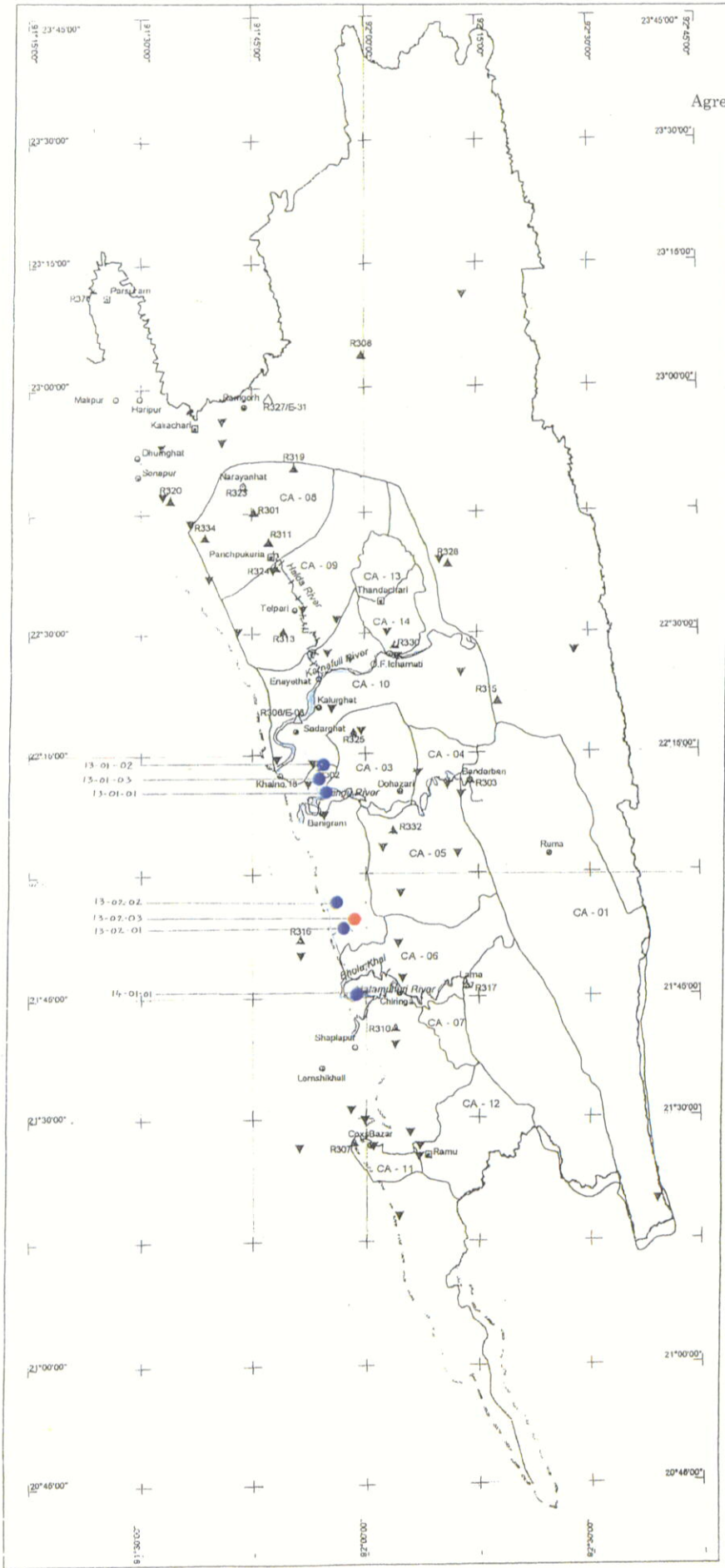


Figure 2.3.2-8

# Chittagong Area Model

Agreement on the bridges targeted for the local study



**LEGEND:**

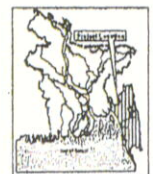
- International Boundary
- Catchment Boundary
- Model Boundary
- Schematized River
- Cross Section
- CA-11 Name of the Catchment Area
- Rainfall Station
- Rainfall and Evaporation
- Water Level Station
- Water Level and Discharge
- Ground Water Well
- Bridges on the River
- Bridges built on the catchments area



Scale :

9 0 9 18 27 Kilometers

Bangladesh Transverse Mercator Projection



SWMC

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (1/9)**

No.	1	2	3	4	5	6	7	8	9	10	
District	Dhaka	Dhaka	Dhaka	Dhaka	Dhaka	Gazipur	Gazipur	Munshigonj	Munshigonj	Munshigonj	
Number of Bridges	1	2	3	4	5	1	2	1	2	3	
Bridge Code	01-01-01	01-01-02	01-01-03	01-02-01	01-04-01	02-00-02	02-02-02	03-01-01	03-02-01	03-03-01	
Thana	Savar	Savar	Savar	Dhamrai	Nawabgonj	Sadar	Kaligonj	Sadar	Shirajdikhan	Gazaria	
Hydrological Zone	River	River	River	River	Catchment	Catchment	River	Catchment	Catchment	River	
Bridge Length (m)	50	100	120	90	75	50	60	40	80	100	
Span Length (m)	25+25	25+25+25+25	6@20	20+25+25+20	25+25+25	25+25	20+20+20	20+20	20+20+20+20	25+25+25+25	
Navigation Clearance (m)	2.5	1.5	1.5	2.5	2.0	1.5	1.0	1.5	2.0	1.0	
N.H.W.L (m) (Return Period One Year)	4.7	6.5	3.7	5.3	3.6	5.4	5.2	4.2	5.3	4.5	
H.W.L (m) Existing Maximum (50 Years Return Period Floods)	6.7	7.5	4.7	6.7	5.2	6.2	6.0	5.2	6.5	6.5	
Bridge Height (m)	9.8	9.6	6.8	9.8	7.8	8.3	7.6	7.3	9.1	8.1	
Approach Height (m)	2.8 (9.6)	0.9 (3.0)	3.2 (4.0)	1.5 (5.6)	1.5 (4.0)	2.5 (5.0)	3.4 (6.0)	2.0 (4.9)	2.0 (5.6)	2.7 (8.8)	
(Abutment Height)	2.6 (9.0)	3.0 (7.5)	1.2 (5.5)	1.5 (5.6)	0.0 (5.0)	2.3 (5.0)	3.0 (5.0)	2.0 (4.9)	0.5 (5.6)	2.0 (4.6)	
Pier Height (m) (Maximum Height)	7.7	7.8	3.2	5.2	7.6	9.2	6.9	5.8	7.4	7.9	
Geological Zone	NW-2	NW-2	NW-2	NW-2	NW-3	NW-2	NW-2	NW-3	NW-3	NW-3	
Geology (Boring Holes)	BH-1	Sort	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	
		h (m)	16	13.5	12	12	12	12	12	12	
	BH-2	N-value	20	25	25	25	25	25	25	25	25
		Sort	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
	BH-3	h (m)	16.5	11	11	11	11	13.3	13.3	13.3	13.3
		N-value	30	25	25	25	25	20	20	20	20
Pile Length (m)	15.0	Sort	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	
		h (m)	14	14	14	14	14	14	14	14	
Pile Length (m)	15.0	N-value	26	26	26	26	26	26	26	26	
		Sort	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	
Remarks	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	
Selection	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	

**Table 2.3.2.2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (2/9)**

No.	11	12	13	14	15	16	17	18	19	20
<b>District</b>	Munshigonj	Munshigonj	Munshigonj	Habigonj	Habigonj	Habigonj	Habigonj	Habigonj	Moulvibazar	Moulvibazar
<b>Number of Bridges</b>	4	5	6	1	2	3	4	5	1	2
<b>Bridge Code</b>	03-03-02	03-05-01	03-06-01	04-00-01	04-02-01	04-04-01	04-04-02	04-06-01	05-01-01	05-01-02
<b>Thana</b>	Gazaria	Lohajang	Sreenagar	Bahubal	Madhabpur	Nabigonj	Nabigonj	Azmirigonj	Komolgonj	Komolgonj
<b>Hydrological Zone</b>	River	River	River	River	Catchment	Catchment	River	Catchment	River	River
<b>Bridge Length (m)</b>	80	50	35	30	75	65	90	40	75	60
<b>Span Length (m)</b>	20+20+20+20	25+25	15+20	15+15	25+25+25	20+25+20	20+25+25+20	20+20	25+25+25	20+20+20
<b>Navigation Clearance (m)</b>	1.0	1.5	1.0	1.0	2.0	2.0	1.5	1.5	1.5	1.0
<b>N.H.W.L (m) (Return Period One Year)</b>	4.0	3.9	4.0	2.7	2.9	4.5	4.9	4.5	2.0	3.0
<b>H.W.L (m) Existing Maximum (50 Years Return Period Floods)</b>	5.0	7.2	5.0	6.4	3.7	6.6	6.0	5.6	5.2	4.8
<b>Bridge Height (m)</b>	6.6	9.3	6.6	8.0	6.3	9.2	8.1	7.7	7.3	6.4
<b>Approach Height (m)</b>	1.0 (3.5)	2.0 (5.0)	1.5 (3.7)	2.6 (4.9)	2.5 (6.7)	2.5 (5.7)	0.0 (5.6)	1.5 (4.9)	1.5 (4.9)	0.7 (3.9)
<b>(Abutment Height)</b>	0.6 (3.0)	2.2 (6.0)	1.5 (4.9)	2.5 (4.9)	1.0 (4.9)	2.5 (5.7)	1.3 (5.6)	1.7 (4.9)	3.2 (4.9)	2.0 (3.9)
<b>Pier Height (m) (Maximum Height)</b>	7.8	9.0	6.5	9.5	7.3	8.6	11.7	8.2	13.0	8.2
<b>Geological Zone</b>	NW-3	NW-3	NW-3	NE-2	NE-2	NE-2	NE-2	NE-2	NE-1	NE-1
<b>Geology (Boring Holes)</b>	Sort	Sand								
	h (m)	16								
	N-value	34								
	Sort	Sand								
	h (m)	16								
	N-value	35								
<b>Remarks</b>	Sort	----								
	h (m)	----								
	N-value	----								
<b>Pile Length (m)</b>	10.0	14.0	13.0	15.0	15.0	13.0	14.0	13.0	7.0	13.0
<b>Remarks</b>	Pile Bent						Pile Bent			
<b>Selection</b>	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (3/9)**

No.	21	22	23	24	25	26	27	28	29	30
<b>District</b>	Moulvibazar	Moulvibazar	Moulvibazar	Chandpur	Chandpur	Chandpur	Chandpur	Chandpur	Chandpur	B. Baria
<b>Number of Bridges</b>	3	4	5	1	2	3	4	5	6	1
<b>Bridge Code</b>	05-03-02	05-04-01	05-05-01	06-01-02	06-02-01	06-03-02	06-04-01	06-06-01	06-06-02	07-01-01
<b>Thana</b>	Sreemangol	Barlekha	Rajnagar	Sadar	Fardigonj	Kachua	Mattlab	Shahraati	Shahraati	Akhaura
<b>Hydrological Zone</b>	River	River	Catchment	Catchment	Catchment	Catchment	Catchment	Catchment	River	Catchment
<b>Bridge Length (m)</b>	40	45	25	25	50	20	20	20	130	25
<b>Span Length (m)</b>	20+20	15+15+15	25	25	25+25	20	20	20	20+20+25 +25+20+20	25
<b>Navigation Clearance (m)</b>	1.0	2.0	1.5	1.5	1.0	1.5	1.5	1.0	2.0	1.5
<b>N.H.W.L (m) (Return Period One Year)</b>	0.6	4.1	3.4	4.7	1.3	3.0	6.0	3.4	5.2	2.7
<b>H.W.L (m) Existing Maximum (50 Years Return Period Floods)</b>	1.7	5.1	5.5	6.8	2.0	5.3	8.1	4.7	7.1	4.8
<b>Bridge Height (m)</b>	4.5	7.7	7.6	8.9	3.6	7.4	10.2	6.3	9.7	6.9
<b>Approach Height (m)</b>	1.0 (4.9)	2.2 (4.9)	1.5 (6.0)	1.6 (4.8)	1.7 (4.9)	1.5 (4.8)	1.5 (6.0)	3.0 (7.0)	3.0 (5.5)	2.0 (6.6)
<b>(Abutment Height)</b>	1.3 (4.9)	2.0 (4.9)	1.2 (6.0)	2.1 (4.8)	2.0 (4.9)	1.5 (4.8)	1.0 (6.0)	2.5 (6.8)	2.2 (7.0)	2.5 (7.5)
<b>Pier Height (m) (Maximum Height)</b>	4.9	10.0	-----	-----	6.8	-----	-----	-----	8.0	-----
<b>Geological Zone</b>	NE-1	NE-1	NE-1	SE-2	SE-2	SE-2	SE-2	SE-2	SE-2	SE-4
<b>(Boring Holes)</b>	<b>BH-1</b>			Sand						
	<b>h (m)</b>			16						
	<b>N-value</b>			35						
	<b>BH-2</b>			Sand						
	<b>h (m)</b>			17						
	<b>N-value</b>			31						
<b>BH-3</b>			-----	-----	-----	-----	-----	-----	-----	-----
<b>h (m)</b>			-----	-----	-----	-----	-----	-----	-----	-----
<b>N-value</b>			10.0	5.0	14.0	12.0	10.0	10.0	16.0	5.0
<b>Pile Length (m)</b>	8.0	13.0								
<b>Remarks</b>				Pile Bent			Pile Bent		Pile Bent	
<b>Selection</b>	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (4/9)**

No.	31	32	33	34	35	36	37	38	39	40
District	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria	B. Baria
Number of Bridges	2	3	4	5	6	7	8	9	10	11
Bridge Code	07-03-01	07-03-02	07-04-01	07-04-02	07-05-01	07-05-02	07-05-03	07-06-01	07-06-02	07-06-03
Thana	Nabinagar	Nabinagar	Sarail	Sarail	Bancharampur	Bancharampur	Bancharampur	Nasirnagar	Nasirnagar	Nasirnagar
Hydrological Zone	Catchment	Catchment	Catchment	Catchment	Catchment	River	Catchment	River	Catchment	Catchment
Bridge Length (m)	25	35	45	40	25	75	40	60	60	75
Span Length (m)	25	15+20	15+15+15	20+20	25	25+25+25	20+20	20+20+20	20+20+20	25+25+25
Navigation Clearance (m)	1.5	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
N.H.W.L (m) (Return Period One Year)	3.3	3.8	3.3	3.2	3.3	5.9	3.3	4.1	4.6	2.0
H.W.L (m) Existing Maximum (50 Years Return Period Floods)	5.4	5.9	5.4	5.3	5.4	4.1	5.4	5.1	6.7	4.1
Bridge Height (m)	7.5	8.5	7.5	7.4	7.5	6.2	7.5	7.2	8.8	6.2
Approach Height (m)	0.5 (4.8)	2.4 (4.8)	1.7 (4.8)	2.0 (6.2)	0.9 (6.4)	5.0 (6.8)	2.8 (4.8)	2.0 (4.8)	2.8 (4.8)	1.4 (4.2)
(Abutment Height)	0.7 (4.8)	2.4 (4.8)	1.5 (4.8)	1.5 (4.8)	1.4 (4.8)	6.5 (8.9)	2.0 (4.8)	1.5 (4.8)	2.8 (6.5)	0.0 (4.8)
Pier Height (m)	-----	9.4	6.9	8.0	-----	10.0	5.7	7.8	11.3	6.5
(Maximum Height)	NE-4	NE-4	NE-3	NE-3	NE-4	NE-4	NE-4	NE-3	NE-3	NE-3
Geological Zone										
Geology (Boring Holes)	Sort									
	h (m)									
	N-value									
	Sort									
	h (m)									
	N-value									
Pile Length (m)	Sort									
	N-value	5.0	8.0	11.0	12.0	7.0	12.0	15.0	8.5	15.0
Remarks						Height of the embankment for approach road will be more than 5.0m Pile Bent			Pile Bent	
Selection	OK	OK	OK	OK	OK	NO	OK	OK	OK	OK

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (5/9)**

No.	41	42	43	44	45	46	47	48	49	50	
<b>District</b>	B. Baria	B. Baria	Comilla	Comilla	Noakhali	Noakhali	Noakhali	Noakhali	Laxmipur	Laxmipur	
<b>Number of Bridges</b>	12	13	1	2	1	2	3	4	1	2	
<b>Bridge Code</b>	07-06-04	07-07-02	08-01-02	08-02-01	09-01-01	09-01-02	09-02-02	09-03-01	10-01-01	10-01-02	
<b>Thana</b>	Nasirnagar	Sadar	Chaddogram	Chandina	Sadar	Sadar	Chattkhill	Companigomj	Sadar	Sadar	
<b>Hydrological Zone</b>	Catchment	River	River	River	Catchment	River	Catchment	River	River	River	
<b>Bridge Length (m)</b>	50	25	100	25	45	90	15	80	60	45	
<b>Span Length (m)</b>	25+25	25	25+25+25+25	25	15+15+15	20+25+25+20	15	20+20+20+20	20+20+20	15+15+15	
<b>Navigation Clearance (m)</b>	1.5	1.5	1.5	1.5	1.0	2.0	1.0	2.5	1.0	1.0	
<b>N.H.W.L. (m) (Return Period One Year)</b>	1.6	4.9	2.7	3.9	3.4	2.2	3.1	1.9	5.6	3.7	
<b>H.W.L. (m) (50 Years Return Period Floods)</b>	3.7	6.4	4.9	4.9	4.7	4.2	4.4	5.5	6.2	6.5	
<b>Bridge Height (m)</b>	5.8	8.5	7.0	7.0	6.3	6.8	6.0	8.6	7.8	8.1	
<b>Approach Height (m)</b>	2.7 (4.9)	1.3 (4.8)	1.9 (4.9)	2.5 (6.8)	0.7 (4.9)	2.8 (5.6)	1.2 (4.8)	1.5 (5.6)	1.6 (4.9)	0.5 (4.9)	
<b>(Abutment Height)</b>	1.8 (4.9)	0.3 (4.8)	0.6 (4.9)	1.8 (7.9)	1.5 (4.9)	2.8 (5.6)	1.2 (4.8)	1.7 (5.6)	1.2 (4.9)	1.0 (4.9)	
<b>Pier Height (m) (Maximum Height)</b>	6.8	-----	3.9	-----	3.5	5.5	-----	3.5	7.4	5.9	
<b>Geological Zone</b>	NE-3	NE-4	SE-1	SE-2	SE-1	SE-1	SE-1	SE-1	SE-1	SE-1	
<b>Geology (Boring Holes)</b>	<b>BH-1</b>	Sort									
		h (m)									
	<b>BH-2</b>	N-value									
		Sort									
	<b>BH-3</b>	h (m)									
		N-value									
<b>Pile Length (m)</b>	15.0	6.0	18.0	12.0	12.0	13.0	11.0	11.0	11.0	11.0	
<b>Remarks</b>			Pile Bent			Pile Bent	Newly foot bridge (width=1.8m) recently constructed		Pile Bent	Pile Bent	
<b>Selection</b>	OK	OK	OK	OK	OK	OK	NO	OK	OK	OK	

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (6/9)**

No.	51	52	53	54	55	56	57	58	59	60
District	Laxmipur	Laxmipur	Laxmipur	Laxmipur	Laxmipur	Narshingdi	Narshingdi	Narshingdi	Narshingdi	Narshingdi
Number of Bridges	3	4	5	6	7	1	2	3	4	5
Bridge Code	10-01-03	10-02-01	10-02-03	10-02-04	10-03-01	11-01-01	11-01-02	11-01-07	11-02-01	11-02-04
Thana	Sadar	Ramgonj	Ramgonj	Ramgonj	Ramgoti	Sadar	Sadar	Sadar	Monohardi	Monohardi
Hydrological Zone	River	Catchment	Catchment	Catchment	River	Catchment	River	River	Catchment	Catchment
Bridge Length (m)	45	20	30	20	80	40	65	25	75	30
Span Length (m)	15+15+15	20	15+15	20	20+20+20+20	20+20	20+25+20	25	25+25+25	15+15
Navigation Clearance (m)	1.0	1.5	1.0	1.0	1.0	1.5	2.0	2.0	2.0	1.0
N.H.W.L (m) (Return Period One Year)	4.3	3.1	2.9	2.8	1.8	2.2	4.3	5.3	1.8	1.9
H.W.L (m) Existing Maximum (50 Years Return Period Floods)	7.4	4.4	4.2	4.1	3.1	3.3	7.0	6.8	3.0	3.1
Bridge Height (m)	9.0	6.5	5.8	5.7	4.7	5.4	9.6	9.4	5.6	4.7
Approach Height (m)	2.0(4.9)	2.0(4.9)	1.2(4.8)	1.6(4.8)	1.0(5.5)	2.0(4.8)	2.0(4.8)	3.5(7.0)	0.3(4.8)	0.0(4.8)
(Abutment Height)	2.0(4.9)	1.0(4.9)	0.0(4.8)	1.5(4.8)	1.8(5.5)	1.7(4.8)	1.5(4.8)	3.3(7.0)	3.0(5.5)	1.0(4.8)
Pier Height (m) (Maximum Height)	5.5	-----	6.2	-----	6.5	6.8	7.0	-----	6.7	5.7
Geological Zone	SE-1	SE-1	SE-1	SE-1	SE-1	NW-1	NW-1	NW-1	NW-1	NW-1
Geology (Boring Holes)	BH-1	Sort			Sand					
		h (m)			11					
	BH-2	N-value			30					
		Sort			Sand					
	BH-3	h (m)			14					
		N-value			22					
Pile Length (m)	Sort			-----						
	N-value			-----						
		11.0	11.0	10.0	8.0	9.0	11.0	11.0	9.0	10.0
Remarks	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent		Pile Bent			
Selection	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (7/9)**

No.	61	62	63	64	65	66	67	68	69	70
<b>District</b>	Narshingdi	Faridpur	Faridpur	Faridpur	Faridpur	Faridpur	Chittagong	Chittagong	Chittagong	Chittagong
<b>Number of Bridges</b>	6	1	2	3	4	5	1	2	3	4
<b>Bridge Code</b>	11-03-01	12-01-02	12-02-01	12-02-02	12-04-01	12-05-01	13-01-01	13-01-02	13-01-03	13-02-01
<b>Thana</b>	Shibpur	Alfadhanga	Boalmari	Boalmari	Sadarpur	Char Bhadrason	Anowara	Anowara	Anowara	Banskhali
<b>Hydrological Zone</b>	River	Catchment	River	River	River	River	River	River	River	River
<b>Bridge Length (m)</b>	100	50	75	75	65	25	25	50	25	100
<b>Span Length (m)</b>	25+25+25+25	25+25	25+25+25	25+25+25	20+25+20	25	25	25+25	25	25+25+25+25
<b>Navigation Clearance (m)</b>	2.0	1.0	1.5	2.0	1.0	2.0	2.5	2.5	2.0	2.5
<b>N.H.W.L (m) (Return Period One Year)</b>	4.7	3.5	6.3	4.0	7.5	2.9	2.3	1.0	1.2	4.3
<b>H.W.L (m) Existing Maximum (50 Years Return Period Floods)</b>	6.4	4.3	8.8	5.0	8.0	4.1	3.3	2.8	2.4	6.0
<b>Bridge Height (m)</b>	9.0	5.9	10.9	7.6	9.6	6.7	6.4	5.9	5.0	9.1
<b>Approach Height (m)</b>	<b>Right</b>	0.5(5.0)	2.8(4.8)	0.7(4.8)	0.0(4.8)	1.0(4.8)	2.2(4.8)	2.0(4.8)	1.0(4.8)	2.6(4.8)
<b>(Abutment Height)</b>	<b>Left</b>	0.0(5.0)	2.8(4.8)	0.0(4.8)	0.0(4.8)	1.8(4.8)	2.0(4.8)	1.0(4.8)	0.6(4.8)	3.0(4.8)
<b>Pier Height (m) (Maximum Height)</b>	7.6	5.8	9.5	6.7	9.0	-----	-----	8.4	-----	8.3
<b>Geological Zone</b>	NW-1	NW-4	NW-4	NW-4	NW-4	NW-4	NW-4	NW-4	NW-4	NW-4
<b>(Boring Holes)</b>	<b>BH-1</b>	Clay	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
	<b>h (m)</b>	11	12	22	10	20	-----	-----	-----	-----
	<b>N-value</b>	25	-----	-----	-----	-----	-----	-----	-----	-----
	<b>BH-2</b>	Clay/Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
	<b>h (m)</b>	12	20	-----	-----	-----	-----	-----	-----	-----
	<b>N-value</b>	20	-----	-----	-----	-----	-----	-----	-----	-----
<b>BH-3</b>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
<b>h (m)</b>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
<b>N-value</b>	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
<b>Pile Length (m)</b>	7.0	12.0	7.0	12.0	12.0	10.0	10.0	13.0	11.0	10.5
<b>Remarks</b>	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent	Pile Bent
<b>Selection</b>	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK



**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (8/9)**

No.	71	72	73	74	75	76	77	78	79	80
<b>District</b>	Chittagong	Chittagong	Cox's Bazar	Kishoregonj	Kishoregonj	Kishoregonj	Kishoregonj	Kishoregonj	Kishoregonj	Manikgonj
<b>Number of Bridges</b>	5	6	1	1	2	3	4	5	6	1
<b>Bridge Code</b>	13-02-02	13-02-03	14-01-01	15-01-01	15-01-02	15-01-03	15-02-01	15-03-01	15-03-02	16-01-01
<b>Thana</b>	Banskhali	Banskhali	Chokoria	Kuliarchar	Kuliarchar	Kuliarchar	Karimgonj	Bajitpur	Bajitpur	Daulatpur
<b>Hydrological Zone</b>	River	Catchment	River	Catchment	Catchment	Catchment	Catchment	Catchment	River	Catchment
<b>Bridge Length (m)</b>	65	30	65	125	30	25	45	30	90	40
<b>Span Length (m)</b>	20+25+20	15+15	20+25+20	25+25+25+25+25	15+15	25	15+15+15	15+15	20+25+25+20	20+20
<b>Navigation Clearance (m)</b>	2.5	1.0	1.0	2.0	1.5	1.5	1.0	1.5	2.0	1.0
<b>N.H.W.L (m) (Return Period One Year)</b>	5.3	1.6	1.0	4.1	2.5	2.8	2.4	2.6	3.9	9.0
<b>H.W.L (m) Existing Maximum (50 Years Return Period Floods)</b>	5.8	3.7	2.4	6.2	4.6	5.0	4.5	4.7	6.7	11.3
<b>Bridge Height (m)</b>	8.9	5.3	4.0	8.8	6.7	7.1	6.1	6.8	9.3	12.9
<b>Approach Height (m)</b>	2.3 (4.8)	1.3 (4.8)	1.6 (4.8)	1.2 (8.3)	1.0 (5.5)	3.2 (7.1)	0.9 (4.8)	0.8 (4.8)	2.2 (5.6)	1.5 (6.5)
<b>(Abutment Height)</b>	2.0 (4.8)	3.0 (4.8)	1.2 (4.8)	2.0 (6.0)	1.5 (4.8)	2.7 (7.1)	0.9 (4.8)	0.6 (4.8)	2.0 (5.6)	0.8 (8.3)
<b>Pier Height (m) (Maximum Height)</b>	6.5	5.7	5.7	7.0	7.2	-----	7.5	6.6	9.0	9.9
<b>Geological Zone</b>	EH-1	BH-1	BH-1	NE-4	NE-4	NE-4	NE-4	NE-4	NE-4	NW-3
<b>Geology (Boring Holes)</b>	Sort	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand	Sand
	BH-1	12	30	11	14	11	11	12	12	12
	N-value	30	30	14	14	14	14	14	14	23
	Sort	Sand	Sand	Clay, Silt	Clay, Silt	Clay, Silt	Clay, Silt	Clay, Silt	Clay, Silt	Sand
	BH-2	13	13	11	31	11	11	11	11	13.3
	N-value	15	15	31	31	31	31	31	31	20
<b>BH-3</b>	Sort	----	----	Sand	Sand	----	----	----	----	----
	h (m)	----	----	13	13	13	13	13	13	----
	N-value	----	----	35	35	35	35	35	35	----
<b>Pile Length (m)</b>	28.0	12.0	11.0	13.0	9.0	12.0	10.0	9.0	10.0	15.0
<b>Remarks</b>	Pile Bent			Pile Bent						
<b>Selection</b>	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK

**Table 2.3.2-2 FINAL SELECTION OF BRIDGES FOR 2<sup>ND</sup> SURVEY (9/9)**

No.	81	82	83	84	85	86	87	88	89	90	
District	Manikgonj	Manikgonj									
Number of Bridges	2	3									
Bridge Code	16-01-02	16-01-03									
Thana	Daulatpur	Daulatpur									
Hydrological Zone	River	River									
Bridge Length (m)	40	100									
Span Length (m)	20+20	25+25+25+25									
Navigation Clearance (m)	2.0	2.0									
N.H.W.L (m) (Return Period One Year)	3.5	6.5									
H.W.L (m) Existing Maximum (50 Years Return Period Floods)	4.6	8.2									
Bridge Height (m)	7.2	10.8									
Approach Height (m) (Abutment Height)	Right	2.5 (6.5)									
	Left	2.3 (5.5)									
Pier Height (m) (Maximum Height)	6.3	9.5									
Geological Zone	NW-3	NW-3									
Geology (Boring Holes)	BH-1	Sort	Sand								
		h (m)	14								
	BH-2	N-value	23								
		Sort	Sand, Silt								
	BH-3	h (m)	15								
		N-value	37								
Pile Length (m)	Sort	----									
	h (m)	----									
	N-value	----									
	h (m)	8.0									
Remarks	Pile Bent	Pile Bent									
Selection	OK	OK									