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## 9 PROJECT PROPOSALS

### 9.1 GENERAL

The proposed project corridor is widening of existing 2-lane stretch of NH-37 to 4-lane roads and Greenfield alignment in the state of Assam. Cross Sections have been developed based on existing section and Geometry of the project corridor. Details of proposed cross sections are provided below:

### 9.2 LIST OF TYPICAL CROSS SECTION

*Table 9-1: Typical Cross Section*

S. No	Description	TCS No.
1	4 Lane Undivided Carriageway (Bypass)	I
2	4 Lane Undivided Carriageway (Existing Road)	II
3	4 Lane Undivided Carriageway With Truck Parking (Existing Road)	III
4	4 Lane Divided Carriageway for approaches to VUP with slip roads on both sides	IV
5	4 Lane Undivided Carriageway (Existing Road)	V

### 9.3 TYPICAL CROSS SECTIONS

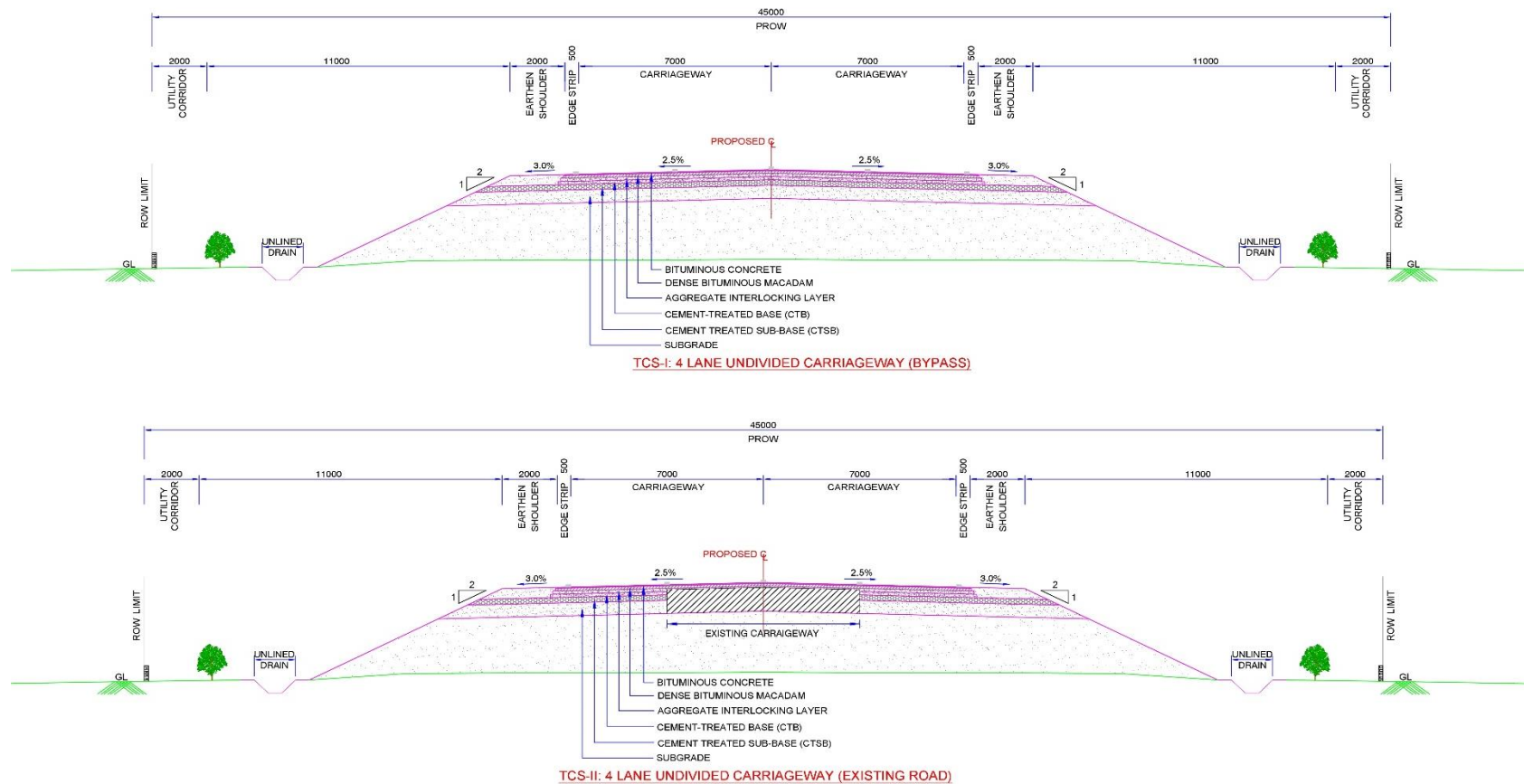


Figure 9-1: TCS-I & TCS-II

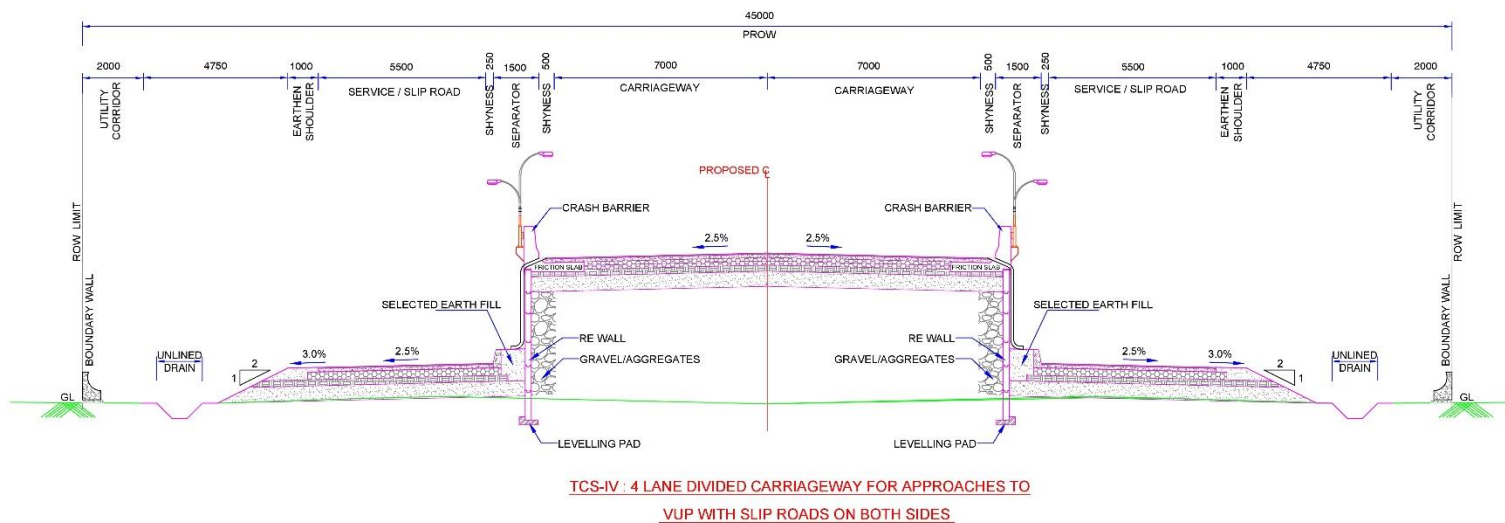
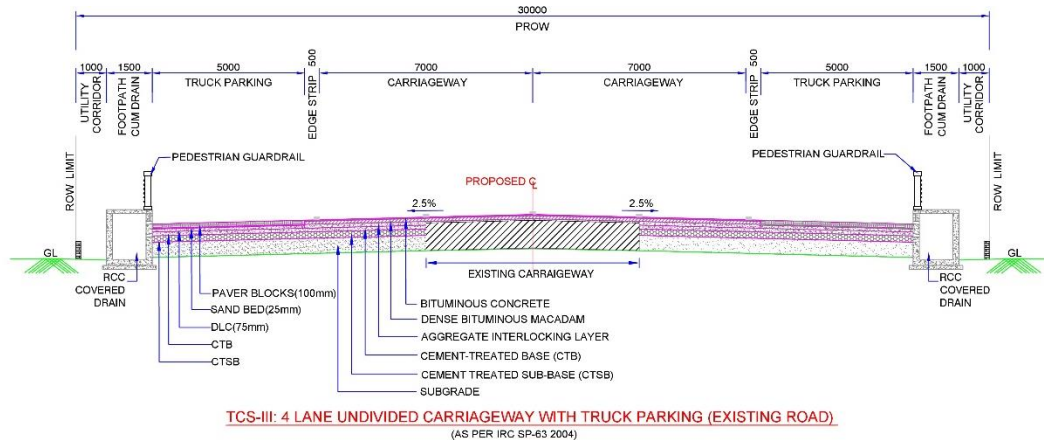


Figure 9-2: TCS-III & TCS-IV

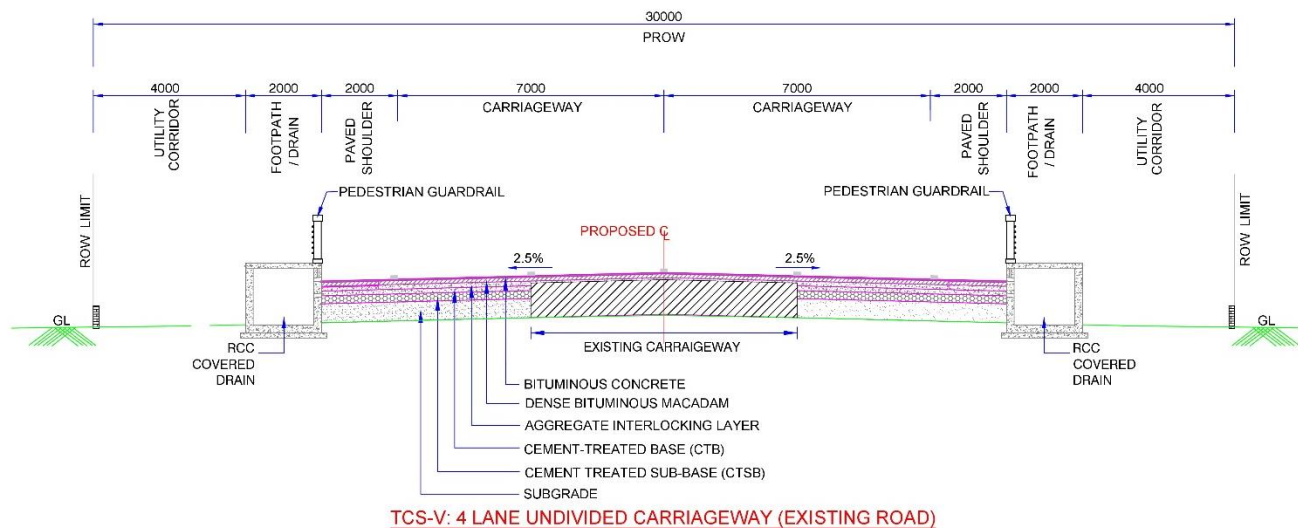


Figure 9-3: TCS-V

## 9.4 TYPICAL CROSS SECTION SCHEDULE

The project stretch under study has multi-dimensional facets in terms of geometry, pavement condition, existing utilities, religious structures, etc. and considering all these aspects the section-wise policy is adopted based on the initial investigations. The applicable typical cross-sections along the project corridor is summarized in Table below:

Table 9-2: Applicable Typical Cross Sections

Sl No.	Chainage (Km)		Length(km)	TCS Type
	From	To		
1	0	5.440	5.440	I
2	5.440	5.870	0.430	IV
3	5.870	12.430	6.560	I
4	12.430	12.830	0.400	II
5	12.830	13.890	1.060	III
6	13.890	14.380	0.490	V

## 9.5 EXISTING/PROPOSED STRUCTURES

### 9.5.1 Details of ROB's

There is only one newly proposed ROB , all along the project stretch of package-VII. Details of existing/proposed ROB's and recommendations are provided in table below:

Table 9-3: List of ROB's


S. No	Design Chainage (Km)	Package	Existing Span Arrangement (m)	Recommendation
1	4.624	VII	1 x 20 +2 x 37.280 + 1 x 20	New Construction

### 9.5.2 Details of Major Bridges

All along the project stretch of package-VII there are 3 major bridges. Details of existing/proposed Major bridges are provided in table below:

Table 9-4: list of Major Bridges

S. No	Design Chainage (Km)	Package	Existing Span Arrangement(m)	Proposed Span Arrangement(m)	Recommendation
1	0.526	VII	-	3 x 35	New Construction

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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S. No	Design Chainage (Km)	Package	Existing Span Arrangement(m)	Proposed Span Arrangement(m)	Recommendation
2	2.893		-	3 x 37.5	New Construction
3	5.322		-	3 x 37.5	New Construction

### 9.5.3 Details of Minor Bridges

A total of 9 existing/proposed minor bridges are present along the project corridor of package-VII. Proposals for the minor bridges are provided below:


*Table 9-5: List of Minor Bridges*

S. No	Design Chainage (Km)	Package	Existing type	Existing Span Arrangement(m)	Proposed type	Proposed Span (m)	Recommendation
1	0.742	VII	-	-	IGL Gas Line	1 x 20	New Construction
2	1.768		-	-	MIB	1 x 15	New Construction
3	6.313		-	-	MIB	1 x 15	New Construction
4	7.193		-	-	MIB	1 x 6	New Construction
5	8.870		-	-	MIB	1 x 6	New Construction
6	9.160		-	-	MIB	1 x 6	New Construction
7	10.707		-	-	MIB	1 x 10	New Construction
8	11.218		-	-	MIB	2 x 7.5	New Construction
9	14.062		Solid Slab	1 x 11	MIB	1 x 12	D & R

### 9.5.4 Details of Grade Separator Structures

Underpasses are provided at locations where roads such as National Highways, State Highways & Major District Roads etc. are intersected with project corridor and locations where movement of local traffic is observed. List of Existing & Proposed Grade Separator Structures are provided below:



	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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*Table 9-6: SVUP Locations*

S. No	Design Chainage (Km)	Package	Existing type	Existing Span Arrangement(m)	Proposed type	Proposed Span (m)	Recommendation
1	2.833	VII	-	-	SVUP	1 x 7 x 4	New Construction
2	3.728		-	-	SVUP	1 x 7 x 4	New Construction

*Table 9-7: LVUP Locations*


S. No	Design Chainage (Km)	Package	Existing type	Existing Span Arrangement(m)	Proposed type	Proposed Span (m)	Recommendation
1	3.886	VII	-	-	LVUP	1 x 12 x 4	New Construction
2	4.212		-	-	LVUP	1 x 12 x 4	New Construction
3	5.414				LVUP	1 x 12 x 4	New Construction

*Table 9-8: VUP locations*

S. No	Design Chainage (Km)	Package	Existing type	Existing Span Arrangement(m)	Proposed type	Proposed Span (m)	Recommendation
1	2.999	VII	-	-	VUP	1 x 20 x 5.5	New Construction
2	5.622		-	-	VUP	1 x 20 x 5.5	New Construction

*Table 9-9: Box Underpass Locations*

S. No	Design Chainage (Km)	Package	Existing type	Existing Span Arrangement(m)	Proposed type	Proposed Span (m)	Recommendation
1	7.906	VII	-	-	BOX UP	1 x 4.0	New Construction

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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### 9.5.5 Details of Proposed Culverts

(a) Box Culverts:


Details of the exiting Box Culverts along the project corridor are provided as below:

*Table 9-10: Details of proposals for Box Culverts*

S. No	Design Chainage (Km)	Package	Existing Type	Existing Span Arrangement(m)	Proposed Type	Proposed Span Arrangement(m)	Recommendation
1	0.043	VII	-	-	BC	1 x 3	New Construction
2	0.207		-	-	BC	1 x 3	New Construction
3	0.341		-	-	BC	1 x 3	New Construction
4	1.254		-	-	BC	1 x 2	New Construction
5	1.652		-	-	BC	1 x 2	New Construction
6	1.973		-	-	BC	1 x 2	New Construction
7	2.143		-	-	BC	1 x 2	New Construction
8	2.440		-	-	BC	1 x 2	New Construction
9	3.418		-	-	BC	1 x 2	New Construction
10	3.646		-	-	BC	1 x 2	New Construction
11	3.893		-	-	BC	1 x 2	New Construction
12	4.018		-	-	BC	1 x 5	New Construction
13	4.340		-	-	BC	1 x 3	New Construction
14	4.847		-	-	BC	1 x 2	New Construction
15	5.126		-	-	BC	1 x 2	New Construction
16	5.920		-	-	BC	1 x 2	New Construction

S. No	Design Chainage (Km)	Package	Existing Type	Existing Span Arrangement(m)	Proposed Type	Proposed Span Arrangement(m)	Recommendation
17	6.190		-	-	BC	1 x 2	New Construction
18	6.773		-	-	BC	1 x 3	New Construction
19	7.540		-	-	BC	1 x 2	New Construction
20	7.770		-	-	BC	1 x 2	New Construction
21	8.055		-	-	BC	1 x 2	New Construction
22	8.443	VII	-	-	BC	1 x 2	New Construction
23	9.410		-	-	BC	1 x 2	New Construction
24	9.646		-	-	BC	1 x 2	New Construction
25	9.973		-	-	BC	1 x 4	New Construction
26	10.396		-	-	BC	1 x 2	New Construction
27	10.940		-	-	BC	1 x 2	New Construction
28	11.788		-	-	BC	1 x 2	New Construction
29	12.090		-	-	BC	1 x 2	New Construction
30	12.530		Slab Culvert	1 x 2	BC	1 x 2	D & R
31	12.932		Slab Culvert	1 x 2	BC	1 x 2	D & R
32	13.247		Slab Culvert	1 x 2	BC	1 x 2	D & R
33	13.607		Slab Culvert	1 x 2	BC	1 x 2	D & R

(b) Pipe Culverts:

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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S. No	Design Chainage (km)	Package	Existing Type	Proposed Type	Span Arrangement(m)	Recommendation
Nil						

## 9.6 SUMMARY OF STRUCTURES

Summary of Existing/Proposed Structures along the project corridor are provided below:

*Table 9-11: Summary of Existing/Proposed Structures*


S. No	Type of Structure	Existing No's	Proposed No's	Total
1	Box Culvert	SC=4	29	33
2	Box Structure	0	1	1
3	SVUP	0	2	2
4	LVUP	0	5	5
5	VUP	0	0	0
6	MIB	Solid Slab=1	8	9
7	MJB	0	3	3
8	ROB	0	1	1
9	Pipe Culverts	0	0	0
10	Slab Culverts	0	0	0
<b>Total</b>		<b>5</b>	<b>49</b>	<b>54</b>

## 9.7 SLIP ROADS, SERVICE ROADS AND TRUCK PARKING

Slip roads, service roads and Truck Parking were proposed at following locations to move the local traffic along the proposed highway and to make traffic to flow freely on main carriage.

*Table 9-12: Service Road Locations*

S. No	Design Chainage (Km.)		Package	Design Length (kms)	Width of carriageway	Remarks
	From	To				
Nil						

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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*Table 9-13: Slip Road Locations*

S. No	Design Chainage (Km.)		Package	Design Length (km)	Width of Carriageway (m)	Remarks
	From	To				
1	5.440	5.870	VII	0.430	5.75	BHS

*Table 9-14: Truck Parking Locations*

S. No	Design Chainage (Km.)		Package	Design Length (km)	Width of Parking Lane (m)	Remarks
	From	To				
1	12.700	13.700	VII	1.00	5.00	BHS

## 9.8 REALIGNMENTS

Realignments were proposed at the following locations where the existing road has substandard curves.

*Table 9-15: Realignment Locations*


S. No	Design Chainage (Km.)		Package	Design Length (kms)	Remarks
	From	To			
1	13.400	13.600	VII	0.200	Substandard Curv

## 9.9 BYPASSES

Bypasses were proposed at following locations where existing road is passing through built-up area.

*Table 9-16: Bypass Locations*

S. No	Design Chainage (Km)		Length (km)	Location
	From	To		
1	0.020	5.634	5.614	Karimganj bypass
2	5.634	12.400	6.766	Fakirabazar bypass

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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### 9.10 TOLL PLAZAS

No toll plazas have been proposed at mid-block sections of package-VI of the proposed project corridor.

S. No	Package	Design chainage (Km)	Remarks
Nil			

### 9.11 BUS-BAYS AND BUS SHELTERS

Bus bays/shelters are proposed at built up areas. The following are the proposed bus bays/shelters.

*Table 9-17: Bus Shelter Locations*

S. No	Design chainage LHS (Km)	Design chainage RHS (Km)	Package	Name of Village	Pedestrian Shelter Length (m)
1	3.930	3.930	VII	Inathpur	15.0
3	7.130	7.130		Dharakuna	15.0
4	9.260	9.260		Jarua	15.0
5	12.330	12.330		Jarapata	15.0


*Table 9-18: Bus Bays locations*

S. No	Design chainage LHS (Km)	Design chainage RHS (Km)	Package	Name of Village	Pedestrian Shelter Length (m)
2	5.670	5.670	VII	Fakirabazar	15.0

### 9.12 REST AREA

*Table 9-19: Rest area locations*

S. No	Design chainage LHS (Km)	Design chainage RHS (Km)	Package	Name of Village
1	12.9	12.9	VII	Jarapata

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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## 9.13 RETAINING WALL


Table 9-20: Toe Wall locations

S.No.	Design Chainage (Km)		Length (m)	Side	Height (m)	Retaining Structure/Toe wall	Remarks
	From	To					
1	0.150	0.460	310	LHS	2.7	Retaining Structure/Toe wall	Average Height is mentioned
2	0.590	0.800	210	LHS	2.2		
3	1.600	1.940	340	LHS	1.7		
4	2.600	2.830	230	LHS	3.0		
5	2.950	3.380	430	LHS	4.1		
6	3.620	4.060	440	LHS	1.6		
7	4.130	4.230	100	LHS	1.8		
8	4.300	4.570	270	LHS	5.8		
9	4.670	5.270	600	LHS	5.0		
10	5.370	5.590	220	LHS	5.3		
11	5.700	5.960	260	LHS	5.0		
12	6.200	6.310	110	LHS	1.2		
1	0.150	0.460	310	RHS	3.0		
2	0.590	0.800	210	RHS	1.8		
3	1.600	1.940	340	RHS	1.3		
4	2.540	2.830	290	RHS	3.1		
5	2.950	3.340	390	RHS	3.7		
6	3.730	4.570	840	RHS	2.3		
7	4.670	5.270	600	RHS	5.6		
8	5.370	5.590	220	RHS	5.3		
9	5.700	5.960	260	RHS	5.1		
10	6.200	6.310	110	RHS	1.3		

## 9.14 RE WALL

Table 9-21: RE Wall locations

S. No	Chainage (Km.)		Length (m)	TCS Type	Remarks
	From	To			
1	5.440	5.870	430	IV	

	<b>Consultancy services for preparation of DPR and Pre-Construction services from (i) Silchar ISBT (Start point of Silchar Bypass) to junction of NH-37 &amp; NH-6 at Dhaleshwari, (ii) End of proposed Badarpur bypass to Churaibari (Assam-Tripura border), (iii) Spur from NH-8 near Karimganj to Sutarkandi (Package-VII)</b>	<b>PROJECT PROPOSALS</b>
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## 9.15 LINED DRAINS

*Table 9-22: Lined Drains*

S. No	Chainage (Km.)		Length (m)	TCS Type
	From	To		
1	12.830	13.830	1000	III