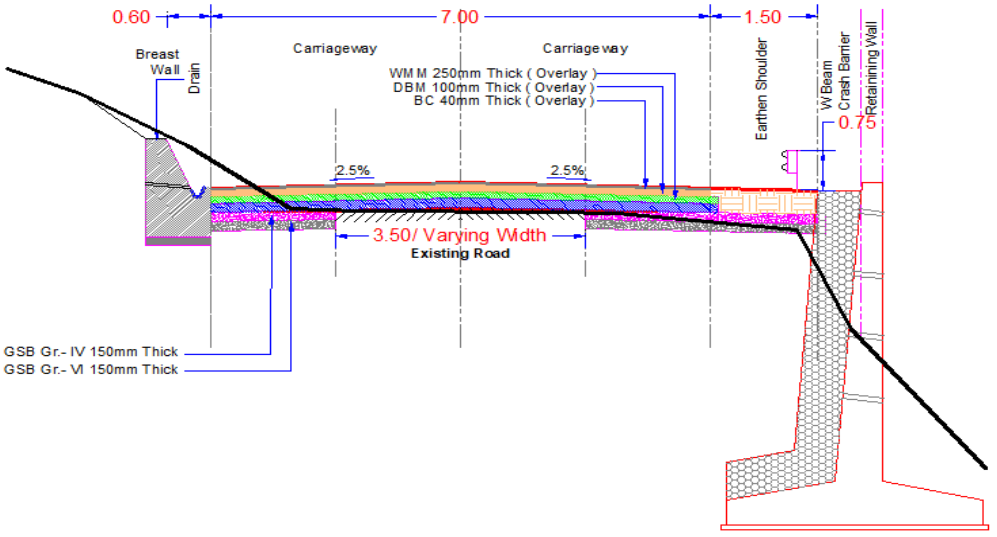
Typical Cross-section 4



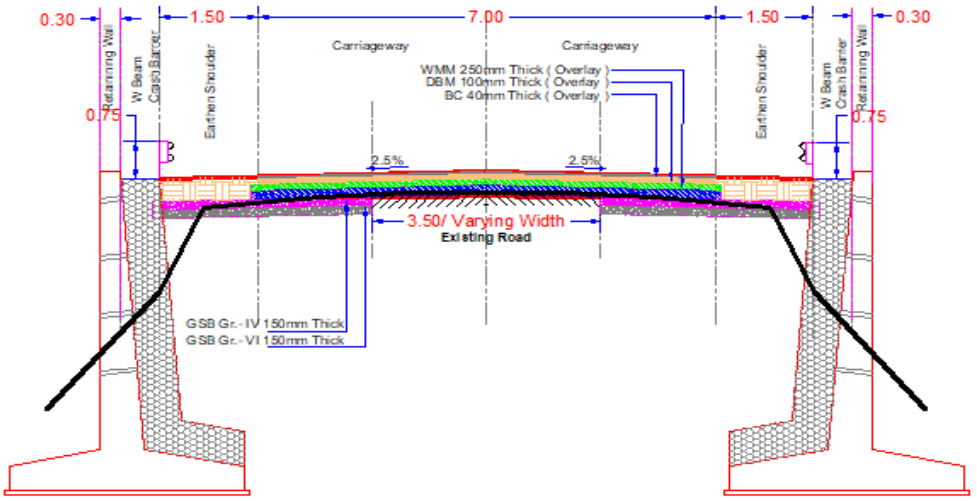
Typical Cross-section 5



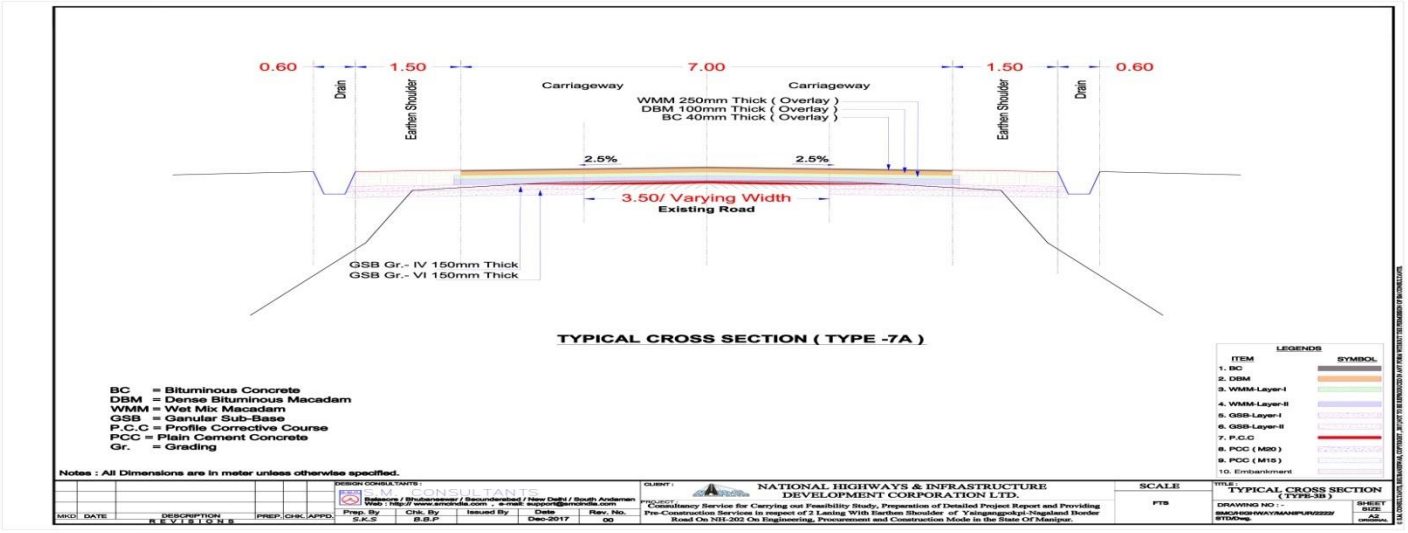
Typical Cross-section 6



Typical Cross-section 7



Typical Cross-section 7 A



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	Type of intersection	Other features	Remarks

	(Km)			
NIL				

Minor Intersections

Sl. No.	**Location**		**Type of intersection**	
	From Km	**Towards**	**Y-Junction**	**Cross Road**
1	100/830		100/830	Chingjui
2	109/730		109/730	Razai Khunou
3	110/480		110/480	Kharasom Village
4	113/470		113/470	Tusoam
5	138/386		138/386	Jessami Junction

(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	95.7	96.4	700	1	Reconstruction
2	96.4	97.4	1000	2	Reconstruction
3	97.4	99	1600	2A	Reconstruction
4	99	100.75	1750	1	Reconstruction
5	100.75	101	250	2	Reconstruction
6	101	101.6	600	1	Reconstruction
7	101.6	102.2	600	5	Reconstruction
8	102.2	103	800	6	Reconstruction
9	103	103.1	100	6	Reconstruction
10	103.1	103.5	400	7A	Reconstruction
11	103.5	103.8	300	5	Reconstruction
12	103.8	105	1200	1	Reconstruction
13	105	105.7	700	1	Reconstruction
14	105.7	106	300	5	Reconstruction
15	106	106.48	480	1	Reconstruction
16	106.48	106.5	20	1	Reconstruction
17	106.5	106.8	300	2B	Reconstruction
18	106.8	107.1	300	6	Reconstruction
19	107.1	107.9	800	4	Reconstruction
20	107.9	108.5	600	2A	Reconstruction
21	108.5	109.6	1100	6	Reconstruction
22	109.6	111.65	2050	2	Reconstruction
23	111.65	112	350	2A	Reconstruction
24	112	112.4	400	7A	Reconstruction
25	112.4	113.1	700	2A	Reconstruction
26	113.1	113.5	400	2	Reconstruction
27	113.5	113.8	300	5	Reconstruction
28	113.8	114.45	650	2A	Reconstruction
29	114.45	115.1	650	1	Reconstruction
30	115.1	115.5	400	6	Reconstruction
31	115.5	116.6	1100	1	Reconstruction
32	116.6	117.6	1000	5	Reconstruction
33	117.6	118.2	600	1	Reconstruction
34	118.2	119	800	2B	Reconstruction
35	119	119.9	900	1	Reconstruction
36	119.9	120.6	700	7	Reconstruction
37	120.6	121.2	600	1	Reconstruction

Sl.No.	Chainage		Length	Typical Cross-section	Improvement
	To	From			
38	121.2	122.3	1100	2B	Reconstruction
39	122.3	124.47	2170	1	Reconstruction
40	124.47	125.2	730	2A	Reconstruction
41	125.2	125.9	700	5	Reconstruction
42	125.9	128.3	2400	1	Reconstruction
43	128.3	130.7	2400	6	Reconstruction
44	130.7	131.7	1000	1	Reconstruction
45	131.7	132	300	2A	Reconstruction
46	132	133	1000	1	Reconstruction
47	133	134.8	1800	1	Reconstruction
48	134.8	135.2	400	6	Reconstruction
49	135.2	136	800	2A	Reconstruction
50	136	137.5	1500	1	Reconstruction
51	137.5	137.9	400	6	Reconstruction
52	137.9	138.3	400	3A	Reconstruction
53	138.3	138.386	86	7A	Reconstruction

6. RoadsideDrainage

DrainagesystemincludingsurfaceandsubsurfacedrainsfortheProjectHighway has been provided in the table given below:

RCC Covered Drain

Chainage (Km)		Net Length (m)
From	To	
96.400	97.400	958.000
100.750	101.000	243.000
109.600	111.650	1994.000
113.100	113.500	386.000
Total length =		**3581.000**

RR Masonry Trapezoidal Drain

Chainage (Km)		Side	Net Length (m)
From	To		
95.7	96.4	Trapezoidal PCC Drain on Hill side	700
97.4	99	Trapezoidal PCC Drain on both side	1600
99	100.75	Trapezoidal PCC Drain on Hill side	1750
101	101.6	Trapezoidal PCC Drain on Hill side	600
101.6	102.2	Trapezoidal PCC Drain on Hill side	600
102.2	103	Trapezoidal Drain in Breast Wall on Hill Side	800
103	103.1	Trapezoidal Drain in Breast Wall on Hill Side	100
103.5	103.8	Trapezoidal PCC Drain on Hill side	300
103.8	105.7	Trapezoidal PCC Drain on Hill side	1900
105.7	106	Trapezoidal PCC Drain on Hill side	300
106	106.48	Trapezoidal PCC Drain on Hill side	480

Chainage (Km)		Side	Net Length (m)
From	To		
95.7	96.4	Trapezoidal PCC Drain on Hill side	700
96.4	97.4	RCC Covered Drain on both side	1000
97.4	99	Trapezoidal PCC Drain on both side	1600
106.48	106.5	Trapezoidal PCC Drain on Hill side	20
106.5	106.8	Trapezoidal PCC Drain on both side	300
106.8	107.1	Trapezoidal Drain in Breast Wall on Hill Side	300
107.1	107.9	Trapezoidal Drain in Breast Wall on Hill Side	800
107.9	108.5	Trapezoidal PCC Drain on both side	600
108.5	109.6	Trapezoidal Drain in Breast Wall on Hill Side	1100
111.65	112	Trapezoidal PCC Drain on both side	350
112.4	113.1	Trapezoidal PCC Drain on both side	700
113.5	113.8	Trapezoidal PCC Drain on Hill side	300
113.8	114.45	Trapezoidal PCC Drain on both side	650
114.45	115.1	Trapezoidal PCC Drain on Hill side	650
115.1	115.5	Trapezoidal Drain in Breast Wall on Hill Side	400
115.5	116.6	Trapezoidal PCC Drain on Hill side	1100
116.6	117.6	Trapezoidal PCC Drain on Hill side	1000
117.6	118.2	Trapezoidal PCC Drain on Hill side	600
118.2	119	Trapezoidal PCC Drain on both side	800
119	119.9	Trapezoidal PCC Drain on Hill side	900
120.6	121.2	Trapezoidal PCC Drain on Hill side	600
121.2	122.3	Trapezoidal PCC Drain on both side	1100
122.3	124.47	Trapezoidal PCC Drain on Hill side	2170
124.47	125.2	Trapezoidal PCC Drain on both side	730
125.2	125.9	Trapezoidal PCC Drain on Hill side	700
125.9	128.3	Trapezoidal PCC Drain on Hill side	2400
128.3	130.7	Trapezoidal Drain in Breast Wall on Hill Side	2400
130.7	131.7	Trapezoidal PCC Drain on Hill side	1000
131.7	132	Trapezoidal PCC Drain on both side	300
132	133	Trapezoidal PCC Drain on Hill side	1000
133	134.8	Trapezoidal PCC Drain on Hill side	1800
134.8	135.2	Trapezoidal Drain in Breast Wall on Hill Side	400
135.2	136	Trapezoidal PCC Drain on both side	800
136	137.5	Trapezoidal PCC Drain on Hill side	1500
137.5	137.9	Trapezoidal Drain in Breast Wall on Hill Side	400
137.9	138.3	Trapezoidal Drain in Breast Wall on Hill Side	400
138.3	138.386	Trapezoidal PCC Drain on Hill side	86
		Total length =	**36919.00**

7. Design of Structures

(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	95.735	1 X 1.5	SLAB
2	96.025	1 X 1.5	SLAB
3	96.575	1 X 1.5	SLAB
4	96.845	1 X 1.5	SLAB
5	97.360	1 X 1.5	SLAB
6	97.525	1 X 1.5	SLAB
7	97.645	1 X 1.5	SLAB
8	97.750	1 X 1.5	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
9	97.875	1 X 1.5	SLAB
10	97.935	1 X 1.5	SLAB
11	99.080	1 X 1.5	SLAB
12	101.160	1 X 1.5	SLAB
13	101.250	1 X 1.5	SLAB
14	101.380	1 X 1.5	SLAB
15	101.880	1 X 1.5	SLAB
16	101.995	1 X 1.5	SLAB
17	102.070	1 X 1.5	SLAB
18	102.195	1 X 1.5	SLAB
19	102.945	1 X 3.0	SLAB
20	103.125	1 X 1.5	SLAB
21	104.085	1 X 1.5	SLAB
22	104.505	1 X 1.5	SLAB
23	104.830	1 X 3.0	SLAB
24	105.380	1 X 1.5	SLAB
25	106.000	1 X 1.5	SLAB
26	106.265	1 X 1.5	SLAB
27	107.700	1 X 1.5	SLAB
28	107.935	1 X 1.5	SLAB
29	108.095	1 X 1.5	SLAB
30	109.010	1 X 1.5	SLAB
31	109.410	1 X 1.5	SLAB
32	109.585	1 X 1.5	SLAB
33	109.740	1 X 1.5	SLAB
34	110.120	1 X 1.5	SLAB
35	110.585	1 X 1.5	SLAB
36	110.950	1 X 1.5	SLAB
37	111.195	1 X 1.5	SLAB
38	111.355	1 X 1.5	SLAB
39	111.620	1 X 1.5	SLAB
40	111.765	1 X 1.5	SLAB
41	112.350	1 X 1.5	SLAB
42	112.510	1 X 1.5	SLAB
43	112.860	1 X 1.5	SLAB
44	113.780	1 X 1.5	SLAB
45	115.420	1 X 1.5	SLAB
46	116.025	1 X 1.5	SLAB
47	116.300	1 X 1.5	SLAB
48	116.690	1 X 1.5	SLAB
49	119.605	1 X 1.5	SLAB
50	120.755	1 X 1.5	SLAB
51	121.165	1 X 1.5	SLAB
52	122.740	1 X 1.5	SLAB
53	123.450	1 X 1.5	SLAB
54	124.045	1 X 1.5	SLAB
55	126.245	1 X 1.5	SLAB
56	127.580	1 X 1.5	SLAB
57	127.835	1 X 1.5	SLAB
58	127.865	1 X 1.5	SLAB
59	128.440	1 X 2.0	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
60	128.515	1 X 1.5	SLAB
61	129.730	1 X 1.5	SLAB
62	129.840	1 X 1.5	SLAB
63	130.835	1 X 1.5	SLAB
64	130.975	1 X 1.5	SLAB
65	131.170	1 X 1.5	SLAB
66	131.730	1 X 1.5	SLAB
67	131.980	1 X 1.5	SLAB
68	132.565	1 X 1.5	SLAB
69	132.755	1 X 1.5	SLAB
70	132.915	1 X 1.5	SLAB
71	133.215	1 X 1.5	SLAB
72	133.385	1 X 1.5	SLAB
73	133.565	1 X 1.5	SLAB
74	133.790	1 X 1.5	SLAB
75	134.005	1 X 1.5	SLAB
76	134.675	1 X 1.5	SLAB
77	135.295	1 X 1.5	SLAB
78	135.575	1 X 1.5	SLAB
79	135.750	1 X 1.5	SLAB
80	135.910	1 X 1.5	SLAB
81	136.175	1 X 1.5	SLAB
82	136.340	1 X 1.5	SLAB
83	136.710	1 X 1.5	SLAB
84	136.920	1 X 1.5	SLAB
85	137.155	1 X 1.5	SLAB
86	137.455	1 X 1.5	SLAB
87	137.805	1 X 1.5	SLAB
88	138.000	1 X 1.5	SLAB
89	138.265	1 X 1.5	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	96.725	1 X 1.3	SLAB
2	97.175	1 X 1.5	SLAB
3	99.180	1 X 1.5	SLAB
4	99.240	1 X 1.5	SLAB
5	99.400	1 X 1.5	SLAB
6	100.655	1 X 1.0	SLAB
7	100.955	1 X 1.0	SLAB
8	101.600	1 X 1.0	SLAB
9	101.775	1 X 1.4	SLAB
10	102.830	1 X 3.0	SLAB
11	103.075	1 X 1.1	SLAB

Sl. No.	Culvert location	Type, span, height and width of existing culvert (m)	Repairs to be carried out [specify]
12	103.455	1 X 1.1	SLAB
13	103.685	1 X 1.1	SLAB
14	103.945	1 X 1.1	SLAB
15	104.205	1 X 1.2	SLAB
16	104.985	1 X 1.0	SLAB
17	105.250	1 X 1.0	SLAB
18	105.725	1 X 1.0	SLAB
19	107.995	1 X 1.0	SLAB
20	110.320	1 X 1.3	SLAB
21	113.485	1 X 1.0	SLAB
22	115.105	1 X 1.6	SLAB
23	115.305	1 X 1.7	SLAB
24	115.800	1 X 1.0	SLAB
25	116.135	1 X 1.5	SLAB
26	117.755	1 X 1.4	SLAB
27	117.965	1 X 1.4	SLAB
28	118.160	1 X 1.5	SLAB
29	118.235	1 X 1.5	SLAB
30	118.925	1 X 1.3	SLAB
31	121.020	1 X 1.4	SLAB
32	123.050	1 X 1.2	SLAB
33	124.435	1 X 1.4	SLAB
34	127.415	1 X 1.2	SLAB
35	128.315	1 X 1.3	SLAB
36	128.610	1 X 1.0	SLAB
37	128.690	1 X 1.5	SLAB
38	129.155	1 X 1.1	SLAB
39	131.275	1 X 1.2	SLAB
40	131.485	1 X 1.2	SLAB
41	132.260	1 X 1.1	SLAB
42	133.355	1 X 1.1	SLAB
43	134.275	1 X 2.5	SLAB
44	134.385	1 X 1.5	SLAB

(d) Additionalnewculvertsshallbeconstructedasperparticularsgiveninthe table below:

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
1	96.330	1 X 1.5	SLAB
2	97.275	1 X 1.5	SLAB
3	98.105	1 X 1.5	SLAB
4	98.365	1 X 1.5	SLAB
5	98.795	1 X 1.5	SLAB
6	98.885	1 X 1.5	SLAB
7	99.650	1 X 1.5	SLAB
8	99.765	1 X 1.5	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
9	99.935	1 X 3.0	SLAB
10	100.105	1 X 1.5	SLAB
11	100.320	1 X 1.5	SLAB
12	102.580	1 X 1.5	SLAB
13	103.835	1 X 1.5	SLAB
14	104.295	1 X 2.5	SLAB
15	104.450	1 X 1.5	SLAB
16	104.650	1 X 1.5	SLAB
17	105.077	1 X 1.5	SLAB
18	105.505	1 X 1.5	SLAB
19	105.860	1 X 1.5	SLAB
20	106.595	1 X 1.5	SLAB
21	106.820	1 X 1.5	SLAB
22	107.060	1 X 1.5	SLAB
23	107.380	1 X 1.5	SLAB
24	108.300	1 X 1.5	SLAB
25	108.550	1 X 1.5	SLAB
26	108.725	1 X 1.5	SLAB
27	108.775	1 X 1.5	SLAB
28	109.875	1 X 1.5	SLAB
29	110.830	1 X 1.5	SLAB
30	112.160	1 X 1.5	SLAB
31	113.195	1 X 1.5	SLAB
32	114.000	1 X 1.5	SLAB
33	114.190	1 X 1.5	SLAB
34	114.335	1 X 1.5	SLAB
35	114.535	1 X 1.5	SLAB
36	114.655	1 X 1.5	SLAB
37	114.985	1 X 1.5	SLAB
38	115.650	1 X 1.5	SLAB
39	115.955	1 X 1.5	SLAB

Sl. No.	Culvert Location	Span /Opening (m)	Remarks*
40	117.085	1 X 3.0	SLAB
41	118.500	1 X 1.5	SLAB
42	119.280	1 X 1.5	SLAB
43	120.200	1 X 1.5	SLAB
44	120.415	1 X 1.5	SLAB
45	120.605	1 X 1.5	SLAB
46	121.775	1 X 1.5	SLAB
47	122.315	1 X 1.5	SLAB
48	122.550	1 X 1.5	SLAB
49	124.250	1 X 1.5	SLAB
50	124.895	1 X 1.5	SLAB
51	125.875	1 X 1.5	SLAB
52	126.785	1 X 1.5	SLAB
53	127.230	1 X 1.5	SLAB
54	127.750	1 X 1.5	SLAB
55	128.100	1 X 1.5	SLAB
56	128.800	1 X 1.5	SLAB
57	129.470	1 X 1.5	SLAB
58	129.985	1 X 1.5	SLAB
59	130.455	1 X 1.5	SLAB
60	131.850	1 X 1.5	SLAB
61	134.895	1 X 1.5	SLAB
62	135.185	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) FloorprotectionworksshallbeasspecifiedintherelevantIRCCodesand 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	9
3	Hectometer Stones=	Nos	165
4	Delineators (100 cm long and circular shaped) + Hazard marker	Nos	1057
5	900 mm Octagonal	Nos	49
6	600 mm circular	Nos	588
7	900 mm Triangular	Nos	630
8	800 mm x 600 mm rectangular	Nos	777
9	Object Hazard Marker (one way)	Nos	486
10	Fluroscent Strips	Rolls	15

(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 Razai (Ch. 101.00 km)	16 m X 1.2 m (Double Pole)
2	At Kharasom (Ch. 110.00 km)	16 m X 1.2 m (Double Pole)
3	At Jessami (Ch. 138.300 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

Sl. No.	Design Chainage		Length (m)	Side	Remarks
	From	To			
1.	137.900	138.300	386.000	Hill side	The location and height of the breast wall shall be done as per the site condition and under guidance of Authority Engineer
2.	107.100	107.900	786.00	Hill side	
3.	786.00	786.00	779.000	Hill side	
4.	786.00	786.00	79.000	Hill side	
5.	786.00	786.00	286.000	Hill side	
6.	786.00	786.00	1051.000	Hill side	
7.	786.00	786.00	379.000	Hill side	
8.	786.00	786.00	2316.000	Hill side	
9.	786.00	786.00	386.000	Hill side	
10.	786.00	786.00	393.000	Hill side	
		Total Length =	6841.000		

b) Retaining Wall

Sl.No.	Design Chainage		Length(M)	Remark
	From	To		
1.	119.900	120.600	1386.00	The location and height of the retaining wall shall be done as per the site condition and under guidance of Authority Engineer
2.	102.200	103.000	779.000	
3.	103.000	103.100	79.000	
4.	106.800	107.100	286.000	
5.	108.500	109.600	1051.000	
6.	115.100	115.500	379.000	
7.	128.300	130.700	2316.000	
8.	134.800	135.200	386.000	
9.	137.500	137.900	393.000	
		Total Length =	**7055.00**	

c) W-Beam Crash Barrier

SL No	Design Chainage		Length (m)	Remark
	From	**To**		
1	95.700	96.400	679.000	The location of the W-Beam Crash Barrier shall be done as per the site condition and under guidance of Authority Engineer
2	99.000	100.750	1687.000	
3	101.000	101.600	572.000	
4	103.800	105.700	1781.000	
5	106.000	106.480	466.000	
6	106.480	106.500	6.000	
7	114.450	115.100	629.000	
8	115.500	116.600	1065.000	
9	117.600	118.200	579.000	
10	119.000	119.900	886.000	
11	120.600	121.200	572.000	
12	122.300	124.430	2081.000	
13	124.430	124.470	5.000	
14	124.470	124.500	30.000	
15	125.900	128.300	2337.000	
16	130.700	131.700	965.000	
17	132.000	133.000	972.000	
18	133.000	134.800	1737.000	
19	136.000	137.500	1458.000	
20	107.100	107.900	786.000	
21	101.600	102.200	565.000	
22	103.500	103.800	293.000	
23	105.700	106.000	286.000	
24	113.500	113.800	293.000	
25	116.600	117.600	986.000	
26	125.200	125.900	693.000	
27	119.900	120.600	693.000	
		Total length =	**23102.00**	

12. Special RequirementforHillRoads

a) Seeding and Mulching

SL No	Design Chainage		Length (m)	Height (m)	Area (sqm)	Remark
	From	To				
1	102.560	102.920	360	10	7200	Both Side
2	108.16	108.5	340	6	4080	
Total					11280	

b) Gabion Wall

Sl No	Chainage	Length
1	AT CHAINAGE 136/550 KM	170
2	AT CHAINAGE 111/800 KM	94
3	AT CHAINAGE 115/200 KM	71
4	AT CHAINAGE 121/300 KM	93
5	AT CHAINAGE 126/000 KM	64
6	AT CHAINAGE 131/800 KM	63
7	AT CHAINAGE 135/800 KM	382
	Total =	937.00

[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

(SeeClauses 10.1(iv)and19.3)

Contract PriceWeightages

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		**WIDENING AND STRENGTHENING OF EXISTING ROAD**		
	57.81%	*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.*	19.16%
		A2.2	*Sub-Base Course*	9.14%
		A2.3	*Non Bituminous Base Course*	6.47%
		A2.4	*Bituminous Base Course*	9.79%
		A2.5	*Wearing Coat*	4.28%
		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)*	8.97%
7	**0.00%**	**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.*	0.00%
		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.*	0.00%
		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 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.*	0.00%

		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	**0.00%**	**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)	*Foundation*	-	0.00%

			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%
			(vii)	*Approaches (including Retaining walls, stone pitching and protection works)*	-	0.00%
		A13.2	***(b)***	***RUB***		0.00%
			(i)	*Foundation*	-	0.00%
			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%
			(vii)	*Approaches (including Retaining walls, stone pitching and protection works)*	-	0.00%
14		**NEW ROB/RUB**				0.00%

		A14.1	***(a)***	***ROB***		0.00%
			(i)	*Foundation*	-	0.00%
			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat in case of ROB- wearing coat including expansion joint complete in all respects as specified.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%
			(vii)	*Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)*	-	0.00%
		A14.2	***(b)***	***RUB***		0.00%
			(i)	*Foundation*	-	0.00%
			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat in case of RUB- Rigid pavement under RUB including drainage facility complete in all respects as specified.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%

			(vii)	*Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)*	-	0.00%
15		**WIDENING AND REPAIR OF ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				0.00%
		A.15.1	*(i)*	*Foundation*	-	0.00%
			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat including expansion joint.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%
			(vii)	*Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)*	-	0.00%
16		**NEW ELEVATED SECTION/ FLYOVERS/ GRADE SEPARATORS**				0.00%
		A.16.1	*(i)*	*Foundation*	-	0.00%
			(ii)	*Sub-structure*	-	0.00%
			(iii)	*Super-structure(including bearings)*	-	0.00%
			(iv)	*Wearing Coat including expansion joint.*	-	0.00%
			(v)	*Miscellaneous items like handrails, crash barriers, road markings etc.*		0.00%
			(vi)	*Wing walls/ Return walls*		0.00%

			(vii)	*Approaches (including Retaining walls/ Reinforced earth walls, stone pitching and protection works)*	-	0.00%
17	**41.60%**	**OTHER WORKS**				0.00%
		A17.1	*Toll Plaza*			0.00%
		A17.2	*Road side drain*			4.24%
		A17.3	*Road signs, marking, Km stones, Safety devices etc.*			0.00%
			(a)	*Pavement Marking*		0.38%
			(b)	*Crash barrier/W metal crash barrier*		2.28%
			(c)	*Traffic Sign*		0.30%
			(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*		0.02%
			(f)	*Traffic impact Attenuators at Abutments and Piers traffic island*		0.00%
			(g)	*Road furniture (overhead signboard etc.)*		0.00%
			(h)	*Others including Toilet Blocks and Street lightining*		0.25%
		A17.4	*Project facilities*			0.00%
			(a)	*Truck lay-byes*		0.00%
			(b)	*Bus bays and Bus Shelter*		0.11%
			(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*	0.11%
			(c)	*Catchwater Drain*	0.00%
			(d)	*Retaining Wall*	23.77%
			(e)	*Reinforced earth wall*	0.00%
			(f)	*Breast wall*	8.15%
			(g)	*Soil Nailing*	0.02%
			(h)	*Gabion wall*	1.93%
18	**0.59**	*A18*	***Utility Shifting***		0.59%
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)	0.59%	(i) EHT line	0%
		(ii) EHT crossings	
		(iii) HT/LT line	46.33%
		(iv) HT/LT crossings	
		(v) Water pipeline	53.67%
		(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 Roadworks

Procedure for estimatingthe value ofroad 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]	

Stage of Payment	Percentage weightage	Payment Procedure
(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 prorata 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	**19.16%**	
(3) Sub-base Course	**9.14%**	
(4) Non bituminous Base course	**6.47%**	
(5) Bituminous Base course	**9.79%**	
(6) Wearing Coat	**4.28%**	
(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 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]	
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 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 culverts
Culverts (length <6m)	**8.97%**	

@ 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 xweightage for road work xweightage for bituminous workx (1/L)

Where,

P = Contract Price

L = Total length in km

Similarly, the rates perkm for otherstages shallbe workedout 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 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.	[Nil]	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.	[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 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		

Stage of Payment	Weightage	Payment Procedure
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 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.	[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 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

Stage of Payment	Weightage	Payment Procedure
		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]	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

Stage of Payment	Weightage	Payment Procedure
		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. 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.

Stage of Payment	Weightage	Payment Procedure
(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]	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	[Nil]	Wearing Coat: Payment shall be made on completion of

Stage of Payment	Weightage	Payment Procedure
expansion joints		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 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	4.24%	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.
(3) Road signs, markings, km stones, safety devices etc.	3.24%	
(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	0.11%	
d) Rest Area	[Nil]	
..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	23.77%	
(b) Breast Wall	8.15%	
(c) Toe Wall	[Nil]	
(d) Gabion Wall	1.93%	
(f) Soil Nailing	0.02%	
(g) Parapet wall	[Nil]	
(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 & Hydro seeding and mulching etc.)	0.12%	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 (including transformers if any)	46.33%	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 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	53.67	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. ProcedureforpaymentforMaintenance

2.1 The cost formaintenanceshall be as stated inClause14.1.1.

2.2 Paymentfor Maintenanceshallbemadein quarterly instalments in accordance with the provisions of Clause 19.7.