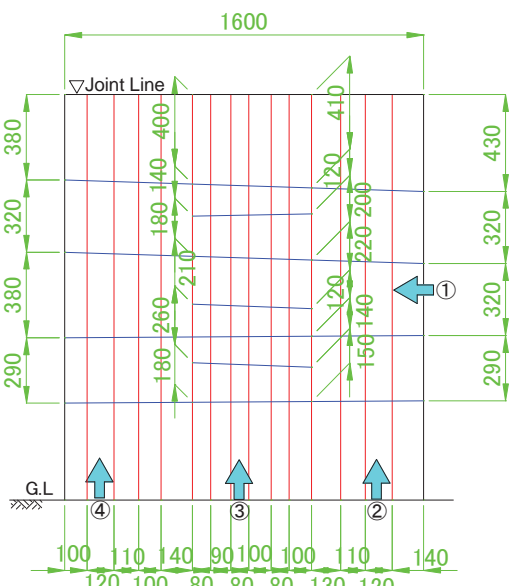

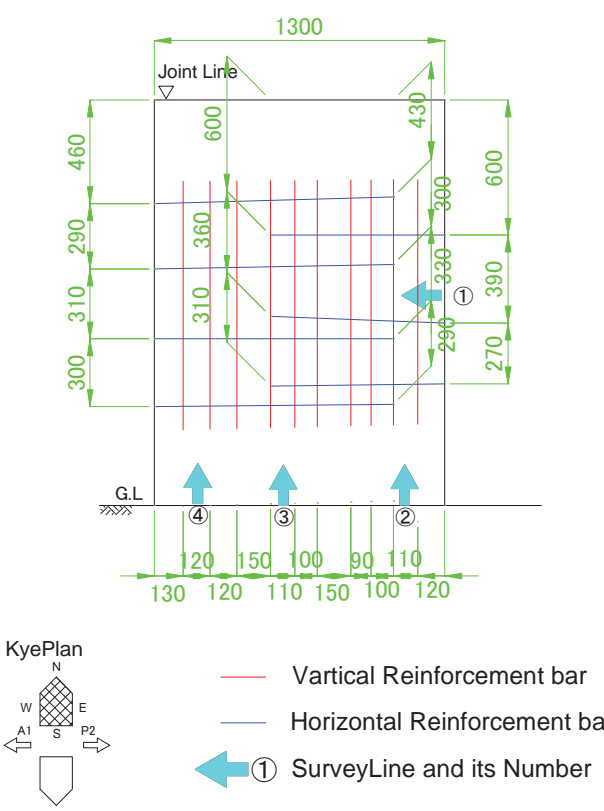


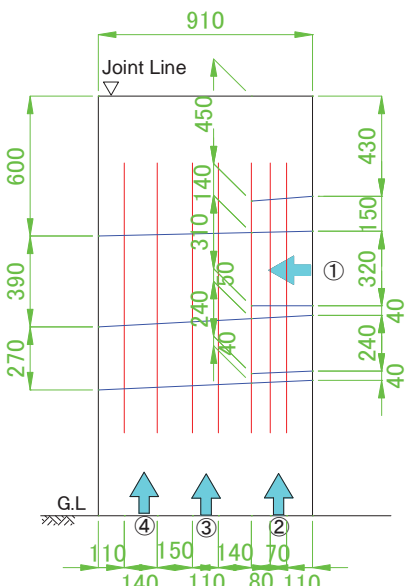




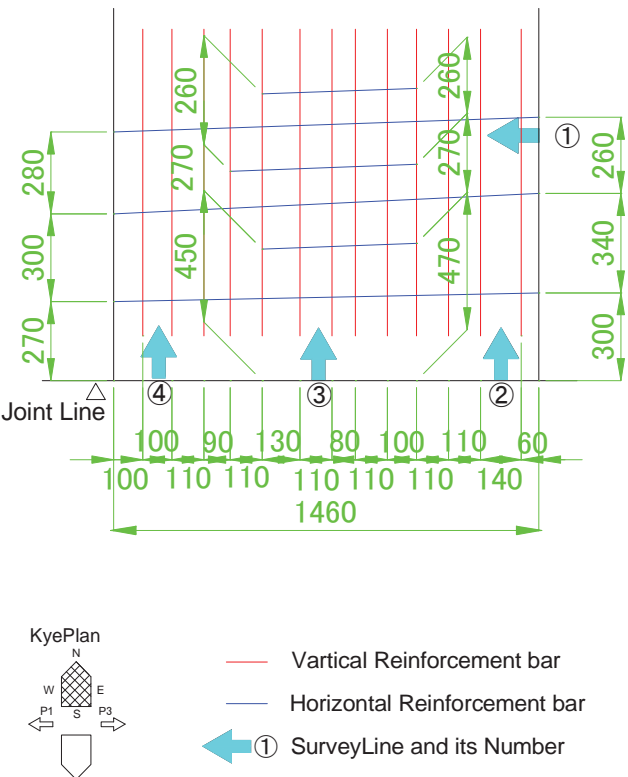

4. Reinforcement Survey (Kanchpur Bridge)

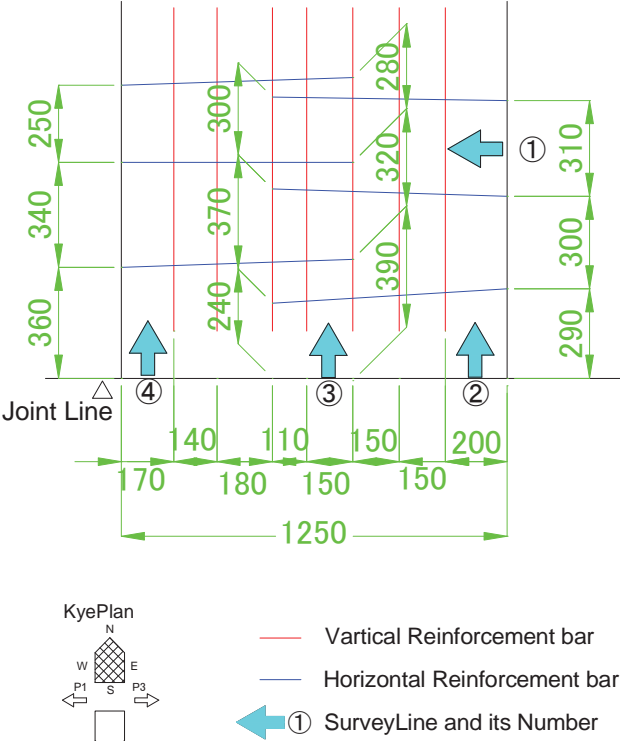

The Result of Investigation

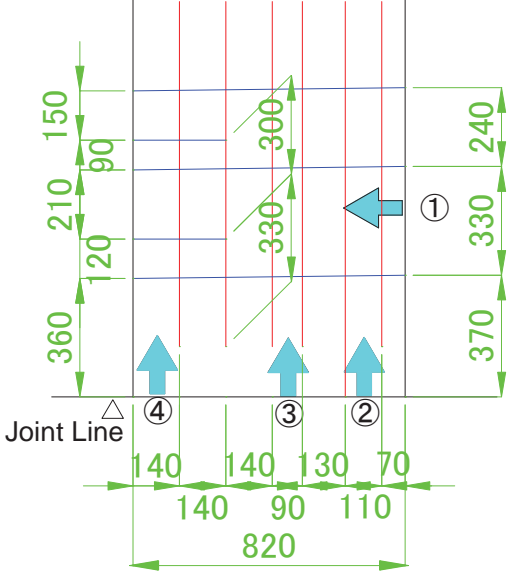

Group A	P1	North Column	Down-side South Face	
<p>Bar arrangement drawing</p>  <p>KeyPlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
<p>Note</p>				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	140	80	105.0	D29
②	320	290	310.0	D16
③	210	115	160.5	D16
④	380	290	330.0	D16

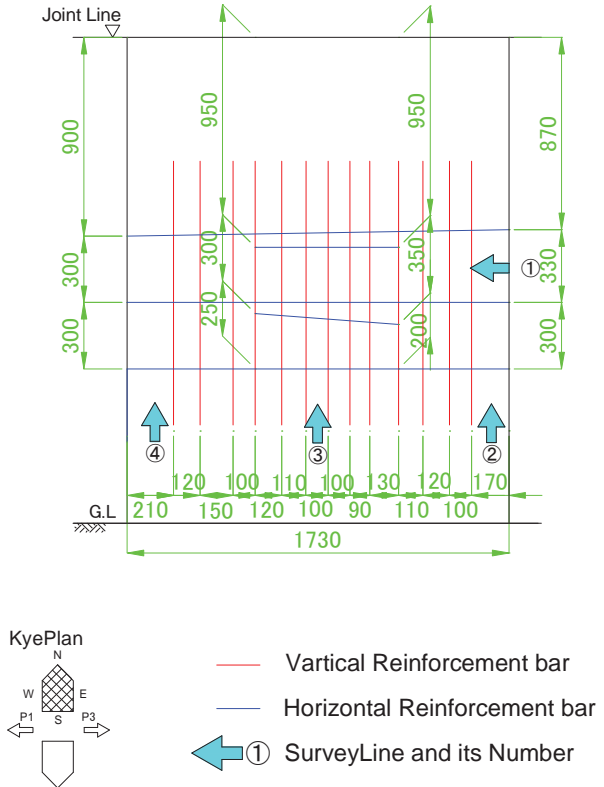

Group A	P1	North Column	Down-side East Face	
<p>Bar arrangement drawing</p>  <p>KeyPlan</p> <p>— Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number</p>			<p>Picture</p> 	
			<p>Note</p>	
				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	150	90	117.0	D29
②	390	270	330.0	D16
③	235	80	151.5	D16
④	310	290	300.0	D16

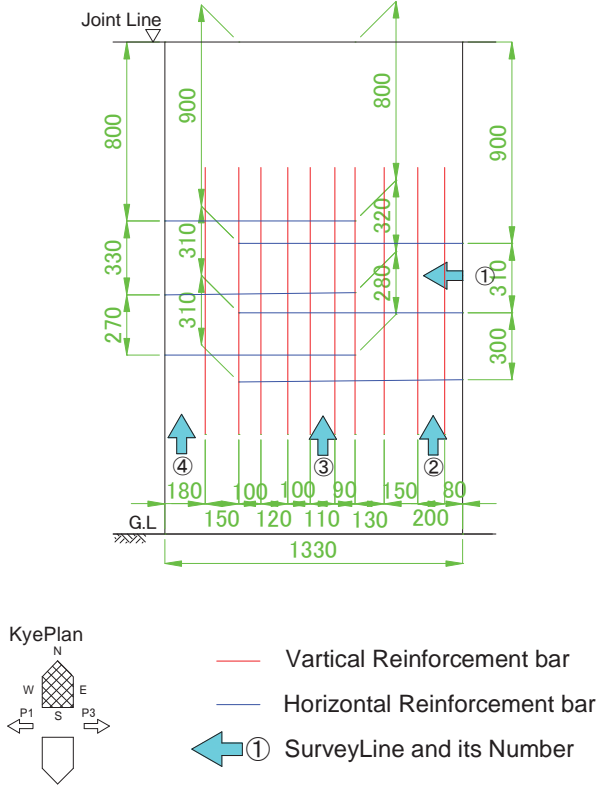

Group A	P1	North Column	Down-side Northwest Face																													
<p>Bar arrangement drawing</p>  <p> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number </p>			<p>Picture</p> 																													
<p>Survey Results</p> <table border="1" data-bbox="204 1299 1098 1832"> <thead> <tr> <th rowspan="2">SurveyLine No</th> <th colspan="3">Pitch (mm)</th> <th rowspan="2">Presumptive Diameter of Reinforcement (By the P2 Chipping Results)</th> </tr> <tr> <th>Max.</th> <th>Min.</th> <th>Ave.</th> </tr> </thead> <tbody> <tr> <td>①</td> <td>150</td> <td>70</td> <td>115.0</td> <td>D29</td> </tr> <tr> <td>②</td> <td>320</td> <td>40</td> <td>158.0</td> <td>D16</td> </tr> <tr> <td>③</td> <td>310</td> <td>60</td> <td>160.0</td> <td>D16</td> </tr> <tr> <td>④</td> <td>390</td> <td>270</td> <td>330.0</td> <td>D16</td> </tr> </tbody> </table>			SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)	Max.	Min.	Ave.	①	150	70	115.0	D29	②	320	40	158.0	D16	③	310	60	160.0	D16	④	390	270	330.0	D16	<p>Note</p> 	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)																												
	Max.	Min.	Ave.																													
①	150	70	115.0	D29																												
②	320	40	158.0	D16																												
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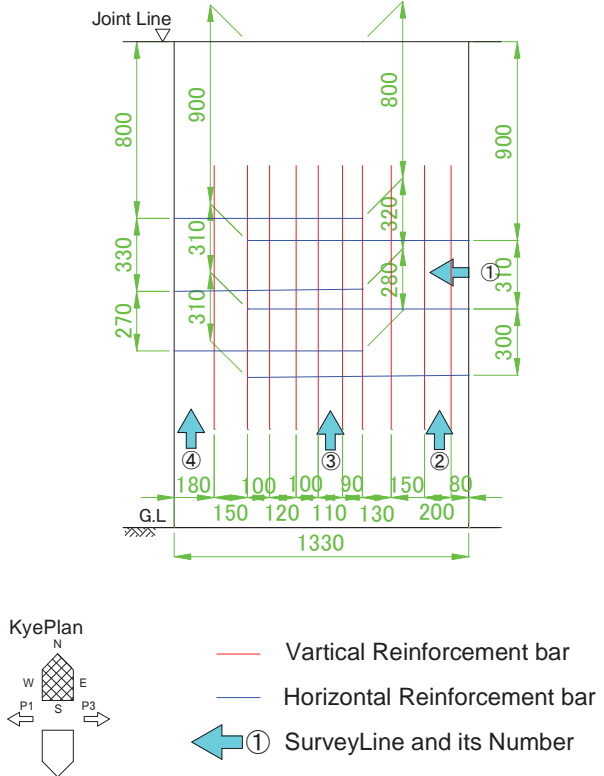

Group A	P2	North Column	Down-side Up-side South Face	
Bar arrangement drawing			Picture	
 <p>The drawing shows a rectangular cross-section of a column with a total width of 1460 mm and a total height of 1260 mm. Vertical reinforcement bars are shown in red, and horizontal reinforcement bars are shown in blue. Survey lines are indicated by blue arrows and numbered 1, 2, 3, and 4. Dimensions for vertical bars are: 270, 300, 280, 450, 270, 260, 470, 270, 260, 340, 300. Dimensions for horizontal bars are: 100, 110, 110, 110, 110, 110, 110, 140. A total width dimension of 1460 is shown at the bottom. A 'Joint Line' is marked on the left side. A legend indicates: Red line = Vertical Reinforcement bar, Blue line = Horizontal Reinforcement bar, Blue arrow with number = SurveyLine and its Number. A 'KyePlan' diagram shows the orientation with North (N), South (S), East (E), and West (W) directions.</p>				
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	140	80	108.0	D29
②	340	270	305.0	D16
③	160	100	136.0	D16
④	300	180	240.0	D16

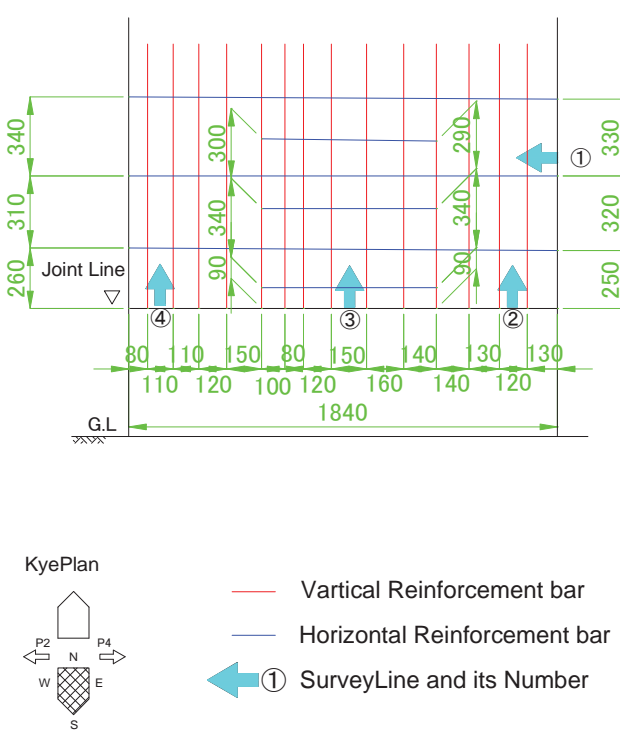

Group A	P2	North Column	Up-side West Face	
<p>Bar arrangement drawing</p>  <p>Joint Line</p> <p>KyePlan</p> <p>— Vertical Reinforcement bar</p> <p>— Horizontal Reinforcement bar</p> <p>← ① SurveyLine and its Number</p>			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			1Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	180	110	147.0	D29
②	310	300	305.0	D16
③	230	60	144.0	D16
④	340	250	295.0	D16

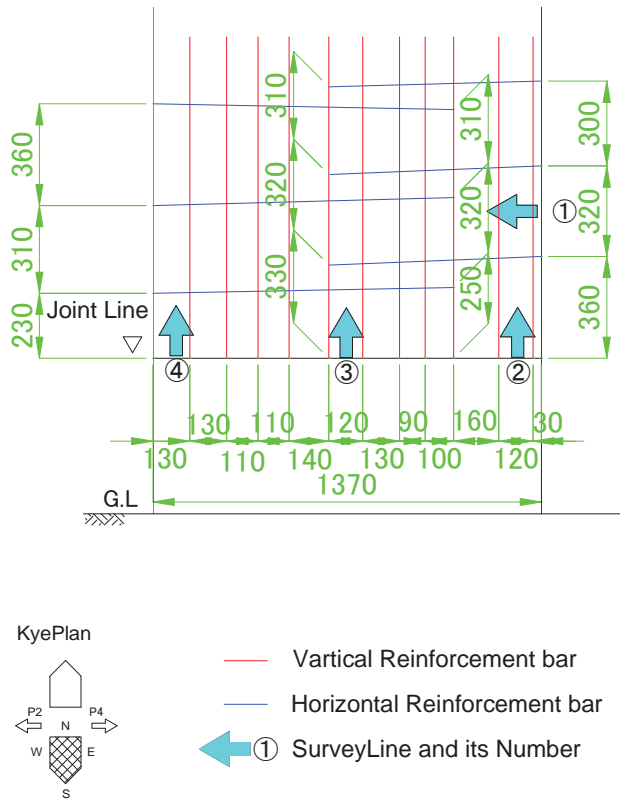

Group A	P2	North Column	Up-side Northwest Face	
<p>Bar arrangement drawing</p>  <p>The drawing shows a column with a total width of 820 mm and a total height of 1080 mm. Vertical reinforcement bars are shown in red, and horizontal reinforcement bars are shown in blue. Survey lines are indicated by blue arrows and numbered 1, 2, 3, and 4. The horizontal spacing between bars is 140, 140, 90, 130, and 70 mm. The vertical spacing between bars is 360, 210, 150, 90, 120, 330, 300, 240, 330, and 370 mm. A legend indicates that red lines represent vertical reinforcement bars, blue lines represent horizontal reinforcement bars, and a blue arrow with a circled number represents a survey line and its number.</p>			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	140	90	122.0	D29
②	330	240	285.0	D16
③	220	80	157.0	D16
④	210	90	143.0	D16

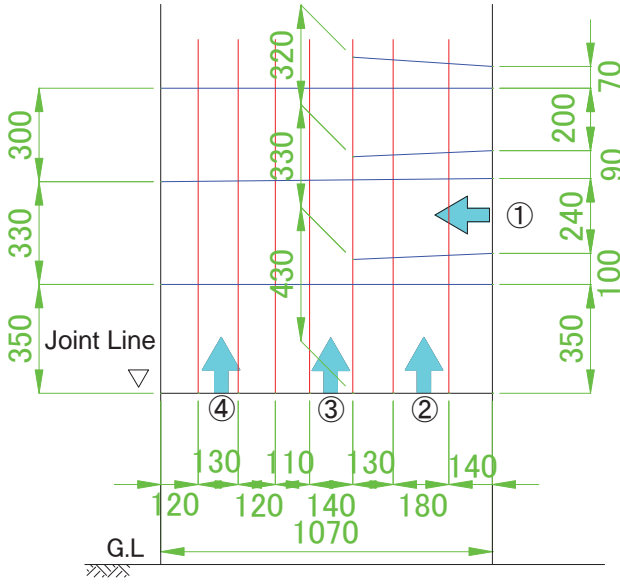
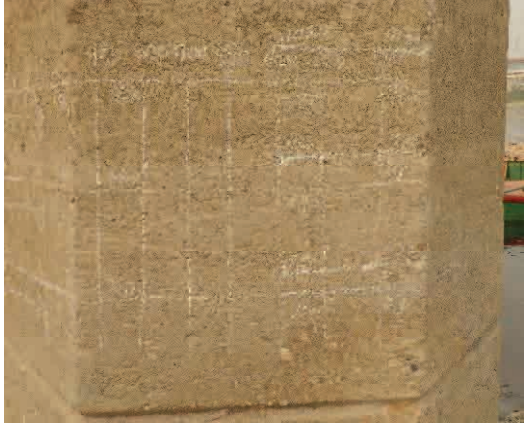
Group A	P2	North Column	Down-side South Face	
<p>Bar arrangement drawing</p>  <p>Joint Line</p> <p>900</p> <p>950</p> <p>950</p> <p>870</p> <p>300</p> <p>300</p> <p>300</p> <p>250</p> <p>300</p> <p>350</p> <p>200</p> <p>330</p> <p>300</p> <p>300</p> <p>G.L.</p> <p>210</p> <p>150</p> <p>120</p> <p>100</p> <p>90</p> <p>110</p> <p>130</p> <p>120</p> <p>170</p> <p>1730</p> <p>KyePlan</p> <p>N</p> <p>W</p> <p>E</p> <p>S</p> <p>P1</p> <p>P3</p> <p>— Vertical Reinforcement bar</p> <p>— Horizontal Reinforcement bar</p> <p>← ① SurveyLine and its Number</p>			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	150	90	113.0	D29
②	330	300	315.0	D16
③	235	60	128.5	D16
④	300	300	300.0	D16

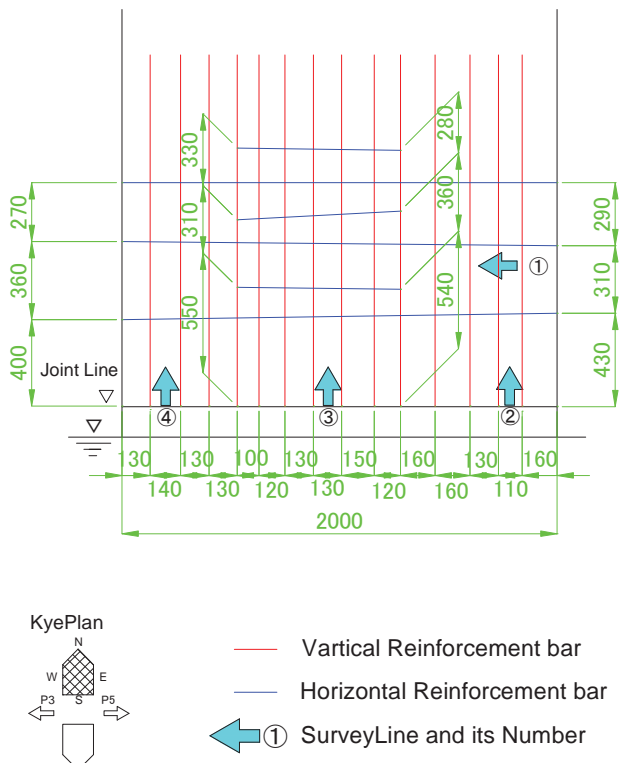
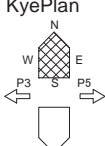
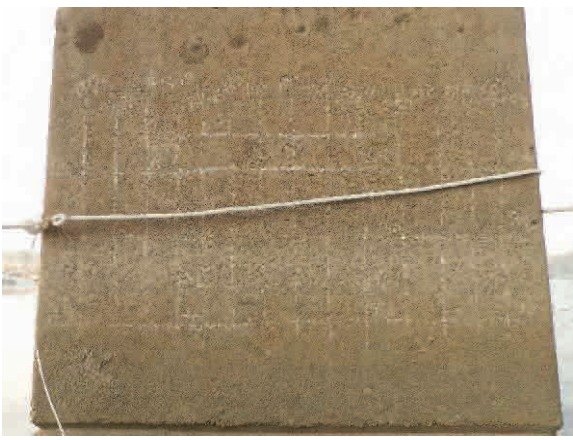
Group A	P2	North Column	Down-side West Face	
<p>Bar arrangement drawing</p>  <p>Joint Line</p> <p>800</p> <p>900</p> <p>800</p> <p>900</p> <p>330</p> <p>310</p> <p>310</p> <p>280</p> <p>320</p> <p>310</p> <p>300</p> <p>270</p> <p>180</p> <p>100</p> <p>100</p> <p>90</p> <p>150</p> <p>80</p> <p>150</p> <p>120</p> <p>110</p> <p>130</p> <p>200</p> <p>1330</p> <p>G.L.</p> <p>KyePlan</p> <p>N</p> <p>W</p> <p>E</p> <p>S</p> <p>P1</p> <p>P3</p> <p>— Vertical Reinforcement bar</p> <p>— Horizontal Reinforcement bar</p> <p>← ① SurveyLine and its Number</p>			<p>Picture</p> 	
			<p>Note</p>	
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	150	90	119.0	D29
②	310	300	305.0	D16
③	215	90	144.0	D16
④	330	270	300.0	D16

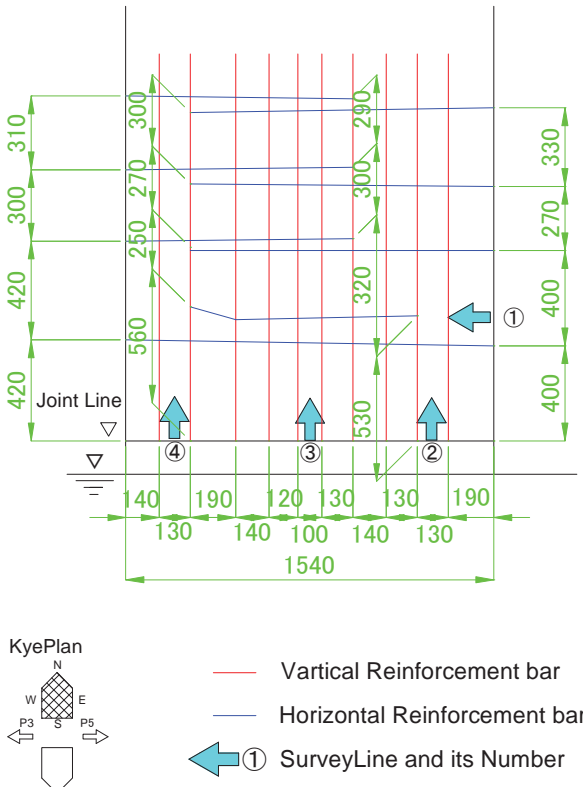

Group A	P2	North Column	Down-side Northwest Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <p>— Vertical Reinforcement bar</p> <p>— Horizontal Reinforcement bar</p> <p>← ① SurveyLine and its Number</p>			<p>Picture</p> 	
			<p>Note</p>	
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	190	100	128.0	D29
②	310	300	305.0	D16
③	190	110	150.0	D16
④	190	110	146.0	D16

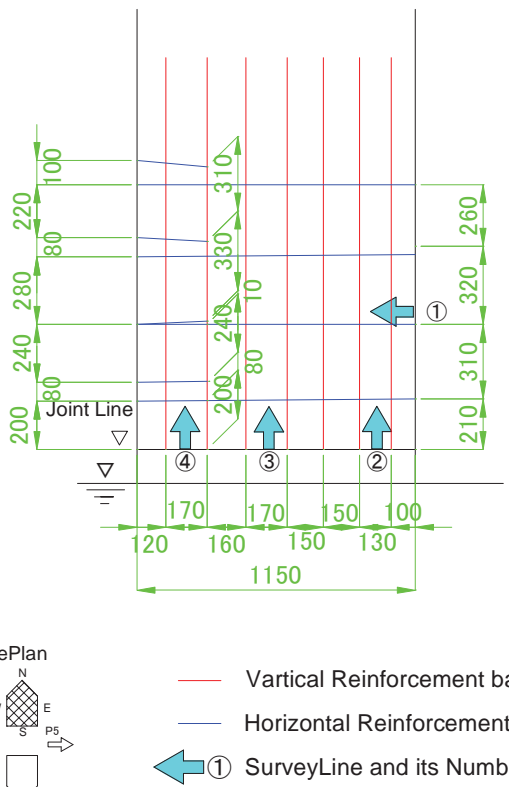
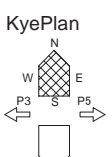

Group A	P3	South Column	Down-side North Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	160	80	125.0	D29
②	330	320	325.0	D16
③	195	145	166.0	D16
④	340	310	325.0	D16

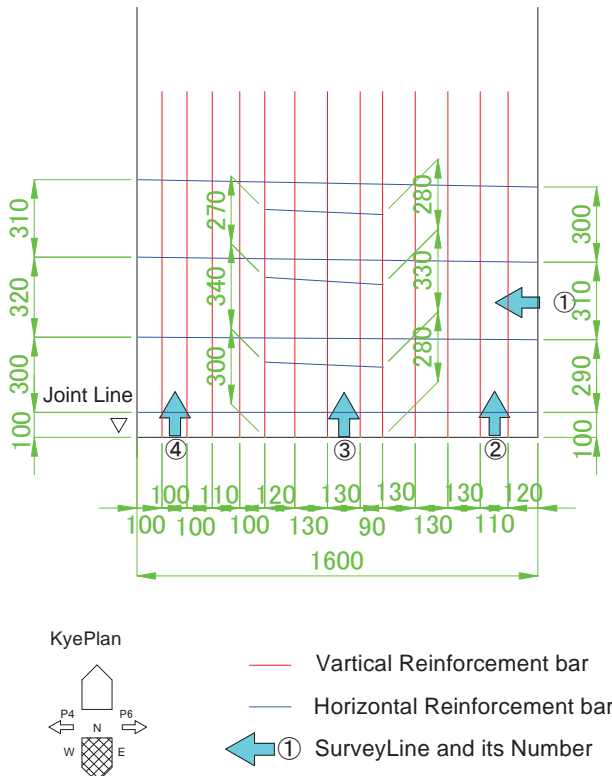
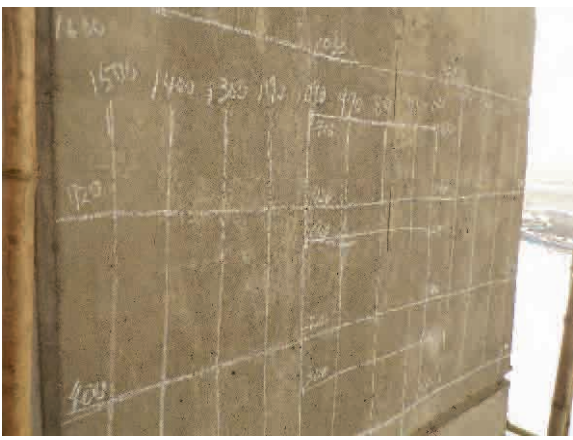
Group A	P3	South Column	Down-side West Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
<p>Note</p>				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	160	90	121.0	D29
②	320	300	310.0	D16
③	230	85	146.0	D16
④	360	310	335.0	D16

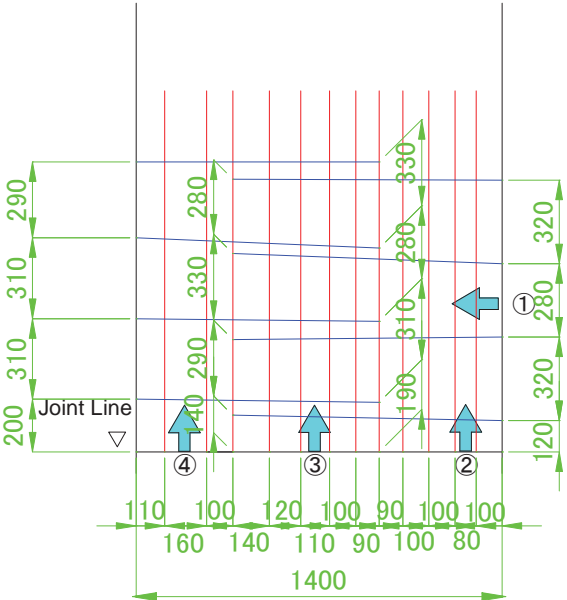

Group A	P3	South Column	Down-side Southwest Face	
Bar arrangement drawing			Picture	
 <p>The drawing shows a column with a total width of 1070 mm and a total height of 1070 mm. The reinforcement is arranged in four vertical survey lines (1, 2, 3, 4) and four horizontal survey lines (1, 2, 3, 4). The horizontal spacing between survey lines is 120 mm, 120 mm, 140 mm, and 180 mm. The vertical spacing between survey lines is 300 mm, 330 mm, 330 mm, and 350 mm. The drawing also shows a joint line and ground level (G.L.).</p>				
			Note	
Survey Results				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P2 Chipping Results)
	Max.	Min.	Ave.	
①	180	110	135.0	D29
②	240	70	140.0	D16
③	240	70	144.0	D16
④	330	300	315.0	D16

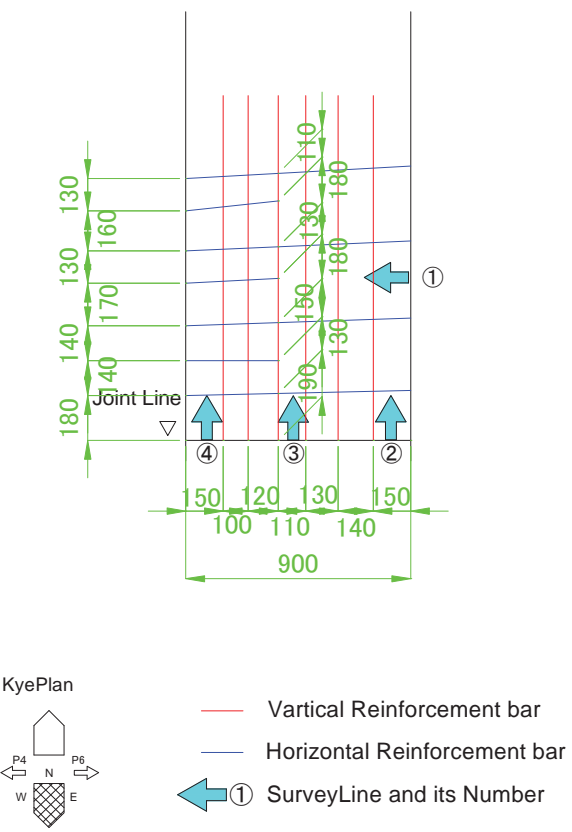

Group B	P4	North Column	Down-side South Face	
<p>Bar arrangement drawing</p>  <p>  </p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar SurveyLine and its Number 			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	160	100	132.0	D29
②	340	290	315.0	D16
③	210	110	155.0	D16
④	360	270	315.0	D16

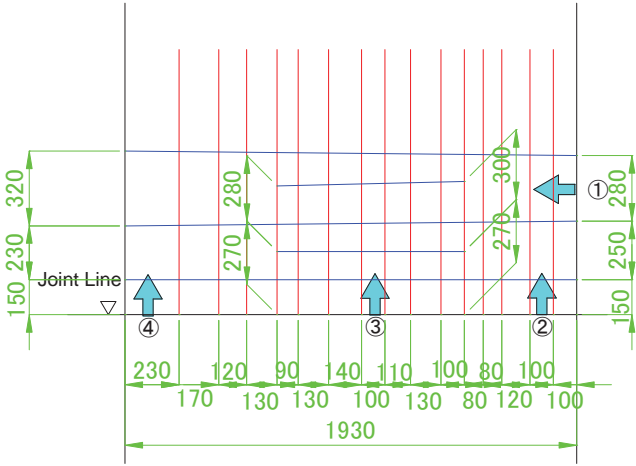
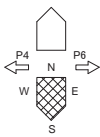

Group B	P4	North Column	Down-side West Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <p>— Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number</p>			<p>Picture</p> 	
<p>Note</p>				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	190	100	134.0	D29
②	400	230	333.0	D16
③	280	45	156.0	D16
④	340	300	317.0	D16

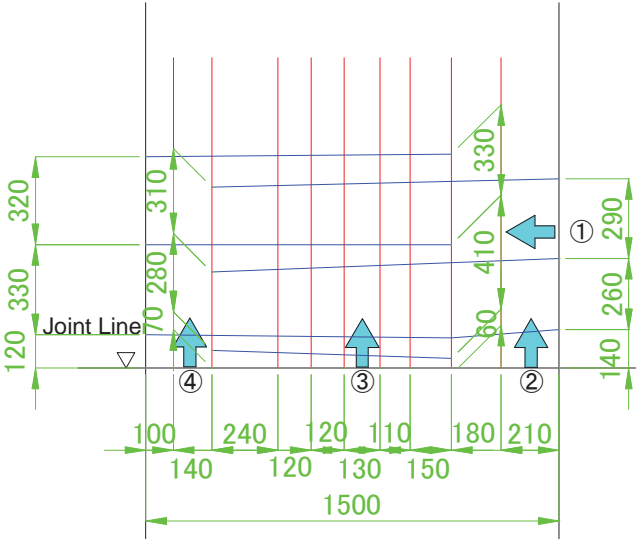
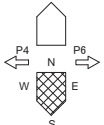

Group B	P4	North Column	Down-side Northwest Face	
<p>Bar arrangement drawing</p>  <p>  </p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	170	130	155.0	D29
②	370	290	323.0	D16
③	250	10	137.0	D16
④	280	60	163.0	D16

Group C	P5	South Column	Up-side North Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
<p>Survey Results</p>			<p>Note</p>	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	130	90	115.0	D29
②	310	290	300.0	D16
③	215	85	152.0	D16
④	320	300	310.0	D16

Group C	P5	South Column	Up-side East Face	
Bar arrangement drawing			Picture	
 <p>The drawing shows a column with a total width of 1400 mm and a total height of 1400 mm. Vertical reinforcement bars are shown in red, and horizontal reinforcement bars are shown in blue. Survey lines are indicated by blue arrows and numbered 1, 2, 3, and 4. A joint line is marked with a triangle. Dimensions for vertical bars are: 200, 310, 310, 290, 140, 290, 330, 280, 330, 280, 330, 310, 280, 330, 190, 310, 280, 330, 120, 320, 320, 120. Dimensions for horizontal bars are: 110, 100, 120, 100, 90, 100, 100, 160, 140, 110, 90, 100, 80, 1400. A legend below the drawing identifies: Vertical Reinforcement bar (red line), Horizontal Reinforcement bar (blue line), and SurveyLine and its Number (blue arrow with number).</p>			 <p>The photograph shows the actual column face with white chalk markings that correspond to the bar arrangement drawing. The markings indicate the positions of the vertical and horizontal reinforcement bars.</p>	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	160	80	108.0	D29
②	320	280	307.0	D16
③	265	40	138.5	D16
④	310	290	303.0	D16

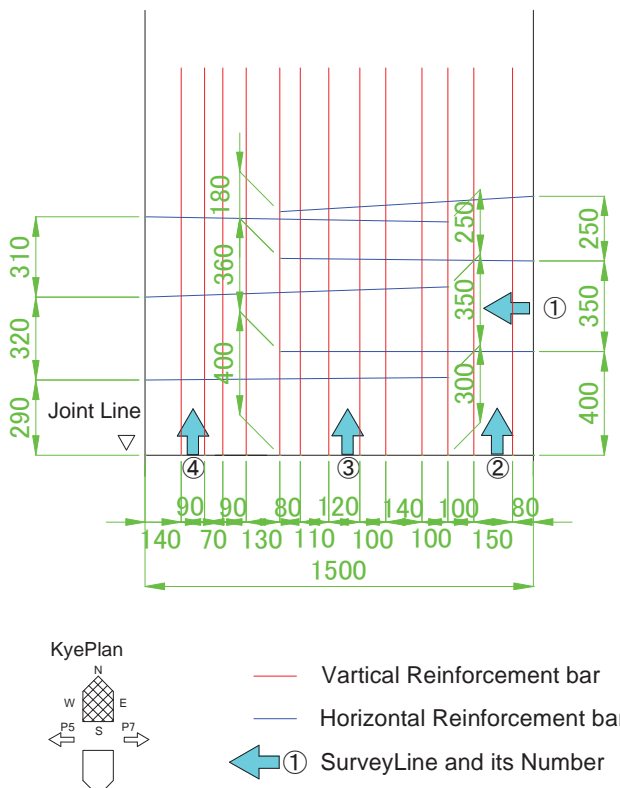

Group C	P5	South Column	Up-side Southeast Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
<p>Survey Results</p>			<p>Note</p>	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	140	100	120.0	D29
②	310	290	300.0	D16
③	180	120	150.0	D16
④	330	130	180.0	D16

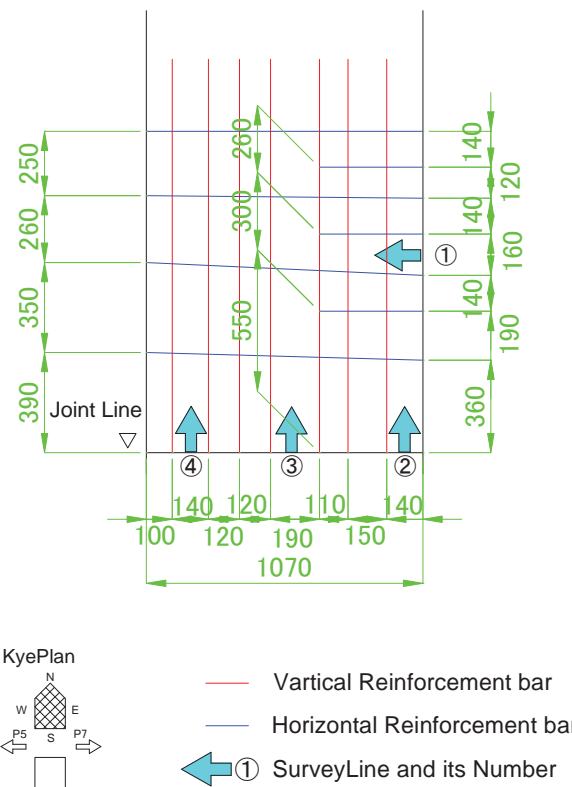

Group C	P5	South Column	Down-side North Face	
<p>Bar arrangement drawing</p>  <p>KeyPlan</p>  <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
<p>Survey Results</p>			<p>Note</p>	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	170	80	114.0	D29
②	280	250	265.0	D16
③	175	110	131.5	D16
④	320	230	275.0	D16

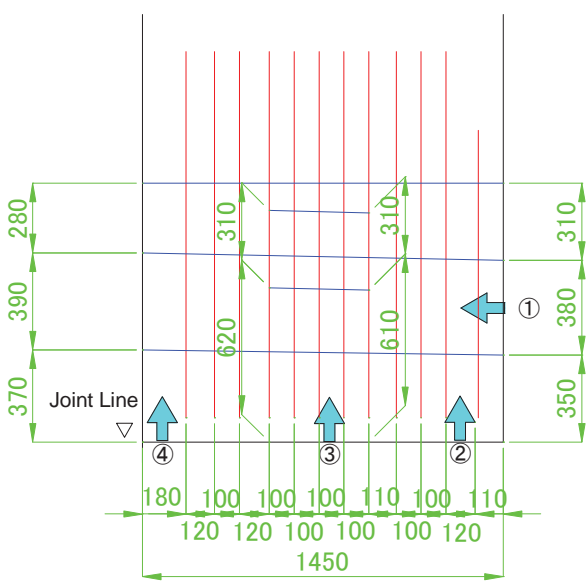

Group C	P5	South Column	Down-side East Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p>  <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	240	110	149.0	D29
②	290	260	275.0	D16
③	215	70	133.0	D16
④	340	320	330.0	D16

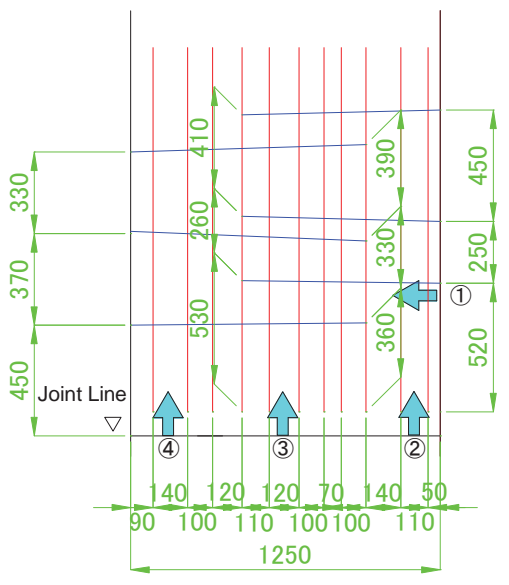

Group C	P5	South Column	Down-side Southeast Face	
Bar arrangement drawing			Picture	
<p>KyePlan</p> <p> — Vertical Reinforcement bar — Horizontal Reinforcement bar SurveyLine and its Number </p>				
Survey Results				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	200	90	127.0	D29
②	370	300	335.0	D16
③	200	130	162.0	D16
④	230	100	166.0	D16

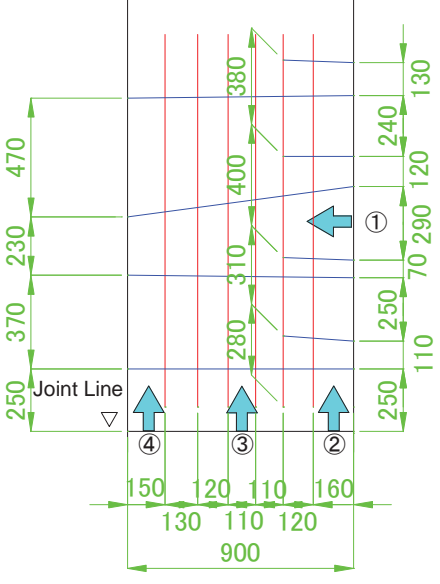
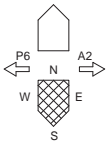

Group C	P6	North Column	Down-side South Face	
Bar arrangement drawing			Picture	
<p>The drawing shows a grid of reinforcement bars. Vertical bars are red and horizontal bars are blue. Survey lines are indicated by blue arrows with circled numbers 1, 2, 3, and 4. Dimensions are given in millimeters. A 'Joint Line' is marked on the left side.</p> <p>Vertical dimensions (from top to bottom): 240, 290, 320, 280 (Joint Line), 270. Horizontal dimensions (from left to right): 130, 90, 170, 120, 110, 120, 150, 100, 170, 120. Total width is 1900 mm.</p> <p>KeyPlan: Shows a diamond-shaped area with North (N), South (S), East (E), and West (W) directions. Survey points P5 and P7 are marked.</p> <p>Legend: — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number</p>			<p>The photograph shows the actual concrete surface with white chalk markings that correspond to the reinforcement grid shown in the drawing. The markings are arranged in a grid pattern, with vertical lines and horizontal lines intersecting. Some numbers are visible on the surface, such as 1520, 1120, 910, 570, 750, 550, and 70.</p>	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	190	90	127.0	D29
②	340	240	290.0	D16
③	220	70	140.0	D16
④	290	220	250.0	D16

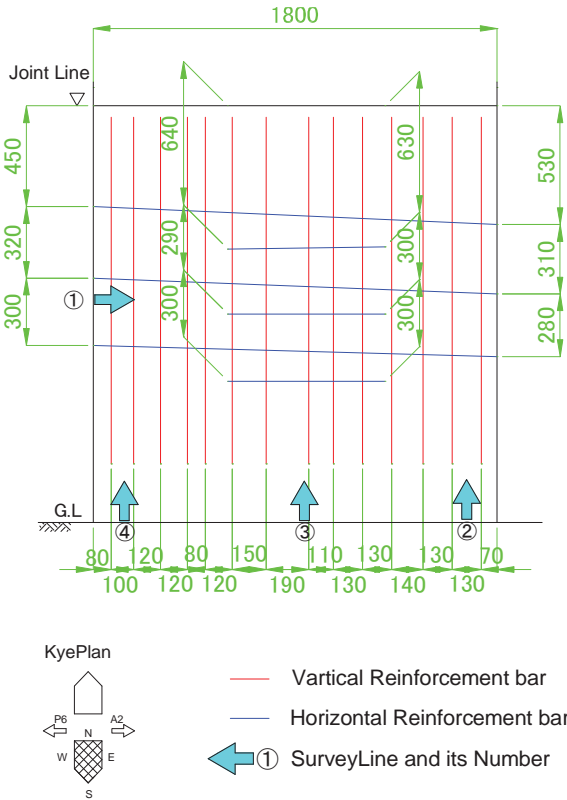

Group C	P6	North Column	Down-side East Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <p>— Vertical Reinforcement bar — Horizontal Reinforcement bar ① SurveyLine and its Number</p>			<p>Picture</p> 	
<p>Note</p>				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	150	70	107.0	D29
②	350	250	300.0	D16
③	230	60	135.0	D16
④	320	310	315.0	D16

Group C	P6	North Column	Down-side Northeast Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p> <p> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number </p>			<p>Picture</p> 	
Survey Results			Note	
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P5 Chipping Results)
	Max.	Min.	Ave.	
①	190	110	138.0	D29
②	190	120	148.0	D16
③	180	120	147.0	D16
④	350	250	287.0	D16

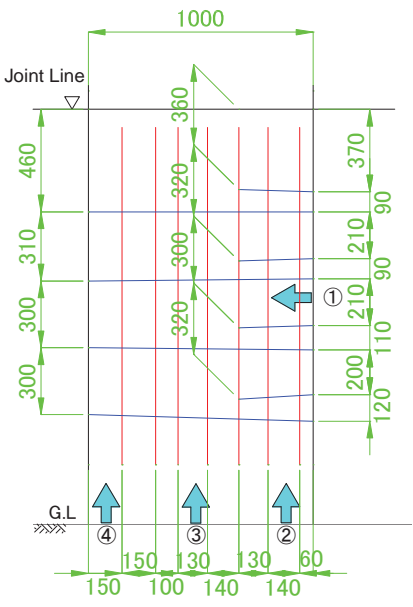

Group B	P7	South Column	Up-side North Face	
<p>Bar arrangement drawing</p>  <p>The drawing shows a column with a total width of 1450 mm and a total height of 1450 mm. Vertical reinforcement bars are shown in red, and horizontal reinforcement bars are shown in blue. Survey lines are indicated by blue arrows and numbered 1, 2, 3, and 4. A joint line is marked with a triangle. Dimensions for vertical bars: Survey Line 1 (380 mm), Survey Line 2 (310 mm), Survey Line 3 (115 mm), Survey Line 4 (390 mm). Dimensions for horizontal bars: Survey Line 1 (180 mm), Survey Line 2 (120 mm), Survey Line 3 (100 mm), Survey Line 4 (120 mm). A legend identifies the symbols: red line for Vertical Reinforcement bar, blue line for Horizontal Reinforcement bar, and a blue arrow for SurveyLine and its Number. A KyePlan diagram shows the column's orientation with North (N), South (S), East (E), and West (W) directions, and points P6 and A2.</p>			<p>Picture</p> 	
			<p>Note</p>	
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	130	100	106.0	D29
②	380	310	345.0	D16
③	235	115	165.0	D16
④	390	280	335.0	D16

Group B	P7	South Column	Up-side West Face	
<p>Bar arrangement drawing</p>  <p>Joint Line</p> <p>KyePlan</p> <p>— Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number</p>			<p>Picture</p> 	
<p>Note</p>				
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	140	70	111.0	D29
②	350	250	300.0	D16
③	285	90	170.0	D16
④	380	320	350.0	D16

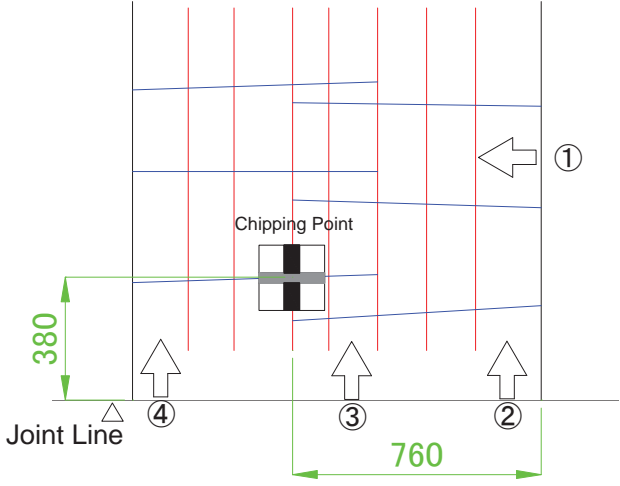
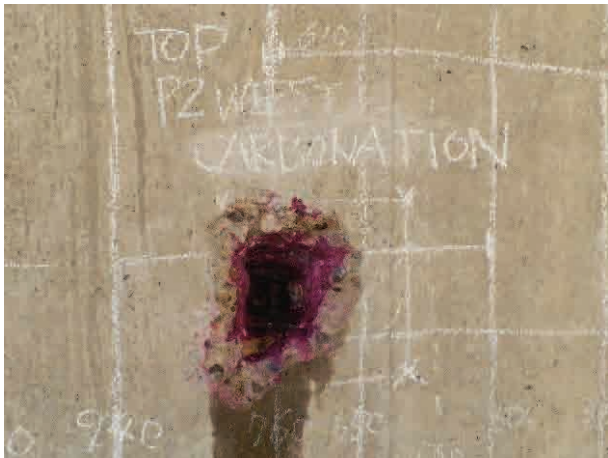

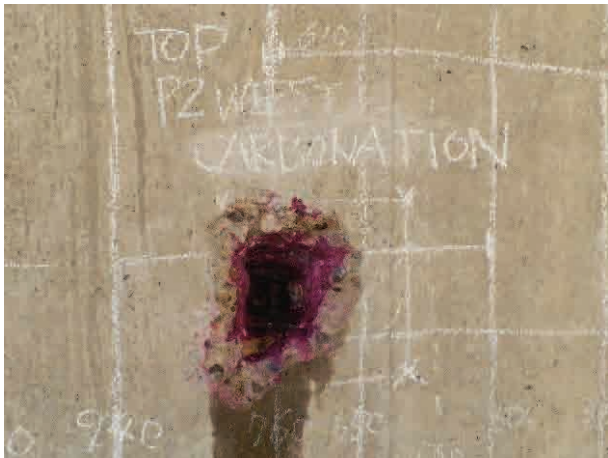

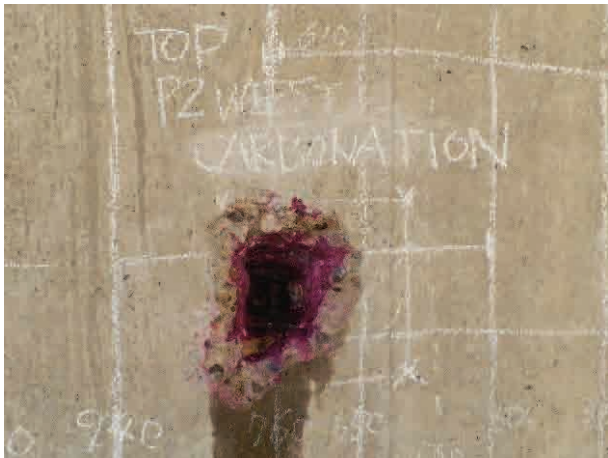

Group B	P7	South Column	Up-side Southwest Face	
<p>Bar arrangement drawing</p>  <p>KyePlan</p>  <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
			<p>Note</p>	
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	130	110	118.0	D29
②	290	70	173.0	D16
③	640	70	245.0	D16
④	470	230	357.0	D16

Group B	P7	South Column	Down-side North Face	
<p>Bar arrangement drawing</p>  <p>KeyPlan</p> <ul style="list-style-type: none"> — Vertical Reinforcement bar — Horizontal Reinforcement bar ← ① SurveyLine and its Number 			<p>Picture</p> 	
			<p>Note</p>	
<p>Survey Results</p>				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	190	80	127.0	D29
②	310	280	295.0	D16
③	180	120	145.0	D16
④	320	300	310.0	D16

Group B	P7	South Column	Down-side West Face	
Bar arrangement drawing			Picture	
			Note	
Survey Results				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	140	100	119.0	D29
②	330	290	310.0	D16
③	210	100	153.5	D16
④	340	270	310.0	D16

Group B	P7	South Column	Down-side Southwest Face	
Bar arrangement drawing 			Picture 	
			Note	
Survey Results				
SurveyLine No	Pitch (mm)			Presumptive Diameter of Reinforcement (By the P7 Chipping Results)
	Max.	Min.	Ave.	
①	150	100	132.0	D29
②	210	90	147.0	D16
③	210	90	147.0	D16
④	310	300	303.0	D16

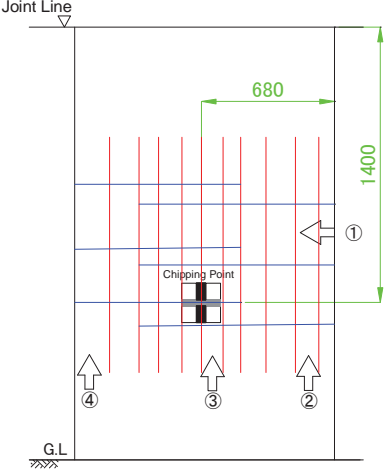


Result of Chipping and Corbonation test

Group A	P2	North Column	Up-side West Face					
<p>Location</p> 								
<p>Picture</p> <table border="1" data-bbox="213 965 1461 1480"> <thead> <tr> <th data-bbox="213 965 831 1003">Chipping</th> <th data-bbox="834 965 1461 1003">Corbonation</th> </tr> </thead> <tbody> <tr> <td data-bbox="213 1025 831 1480">  </td> <td data-bbox="834 1025 1461 1480">  </td> </tr> </tbody> </table>					Chipping	Corbonation		
Chipping	Corbonation							
								
<p>Survey Results</p>								
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth(mm) (Up,Down,Right,Left)					
Vartical	D29	72	Av.13.8mm (20, 5,20, 10)					
Horizontal	D16	55						

Result of Chipping and Corbonation test

Group A	P2	North Column	Down-side South Face			
<p>Location</p>						
<p>Picture</p> <table border="1" data-bbox="215 907 1460 1467"> <tr> <td data-bbox="215 907 837 1467"> <p>Chipping</p> </td> <td data-bbox="837 907 1460 1467"> <p>Corbonation</p> </td> </tr> </table>					<p>Chipping</p>	<p>Corbonation</p>
<p>Chipping</p>	<p>Corbonation</p>					
<p>Survey Results</p>						
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth(mm) (Up,Down,Right,Left)			
Vartical	D29	49	Av.8.8mm			
Horizontal	D16	30	(20,5 ,0,10)			

Result of Chipping and Corbonation test

Group A	P2	North Column	Down-side West Face	
<p>Location</p> 				
<p>Picture</p> <p>Chipping</p> 		<p>Carbonation</p> 		
<p>Survey Results</p>				
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth(mm) (Up,Down,Right,Left)	
Vartical	D29	73	Av.3.8mm	
Horizontal	D16	54	(0,5 ,10, 0)	

Result of Chipping and Corbonation test

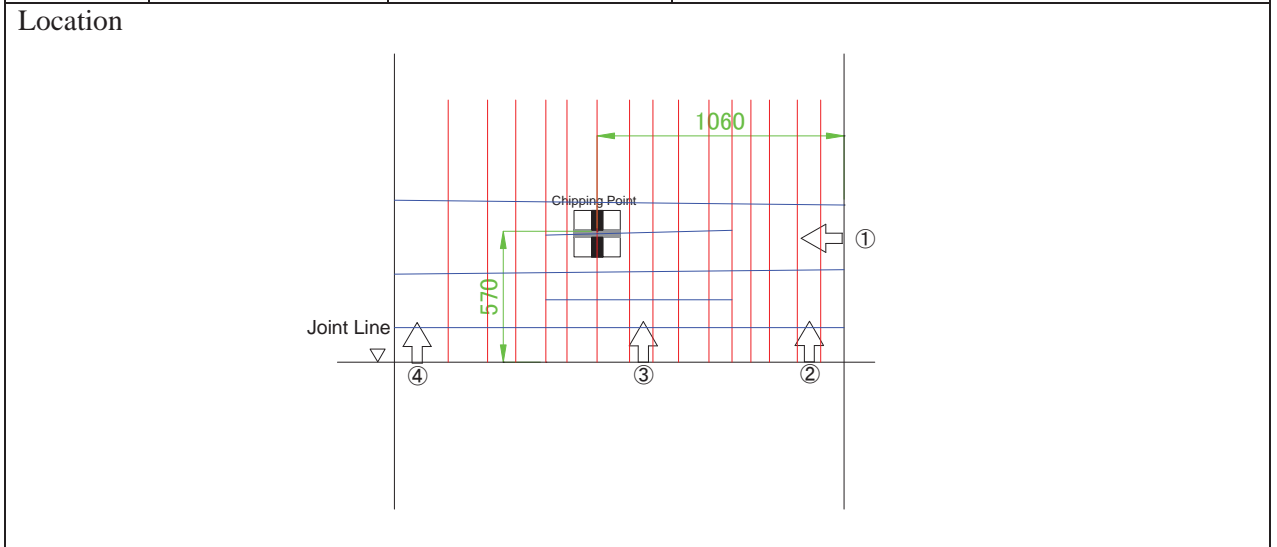
Group A	P2	North Column	Down-side Northwest Face
Location			
Picture		Corbonation	
Chipping			
Survey Results			
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth(mm) (Up,Down,Right,Left)
Vartical	D29	54	Av.5.0mm
Horizontal	D16	32	(5,5 ,5, 5)

Result of Chipping and Corbonation test

Group B	P5	South Column	Up-side East Face
Location			
Picture Chipping		Corbonation	
Survey Results			
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)
Vartical	D29	68	Av.6.3mm
Horizontal	D16	52	(5,5 ,5, 5)

Result of Chipping and Corbonation test

Group B	P5	South Column	Down-side North Face
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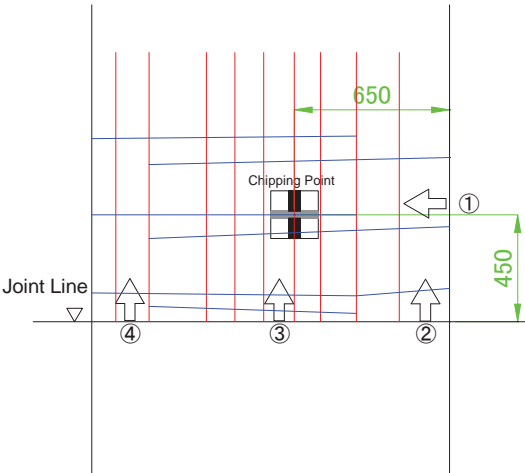








Picture	Corbonation
Chipping	
	

Survey Results

Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)
Vartical	D29	98	Av.1.3mm
Horizontal	D16	65	(0,0 ,5, 0)

Result of Chipping and Corbonation test

Group B	P5	South Column	Down-side East Face					
<p>Location</p> 								
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Chipping	Corbonation							
								
<p>Survey Results</p>								
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)					
Vartical	D29	124	Av.2.5mm (5,0 ,5, 0)					
Horizontal	D16	106						

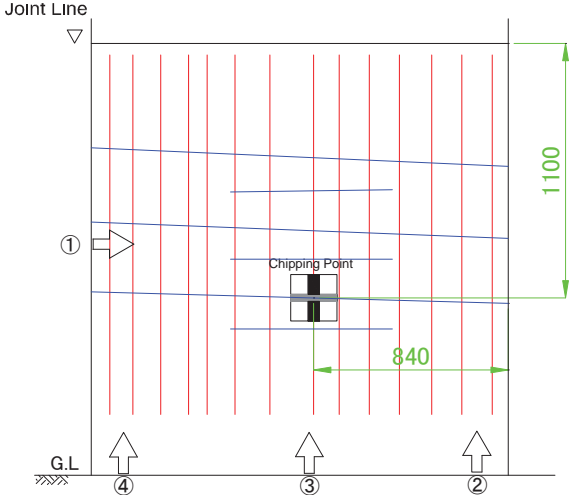






Result of Chipping and Corbonation test

Group B	P5	South Column	Down-side Southeast Face
Location			
Picture		Chipping	
Picture		Corbonation	
Survey Results			
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)
Vartical	D29	101	Av.5.0mm
Horizontal	D16	88	(5,5 ,5, 5)

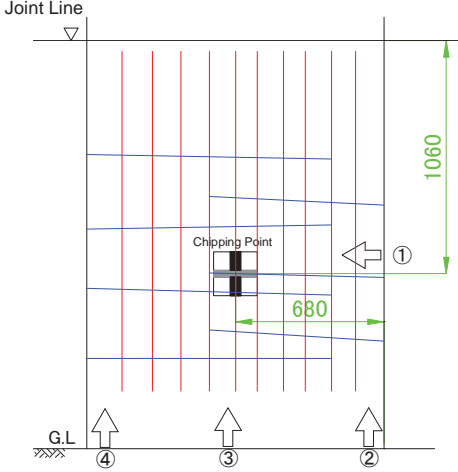

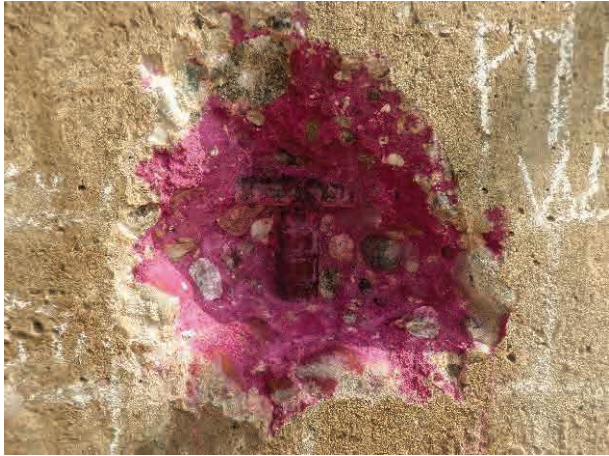

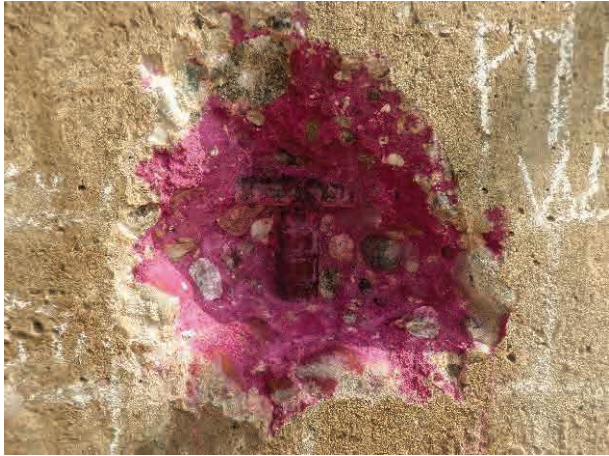

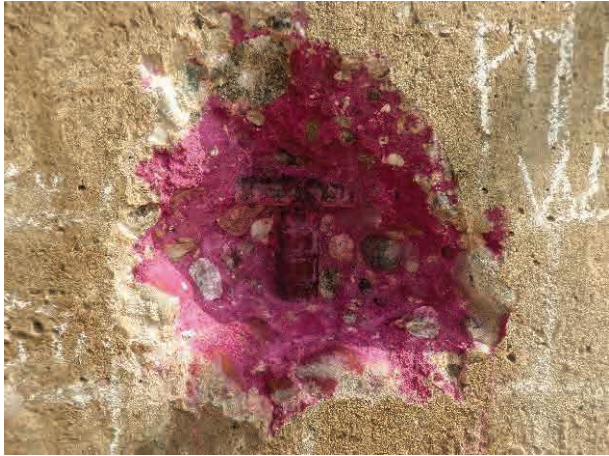
Result of Chipping and Corbonation test

Group C	P7	South Column	Up-side North Face
Location			
Picture		Corbonation	
Chipping			
Survey Results			
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)
Vartical	D29	65	Av.12.5mm
Horizontal	D16	44	(10,15,10,15)

Result of Chipping and Corbonation test

Group C	P7	South Column	Down-side North Face					
<p>Location</p> 								
<p>Picture</p> <table border="1" data-bbox="213 913 1458 1487"> <thead> <tr> <th data-bbox="213 913 836 949">Chipping</th> <th data-bbox="836 913 1458 949">Corbonation</th> </tr> </thead> <tbody> <tr> <td data-bbox="213 972 836 1429">  </td> <td data-bbox="836 972 1458 1429">  </td> </tr> </tbody> </table>					Chipping	Corbonation		
Chipping	Corbonation							
								
<p>Survey Results</p>								
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)					
Vartical	D29	55	Av.10.0mm (10,15,0,15)					
Horizontal	D16	36						

Result of Chipping and Corbonation test

Group C	P7	South Column	Down-side West Face					
<p>Location</p> 								
<p>Picture</p> <table border="1" data-bbox="213 913 1460 1485"> <thead> <tr> <th data-bbox="213 913 836 949">Chipping</th> <th data-bbox="836 913 1460 949">Corbonation</th> </tr> </thead> <tbody> <tr> <td data-bbox="213 976 836 1429">  </td> <td data-bbox="836 976 1460 1429">  </td> </tr> </tbody> </table>					Chipping	Corbonation		
Chipping	Corbonation							
								
<p>Survey Results</p>								
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)					
Vartical	D29	59	Av.6.3mm (5,0,10,10)					
Horizontal	D16	43						

Result of Chipping and Corbonation test

Group C	P7	South Column	Down-side West Face
Location			
Picture Chipping		Corbonation	
Survey Results			
Reinforcement	Presumptive Diameter of Reinforcement	Covering depth (mm)	Corbonation Depth (Up,Down,Right,Left)
Vartical	D29	61	Av.6.3mm
Horizontal	D16	45	(5,10,5,5)

APPENDIX 6.
RECORDS OF RIVER TRAFFIC SURVEY

Bangladesh
PREPARATORY SURVEY FOR DHAKA-CHITTAGONG
NATIONAL HIGHWAY NO.1
BRIDGE CONSTRUCTION AND REHABILITATION PROJECT

Present River Traffic Condition
Report

2012

1. Present River Traffic Condition

(1) Purpose

Bridged site special factor pertaining to the bridge River in the work plan, flood, and consideration of water level changes as the tidal river, Riverbed scouring, and ferry traffic congested to the point must be made.

Grasp the present river traffic condition is important and on the construction plan to ensure the safety of the ships to navigate and work side

(2) Observation items

Observation items was the present river traffic condition.

(3) Observation methods

1) Observation day, observation time

Weekdays and from observation, to examine the safety of ships in the construction done,. To figure out the average ship traffic to avoid the beginning of the week and weekend. Also as a daytime observation time including work time hours morning 7 : 00- 18 : 00.

①Kanchpur Bridge	7 : 00~18 : 00	3 April 2012
②Meghna Bridge	7 : 00~18 : 00	4 April 2012
③Gumti Bridge(Dhaka Side)	7 : 00~18 : 00	10 April 2012
(Chittgong Side)	7 : 00~18 : 00	11 April 2012

2) Observation locations

The surrounding places of three bridges as below where this project is carried out.

- ①Kanchpur Bridge
- ②Meghna Bridge
- ③Gumti Bridge

3) Survey area

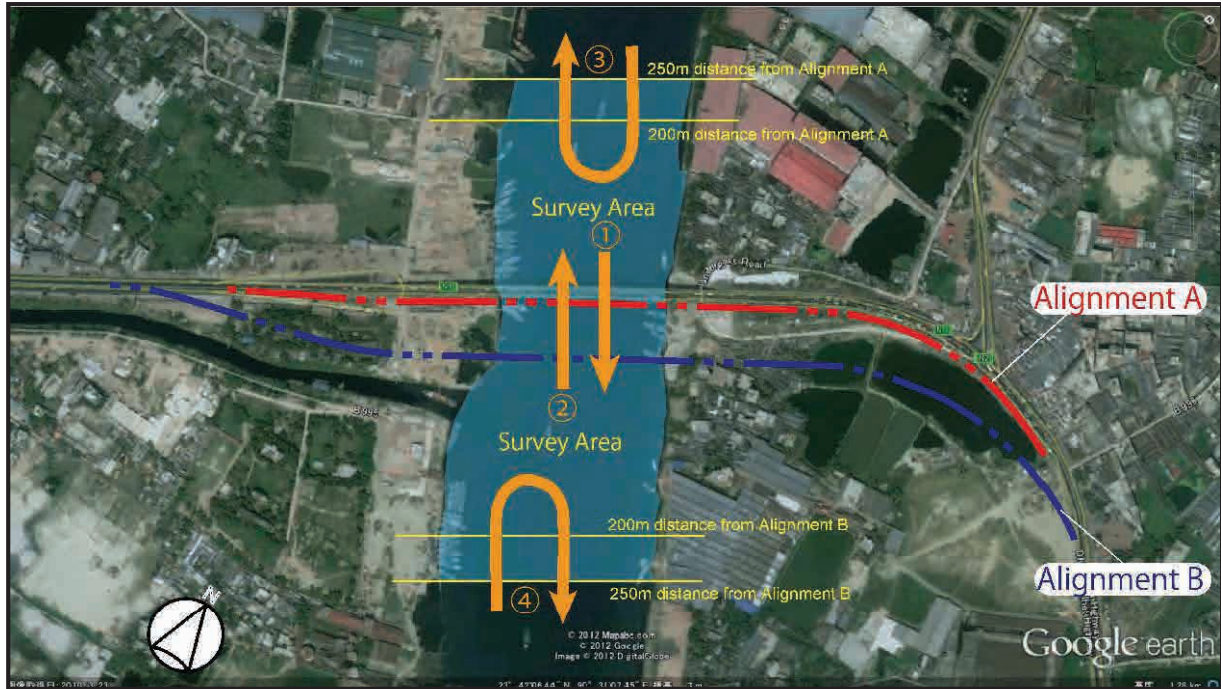
Sphere of influence under construction around, consider the following.

Scope of influence by construction considering these items generally 200 metre.

Further consider 50 metre, adding the observation range is 250 metre.

Figure -1(1)~(3) show the direction in which the navigation of the ships to observe and range.

- (a) The size of the plant ship
- (b) Water Depth
- (c) Length and angle of the crane
- (d) Angle of the anchor



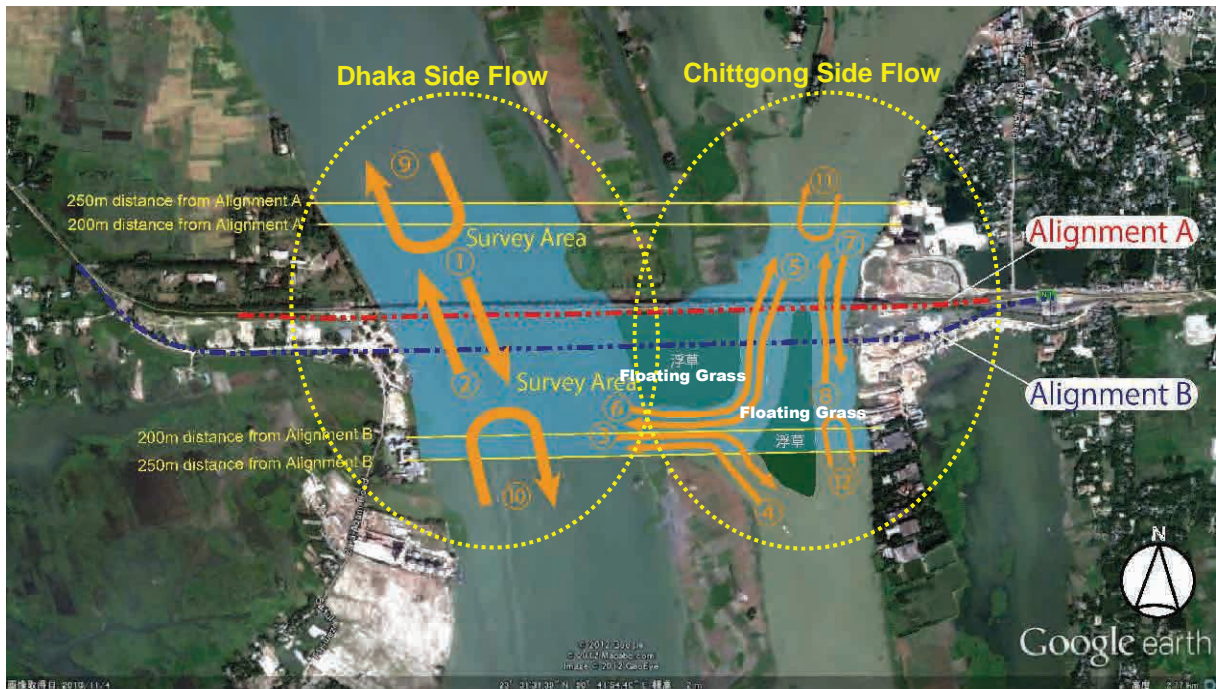
- Direction① : Ship to pass under the Kanchpur Bridge from upstream to downstream
- Direction② : Ship to pass under the Kanchpur Bridge from downstream to upstream
- Direction③ : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Kanchpur Bridge
- Direction④ : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Kanchpur Bridge

Figure-1(1) Observation direction and the range of observations (Kanchpur Bridge)



- Direction①
: Ship to pass under the Meghna Bridge from upstream to downstream
- Direction②
: Ship to pass under the Meghna Bridge from downstream to upstream
- Direction③
: Ship to enter and leave in the range of 250m upstream from Alignment-B without passing under the Meghna Bridge
- Direction④
: Ship to enter and leave in the range of 250m downstream from Alignment-A without passing under the Meghna Bridge

Figure-1(2) Observation direction and the range of observations (Meghna Bridge)



- Direction① : Ship to pass under the Gumti Bridge (Dhaka Side Flow) from upstream to downstream
- Direction② : Ship to pass under the Gumti Bridge (Dhaka Side Flow) from downstream to upstream
- Direction③ : Ship to pass from the Dhaka Side Flow to the downstream of Chittgong Side Flow
- Direction④ : Ship to pass from the downstream side of Chittgong Side Flow to the Dhaka Side Flow
- Direction⑤ : Ship to pass from upstream to downstream under the Gumti Bridge(Chittgong Side Flow) and toward the Dhaka-Side Flow
- Direction⑥ : Ship to pass from Dhaka Side Flow to the Chittgong Side Flow and to pass from downstream to upstream under the Gumti Bridge (Chittgong Side Flow)
- Direction⑦ : Ship to pass from upstream to downstream under Gumti Bridge (Chittagong Side Flow)
- Direction⑧ : Ship to pass from downstream to upstream under Gumti Bridge (Chittagong Side Flow)
- Direction⑨ : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Gumti Bridge
- Direction⑩ : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Gumti Bridge
- Direction⑪ : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Gumti Bridge(Chittgong Side Flow)
- Direction⑫ : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Gumti Bridge(Chittgong Side Flow)

Figure-1(3) Observation direction and the range of observations (Gumti Bridge)

4) Ship classification

Observed ships are classified into two types : ships carrying people and ships carrying luggage.

In addition, the length of the hull are classified into three types: less than 30meters, from 30 to 55 meters, more than 50 meters.

5) Observation time

30 minutes per unit.

(4) Survey results

1) Summary

①Kanchpur Bridge (Shitalakha River)

Table-1, Figure 2 and 3 show the results of the number of ships of Kanchpur Bridge. Table-1 shows there were 399 (392 for cargo ships, 7 for passenger ships) ships that passed under the Kanchpur Bridge during 11 hours (from 7:00 to 18:00). From the length point, there were 258 ships with less than 30m, 137 ships with 30~55m, 4 ships with more than 55m, and ships with less than 30m had accounted for 65% of the total.

Investigation was carried out every 30 minutes. Figure-2 shows numbers of ships range from 7 to 28/30 minutes, and the average is 18.1 ships/30 minutes. It refers to 36 ships per hour, and it could be said that the Kanchpur Bridge has a passing ship per 2 minutes.

Figure-2 also shows that there were huge numbers of passing ships from 13:00 to 14:00, and it would be 55 ships/hour. From this, it could be said that the Kanchpur Bridge has a passing ship per a minute. 5 Ships entered and left the observation range of 250m without passing under the Kanchpur Bridge. In the observation site, there were no ships for fishing due to river pollution.

Table-1 The Number of ships (Kanchpur Bridge)

Direction Passenger/Cargo Size of ship	1+2						1+2 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30				1	9		10
7:30 ~ 8:00				17	6		23
8:00 ~ 8:30				10	7		17
8:30 ~ 9:00				6	1		7
9:00 ~ 9:30				10	1	1	12
9:30 ~ 10:00				13	8	2	23
10:00 ~ 10:30				8	3		11
10:30 ~ 11:00				8	6		14
11:00 ~ 11:30				10	2		12
11:30 ~ 12:00				10			10
12:00 ~ 12:30				12	11		23
12:30 ~ 13:00	3			6	13	1	23
13:00 ~ 13:30				13	15		28
13:30 ~ 14:00	1			13	13		27
14:00 ~ 14:30				13	7		20
14:30 ~ 15:00				12	3		15
15:00 ~ 15:30				17	4		21
15:30 ~ 16:00				9	6		15
16:00 ~ 16:30				8	5		15
16:30 ~ 17:00				12	12		24
17:00 ~ 17:30				24	2		26
17:30 ~ 18:00	1			19	3		23
Total	7			251	137	4	399
Percentage	1.8%			62.9%	34.3%	1.0%	100.0%

Direction Passenger/Cargo Size of ship	3+4						3+4 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30							
7:30 ~ 8:00							
8:00 ~ 8:30							
8:30 ~ 9:00							
9:00 ~ 9:30					1		1
9:30 ~ 10:00							
10:00 ~ 10:30							
10:30 ~ 11:00							
11:00 ~ 11:30							
11:30 ~ 12:00							
12:00 ~ 12:30							
12:30 ~ 13:00					1		1
13:00 ~ 13:30							
13:30 ~ 14:00							
14:00 ~ 14:30							
14:30 ~ 15:00					1		1
15:00 ~ 15:30							
15:30 ~ 16:00							
16:00 ~ 16:30							
16:30 ~ 17:00				1			1
17:00 ~ 17:30				1			1
17:30 ~ 18:00							
Total				2	3		5
Percentage				40.0%	60.0%		100.0%

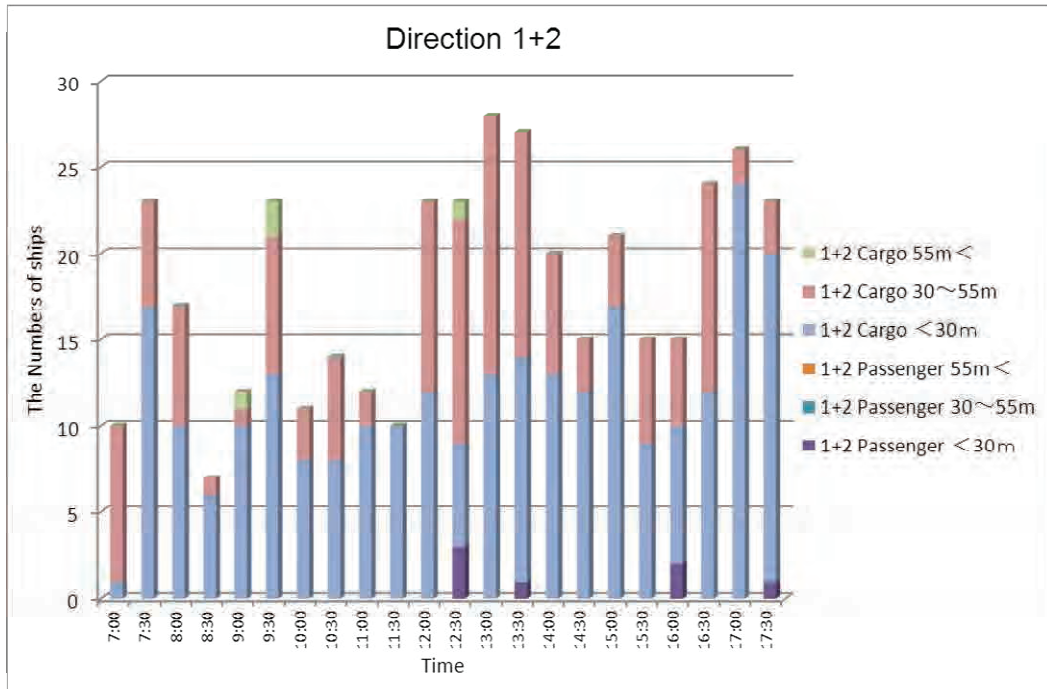


Figure-2 The numbers of ships passed under the Bridge (Kanchpur Bridge)

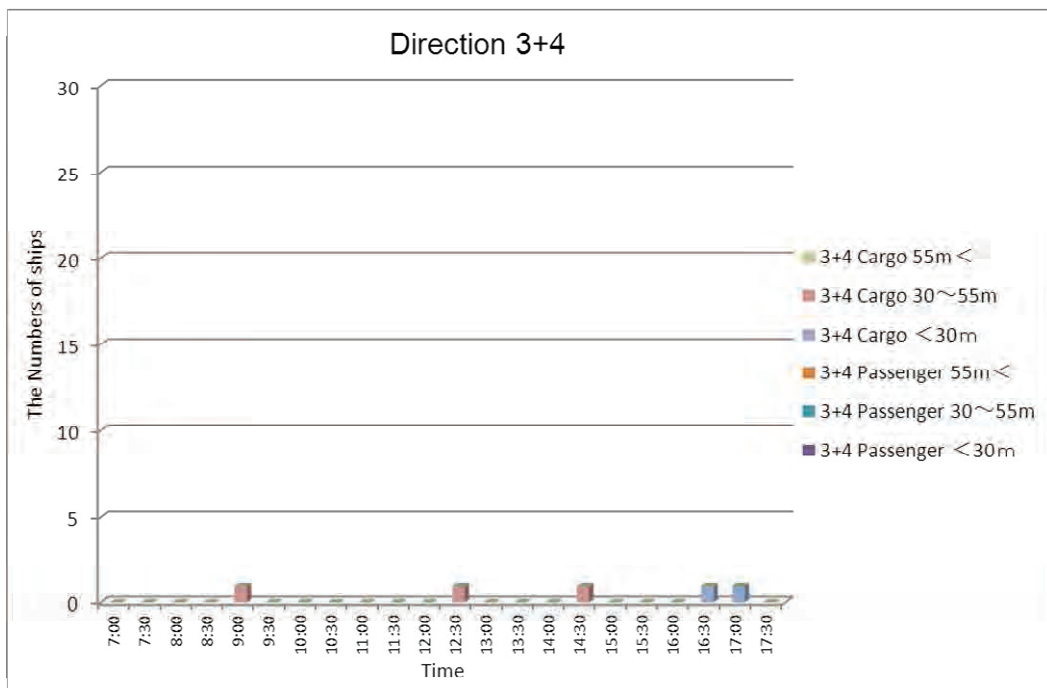


Figure-3 The numbers of ships approached (Kanchpur Bridge)

②Meghna Bridge (Meghna River)

Table-2, Figure 4 and 5 show the results of the number of ships of Meghna Bridge. Table-2 shows there were 611(581 for cargo ships, 30 for passenger ships) ships that passed under the Meghna Bridge during 11 hours (from 7:00 to 18:00). From the length point, there were 362 ships with less than 30m, 249 ships with 30 ~ 55m, no ship with more than 55m. and Ships with less than 30m had accounted for 60% of the total.

In the observation site of the right bank of the river, there were many moored ships with more than 55m but these ships did not sail on the day of observation.

Investigation was carried out every 30 minutes. Figure-4 shows numbers of ships range from 17 to 38/30 minutes, and the average is 27.8 ships/30 minutes. It refers to 55.6 ships per hour, and it could be said that the Meghna Bridge has a passing ship per one minute.

Figure-4 also shows that there were huge numbers of passing ships from 7:00 to 8:00, and it would be 71 ships/hour. From this, it could be said that the Meghna Bridge has a passing ship per 50 second. 29 ships entered and left the observation range of 250m without passing under the Meghna Bridge. Many of these are passenger ferries to and from the Meghna Ghaut.

In the observation site, there were 2~5 boats for fishing every one hour.

Table-2 The Number of ships (Meghna Bridge)

Direction Passenger/Cargo Size of ship	1+2						1+2 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30	8			10	15		33
7:30 ~ 8:00	4			19	15		38
8:00 ~ 8:30	4			26	8		38
8:30 ~ 9:00	1			10	13		24
9:00 ~ 9:30	1			13	15		29
9:30 ~ 10:00	5			11	10		26
10:00 ~ 10:30				15	13		28
10:30 ~ 11:00				20	2		22
11:00 ~ 11:30	1			18	12		31
11:30 ~ 12:00				15	6		21
12:00 ~ 12:30				15	6		21
12:30 ~ 13:00				17	4		21
13:00 ~ 13:30				14	3		17
13:30 ~ 14:00	1			17	12		30
14:00 ~ 14:30				16	16		32
14:30 ~ 15:00	1			20	12		33
15:00 ~ 15:30	1			10	12		23
15:30 ~ 16:00	1			16	13		30
16:00 ~ 16:30	1			16	19		36
16:30 ~ 17:00	1			11	16		28
17:00 ~ 17:30				11	14		25
17:30 ~ 18:00				12	13		25
Total	30			332	249		611
Percentage	4.9%			54.3%	40.8%		100.0%

Direction Passenger/Cargo Size of ship	3+4						3+4 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30	1						1
7:30 ~ 8:00	2				1		3
8:00 ~ 8:30	1						1
8:30 ~ 9:00	1						1
9:00 ~ 9:30	1				1		2
9:30 ~ 10:00	2				1		3
10:00 ~ 10:30							0
10:30 ~ 11:00	1			1	1		3
11:00 ~ 11:30	1						1
11:30 ~ 12:00	2				1		3
12:00 ~ 12:30							0
12:30 ~ 13:00	1						1
13:00 ~ 13:30	1						1
13:30 ~ 14:00	1						1
14:00 ~ 14:30	2						2
14:30 ~ 15:00							0
15:00 ~ 15:30	1						1
15:30 ~ 16:00	1						1
16:00 ~ 16:30	2						2
16:30 ~ 17:00							0
17:00 ~ 17:30	1						1
17:30 ~ 18:00	1						1
Total	23			1	5		29
Percentage	79.3%			3.4%	17.2%		100.0%

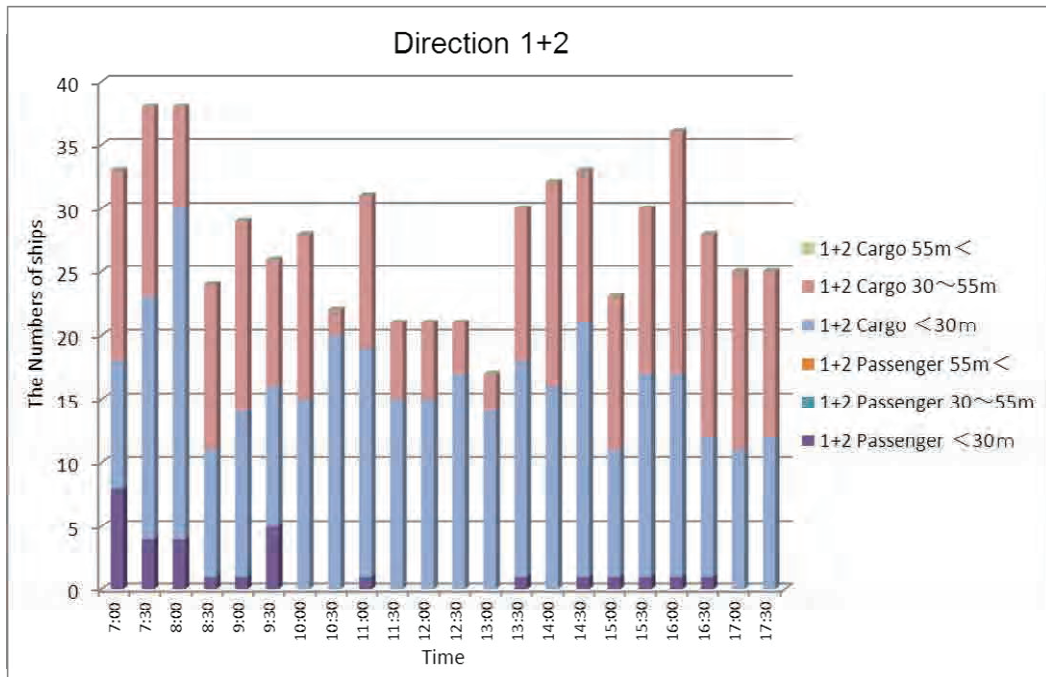


Figure-4 The numbers of ships passed under the Bridge (Meghna Bridge)

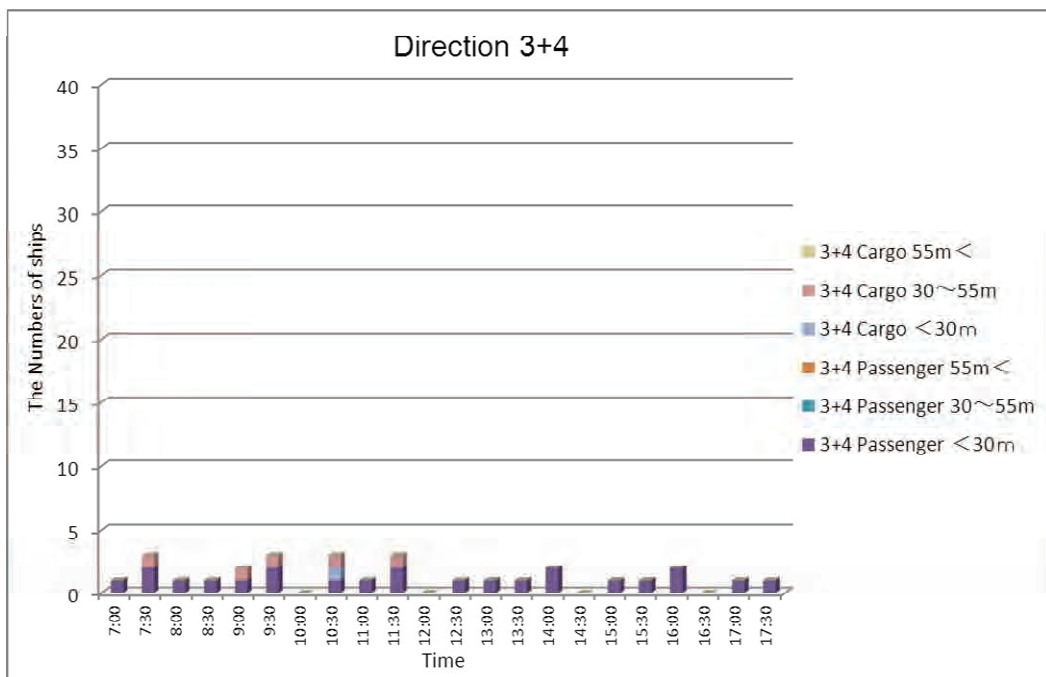


Figure-5 The numbers of ships approached (Meghna Bridge)

③Gumti Bridge (Gumti River)

Gumti bridge is considered to be two rivers (Dhaka Side Flow and Chittgong Side Flow). Because there are sandbank in stream.

1) Dhaka Side Flow

Table-3, Figure 6 and 7 show the results of the number of ships of Gumti Bridge (Dhaka Side Flow). Table-3 shows there were 174 (all for cargo ships) ships that passed under the Gumti Bridge during 11 hours (from 7:00 to 18:00). From the length point, there were 128 ships with less than 30m, 46 ships with 30 ~ 55m, no ship with more than 55m, and ships with less than 30m had accounted for 74% of the total.

Investigation was carried out every 30 minutes. Figure-6 shows numbers of ships range from 0 to 20 /30minutes, and the average is 8ships/30minutes. It refers to 16 ships per hour, and it could be said that the Gumti Bridge (Dhaka Side Flow) has a passing ship per about 4 minutes.

Figure-6 also shows that there were huge numbers of passing ships from 11:00 to 12:00, and it would be 28 ships/hour. From this, it could be said that the Gumti Bridge (Dhaka Side Flow) has a passing ship per 2 minutes. 116 ships entered and left the observation range of 250m without passing under the Gumti Bridge. In the observation site, there were 2~8 boats for fishing every an hour.

Table-3 The Number of Ships (Gumti Bridge : Dhaka Side Flow)

Direction Passenger/Cargo Size of ship	1+2						1+2 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30				3			3
7:30 ~ 8:00				8	1		9
8:00 ~ 8:30				8	2		10
8:30 ~ 9:00				4			4
9:00 ~ 9:30				5	2		7
9:30 ~ 10:00				11	4		15
10:00 ~ 10:30				12	2		14
10:30 ~ 11:00				7	6		13
11:00 ~ 11:30				7	1		8
11:30 ~ 12:00				15	5		20
12:00 ~ 12:30							
12:30 ~ 13:00				4			4
13:00 ~ 13:30				16	2		18
13:30 ~ 14:00							0
14:00 ~ 14:30				4			4
14:30 ~ 15:00				1	5		6
15:00 ~ 15:30				4	6		10
15:30 ~ 16:00				2	4		6
16:00 ~ 16:30				3			3
16:30 ~ 17:00				6	3		9
17:00 ~ 17:30				5	1		6
17:30 ~ 18:00				3	2		5
Total				128	46		174
Percentage				73.6%	26.4%		100.0%

Direction Passenger/Cargo Size of ship	9+10						9+10 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30	1			9			10
7:30 ~ 8:00	1			4			5
8:00 ~ 8:30	4			5			9
8:30 ~ 9:00	2						2
9:00 ~ 9:30	2			2	2		6
9:30 ~ 10:00	6						6
10:00 ~ 10:30	4			1			5
10:30 ~ 11:00	4						4
11:00 ~ 11:30	5			3			8
11:30 ~ 12:00	7			1	3		11
12:00 ~ 12:30	2						2
12:30 ~ 13:00							
13:00 ~ 13:30	5			3			8
13:30 ~ 14:00							
14:00 ~ 14:30	3			4			7
14:30 ~ 15:00	3			2			5
15:00 ~ 15:30	4			2			6
15:30 ~ 16:00	3			1			4
16:00 ~ 16:30	3			3			6
16:30 ~ 17:00	2			1			3
17:00 ~ 17:30	1			6			7
17:30 ~ 18:00	1				1		2
Total	63			47	6		116
Percentage	54.3%			40.5%	5.2%		100.0%

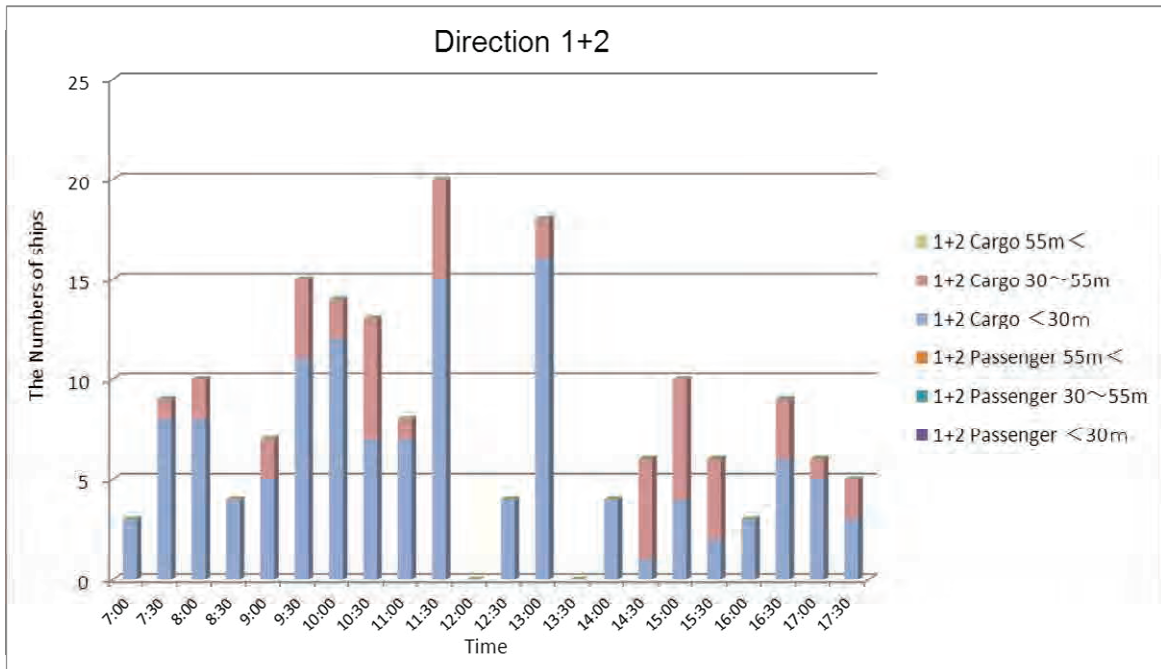


Figure-6 The numbers of ships passed under the Bridge (Gumti Bridge:Dhaka Side Flow)

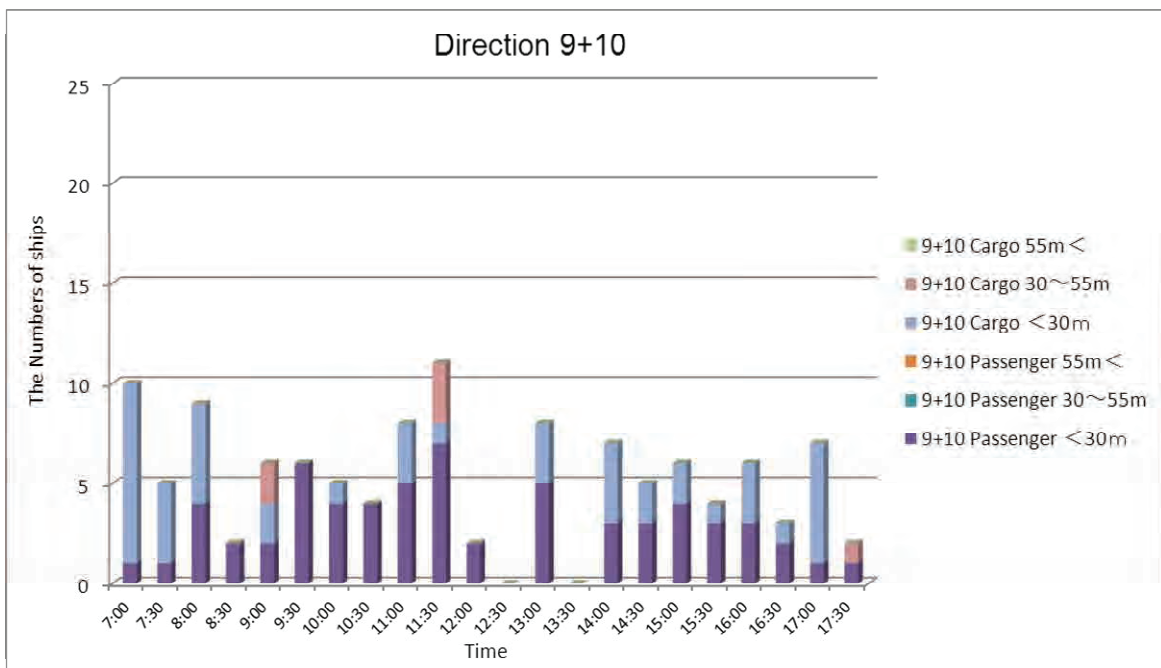


Figure-7 The numbers of ships approached (Gumti Bridge:Dhaka Side Flow)

2) Chittgong Side Flow

Table-4, Figure 8 and 9 show the results of the number of ships of Gumti Bridge(Chittgong Side Flow). Table-4 shows there were 457(391 for cargo ships, 66 for passenger ships) ships that passed under the Gumti Bridge during 11hours (from 7:00 to 18:00). From the length point, there were 427 ships with less than 30m, 30 ships with 30 ~ 55m, no ship with more than 55m, and ships with less than 30m had accounted for 93% of the total.

Investigation was carried out every 30 minutes. Figure-8 shows numbers of ships rage from 12 to 30/30minutes, and the average is 21ships/30minutes. It refers to 42 ships per hour, and it could be said that the Gumti Bridge (Chittgong Side Flow) has a passing ship per about 3 minutes.

Figure-8 also shows that there were huge numbers of passing ships from 14:00 to 15:00, and it would be 57 ships/hour.

From this, it could be said that the Gumti Bridge (Chittgong Side Flow) has a passing ship per a minute. 105 ships entered and left the observation range of 250m without passing under the Gumti Bridge.

In the observation site, there were 1~3 boats for fishing every an hour.

Table-4 The Number of Ships (Gumti Bridge : Chittgong Side Flow)

Direction Passenger/Cargo Size of ship	5+6+7+8						5+6+7+8 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30	1			17	3		21
7:30 ~ 8:00	2			14			16
8:00 ~ 8:30	2			13	2		17
8:30 ~ 9:00	3			18			21
9:00 ~ 9:30	2			13			15
9:30 ~ 10:00	6			15	1		22
10:00 ~ 10:30	6			14	1		21
10:30 ~ 11:00	5			12	2		19
11:00 ~ 11:30	3			16			19
11:30 ~ 12:00	3			15	1		19
12:00 ~ 12:30	2			12	1		15
12:30 ~ 13:00	3			13	1		17
13:00 ~ 13:30	3			24	2		29
13:30 ~ 14:00	4			20	1		25
14:00 ~ 14:30	9			17	1		27
14:30 ~ 15:00	4			24	2		30
15:00 ~ 15:30	2			17	2		21
15:30 ~ 16:00	2			15	6		23
16:00 ~ 16:30	3			17			20
16:30 ~ 17:00	1			23	2		26
17:00 ~ 17:30				10	2		12
17:30 ~ 18:00				22			22
Total	66			361	30		457
Percentage	14.4%			79.0%	6.6%		100.0%

Direction Passenger/Cargo Size of ship	3+4+11+12						3+4+11+12 Total (all)
	Passenger			Cargo			
	<30m	30~55m	55m<	<30m	30~55m	55m<	
7:00 ~ 7:30				1			1
7:30 ~ 8:00				9			9
8:00 ~ 8:30				1	3		4
8:30 ~ 9:00				2			2
9:00 ~ 9:30				9			9
9:30 ~ 10:00				8	5		13
10:00 ~ 10:30				10	4		14
10:30 ~ 11:00				3			3
11:00 ~ 11:30				4			4
11:30 ~ 12:00				4			4
12:00 ~ 12:30				3			3
12:30 ~ 13:00				3			3
13:00 ~ 13:30				3			3
13:30 ~ 14:00				2			2
14:00 ~ 14:30				3	1		4
14:30 ~ 15:00				1	1		2
15:00 ~ 15:30				3	2		5
15:30 ~ 16:00				4			4
16:00 ~ 16:30				7	2		9
16:30 ~ 17:00				1			1
17:00 ~ 17:30				2	2		4
17:30 ~ 18:00				1	1		2
Total				84	21		105
Percentage				80.0%	20.0%		100.0%

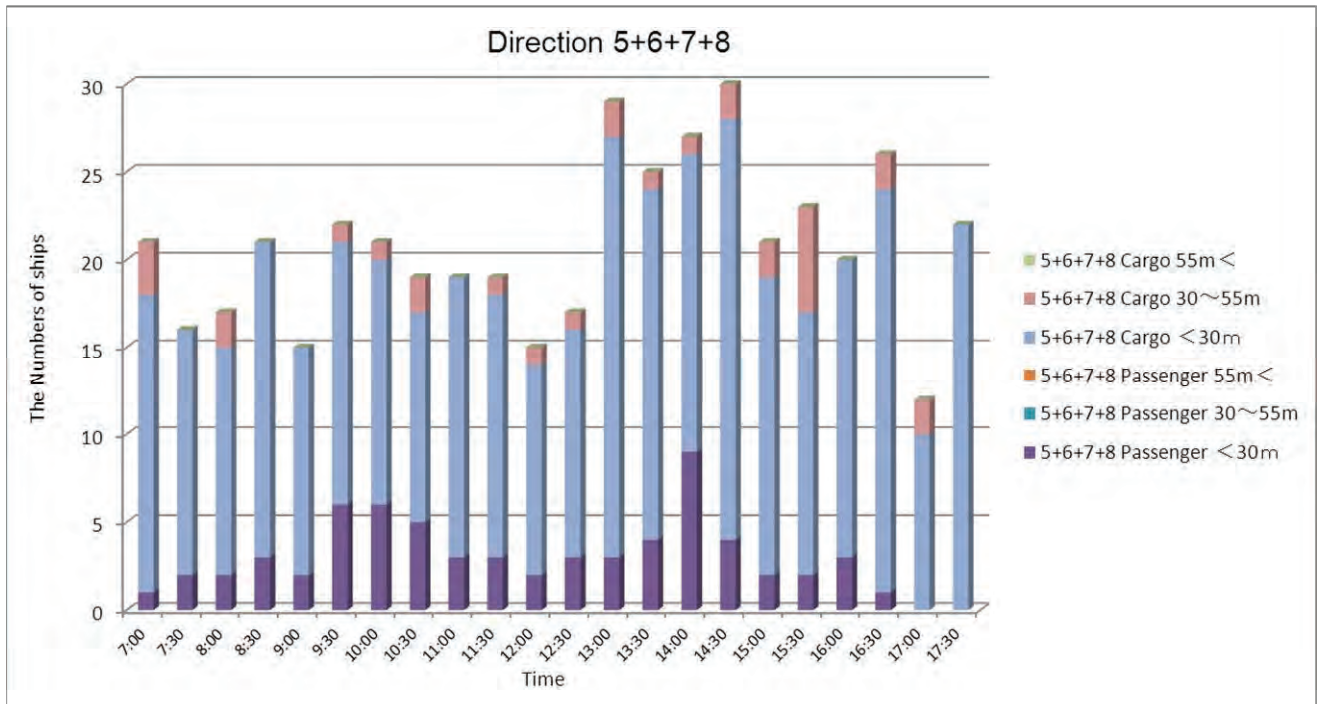


Figure-8 The numbers of ships passed under the Bridge (Gumti Bridge : Chittgong Side Flow)

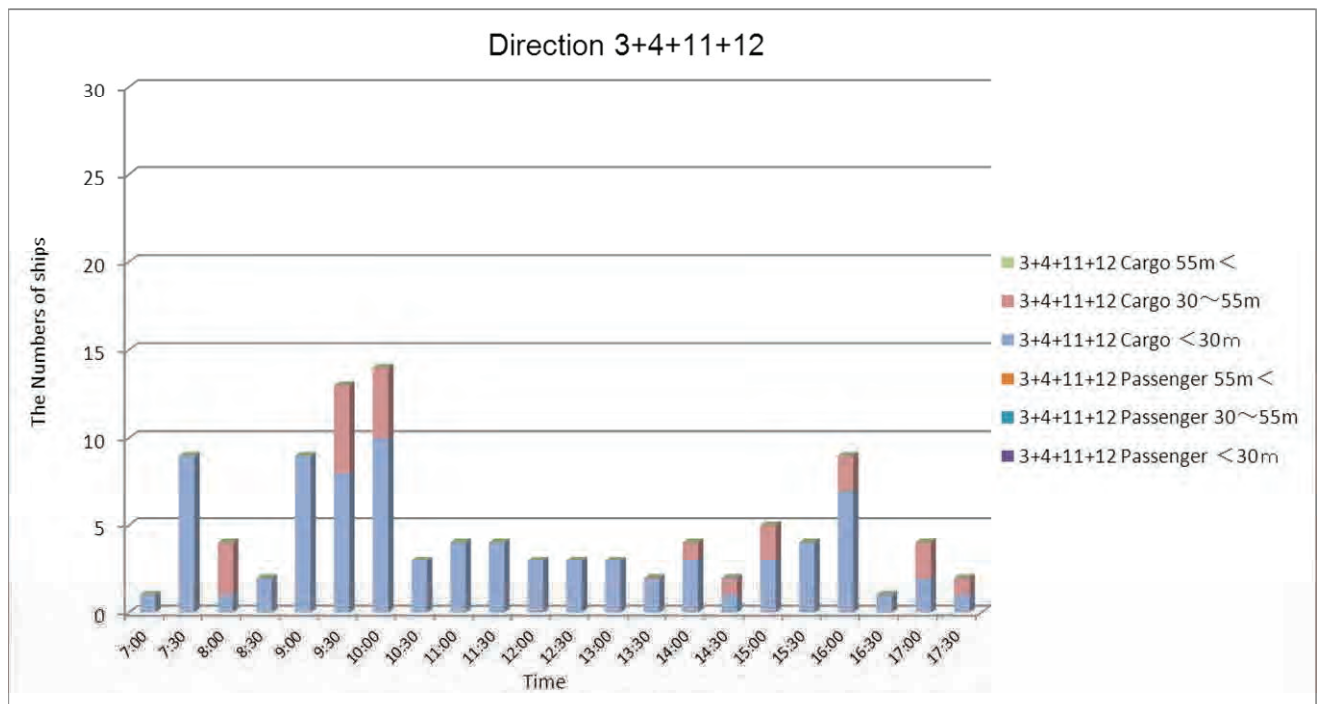


Figure-9 The numbers of ships approached (Gumti Bridge : Chittgong Side Flow)

2) A different direction

① Kanchpur Bridge (Shitalakha River)

Figure -10(1)~(4) show the results of the number of ships of Kanchpur Bridge.

(Direction①) : Ship to pass under the Kanchpur Bridge from upstream to downstream)

There were 183(181for cargo ships,2 for passenger ships) ships that passed under the Kanchpur Bridge. From the length point, there were 132 ships with less than 30m,48 ships with 30~55m, 3 ships with more than 55m. There were huge numbers of passing ships from 13:00 to 14:00, and it would be 22ships/hour.

(Direction②) : Ship to pass under the Kanchpur Bridge from downstream to upstream)

There were 216(211 for cargo ships,5 for passenger ships) ships that passed under the Kanchpur Bridge. From the length point, there were 126 ships with less than 30m,89 ships with 30~55m, one ship with more than 55m. There were huge numbers of passing ships from 17:00 to 18:00, and it would be 43ships/hour.

(Direction③) : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Kanchpur Bridge)

Not observed

(Direction④) : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Kanchpur Bridge)

Total number of ships were five ships. The ships had been anchored on the left bank downstream side, sailed to downstream.

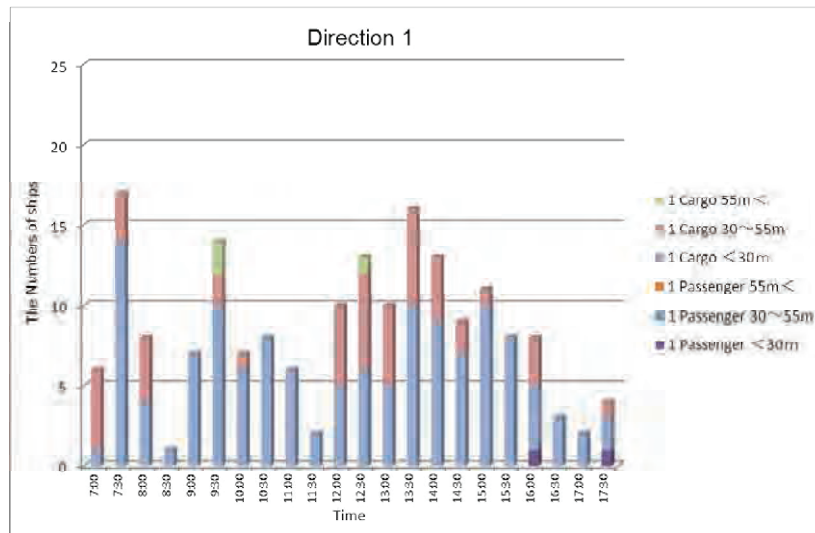


Figure-10(1) The Numbers of Ships (Direction 1) (Kanchpur Bridge)

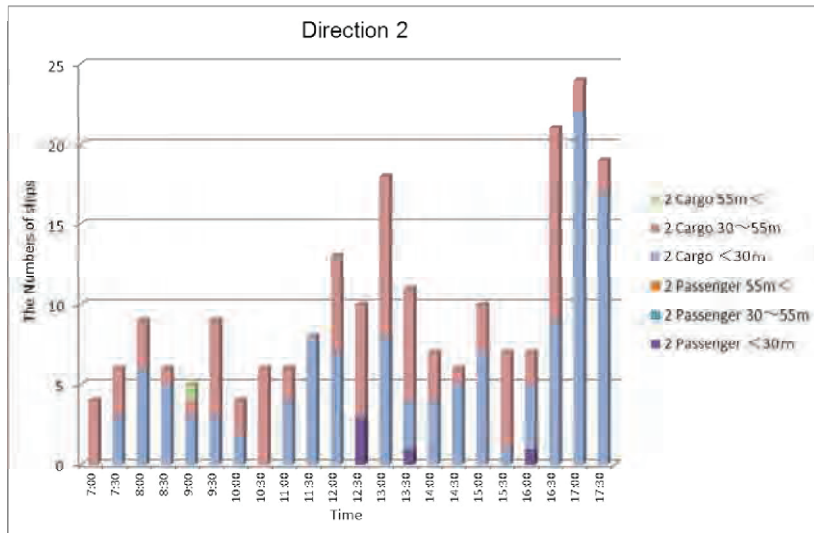


Figure-10(2) The Numbers of Ships (Direction 2) (Kanchpur Bridge)

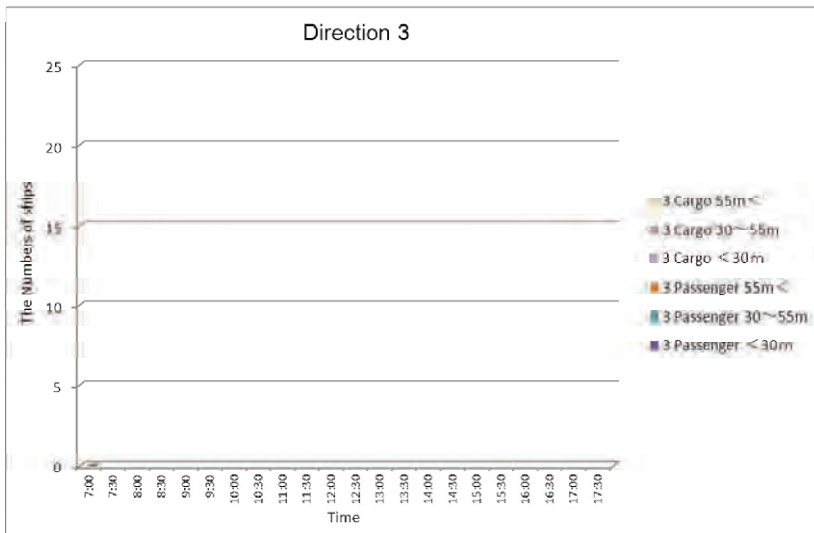


Figure-10(3) The Numbers of Ships (Direction 3) (Kanchpur Bridge)

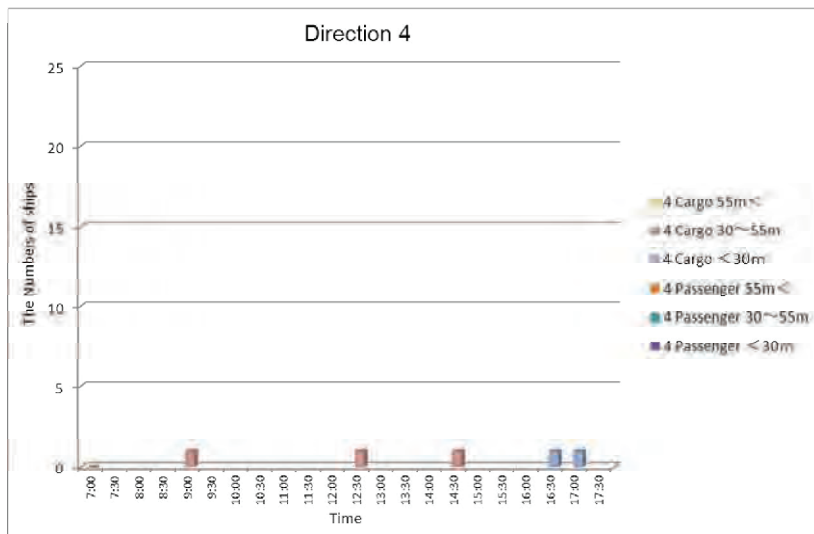


Figure-10(4) The Numbers of Ships (Direction 4) (Kanchpur Bridge)

②Meghna Bridge (Meghna River)

Figure -11(1)~(4) show the results of the number of ships of Meghna Bridge.

(Direction① : Ship to pass under the Meghna Bridge from upstream to downstream)

There were 300(280 for cargo ships, 20 for passenger ships) ships that passed under the Meghna Bridge. From the length point, there were 171 ships with less than 30m, 129 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 16:00 to 17:00, and it would be 43 ships/hour.

(Direction② : Ship to pass under the Meghna Bridge from downstream to upstream)

There were 311(301 for cargo ships, 10 for passenger ships) ships that passed under the Meghna Bridge. From the length point, there were 191 ships with less than 30m, 120 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 8:00 to 9:00, and it would be 36 ships/hour.

(Direction③ : Ship to enter and leave in the range of 250m upstream from Alignment-B without passing under the Meghna Bridge)

There were 25(2 for cargo ships, 23 for passenger ships) ships that entered and left in the range of 250m upstream from Alignment-B. Many of these are passenger ferries to and from the Meghna Ghaut.

From the length point, there were 24 ships with less than 30m, a ship with 30 ~ 55m, no ship with more than 55m.

(Direction④ : Ship to enter and leave in the range of 250m downstream from Alignment-A without passing under the Meghna Bridge)

Total number of ships were four ships. The ships had been anchored on the left bank downstream side, sailed to downstream.

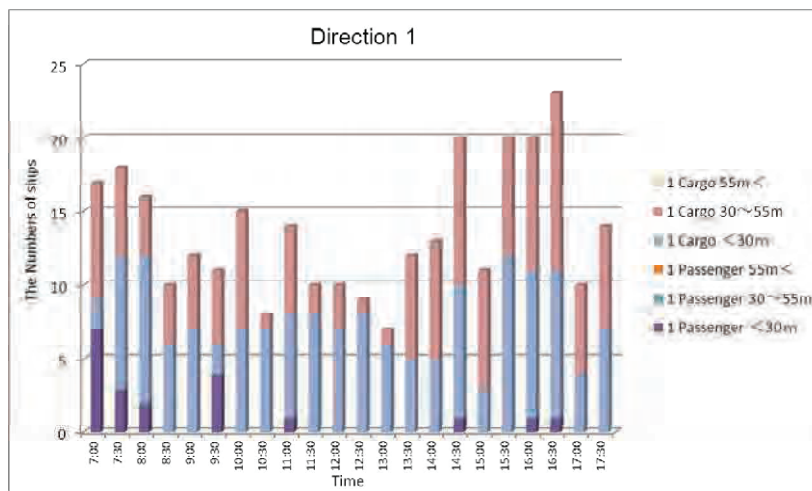


Figure-11(1) The Numbers of Ships (Direction 1) (Meghna Bridge)

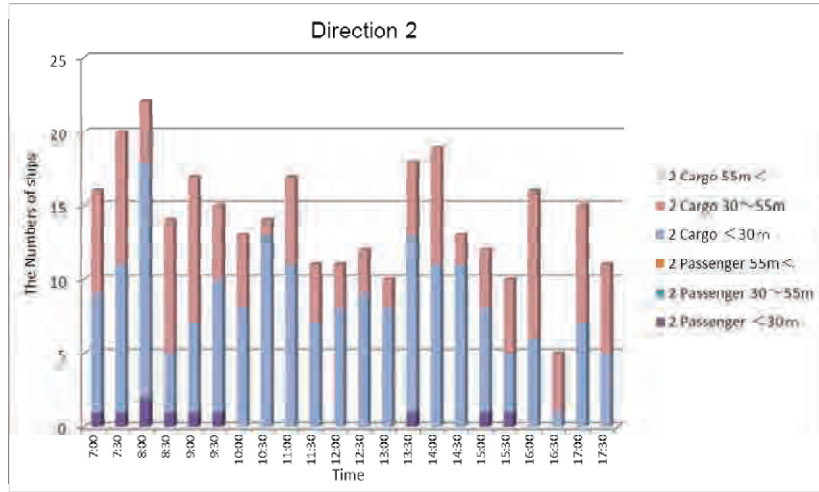


Figure-11(2) The Numbers of Ships (Direction 2) (Meghna Bridge)

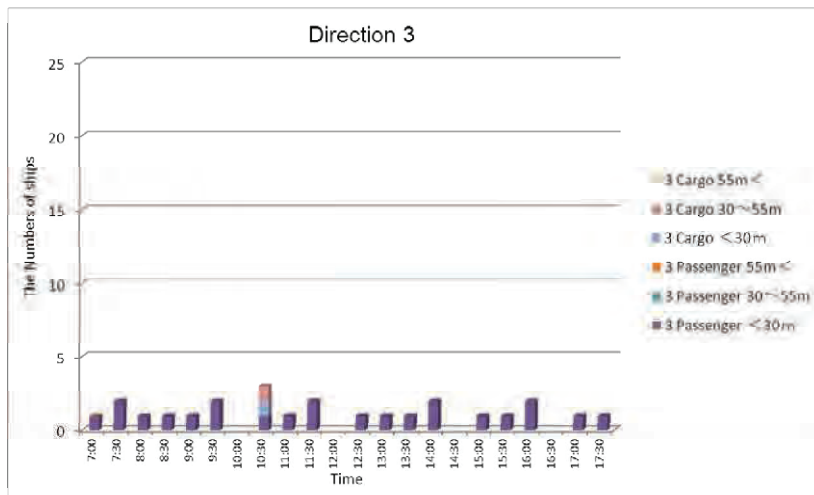


Figure-11(3) The Numbers of Ships (Direction 3) (Meghna Bridge)

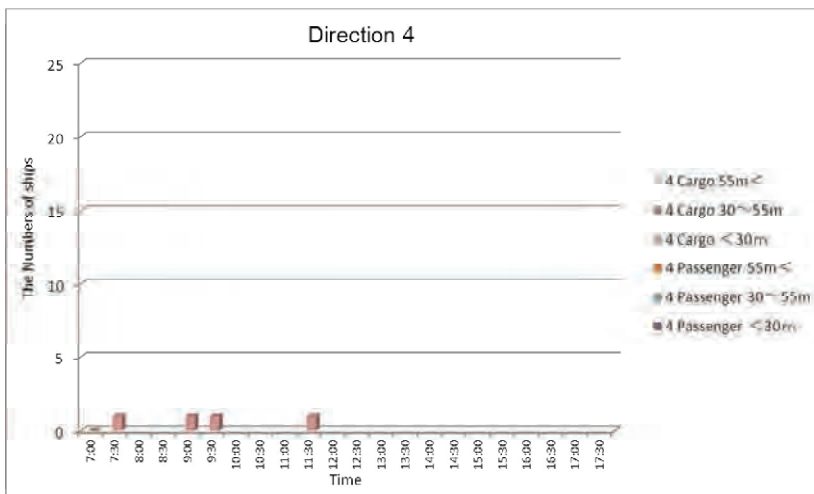


Figure-11(4) The Numbers of Ships (Direction 4) (Meghna Bridge)

③ Gumti Bridge (Gumti River)
【Dhaka Side Flow】

Figure -12(1)~(4) show the results of the number of ships of Gumti Bridge.

(Direction①) : Ship to pass under the Gumti Bridge (Dhaka Side Flow) from upstream to downstream)

There were 91(all for cargo ships) ships that passed under the Gumti Bridge(Dhaka Side Flow). From the length point, there were 66 ships with less than 30m, 25 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 11:00 to 12:00, and it would be 17 ships/hour.

(Direction②) : Ship to pass under the Gumti Bridge (Dhaka Side Flow) from downstream to upstream)

There were 83(all for cargo ships) ships that passed under the Gumti Bridge(Dhaka Side Flow). From the length point, there were 62 ships with less than 30m, 21 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 10:00 to 11:00, and it would be 15 ships/hour.

(Direction⑨) : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Gumti Bridge)

There were one(all for passenger ship)ship that entered and left in the range of 250m upstream from Alignment-A.

(Direction⑩) : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Gumti Bridge)

There were 115(53 for cargo ships, 62 for passenger ships) ships that entered and left in the range of 250m downstream from Alignment-B. Many of these are passenger ferries to and from the Bhushia Ghaut.

From the length point, there were 109 ships with less than 30m, 6 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 11:00 to 12:00, and it would be 19 ships/hour.

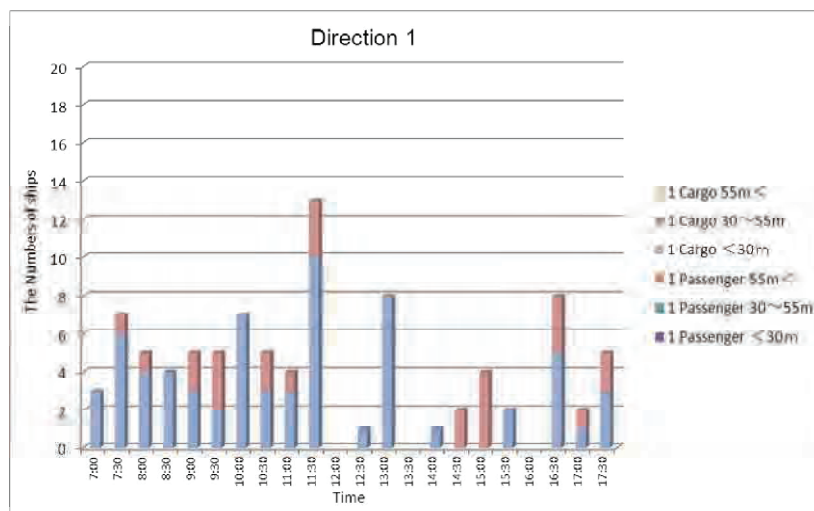


Figure-12(1) The Numbers of Ships (Direction 1) (Gumti Bridge)

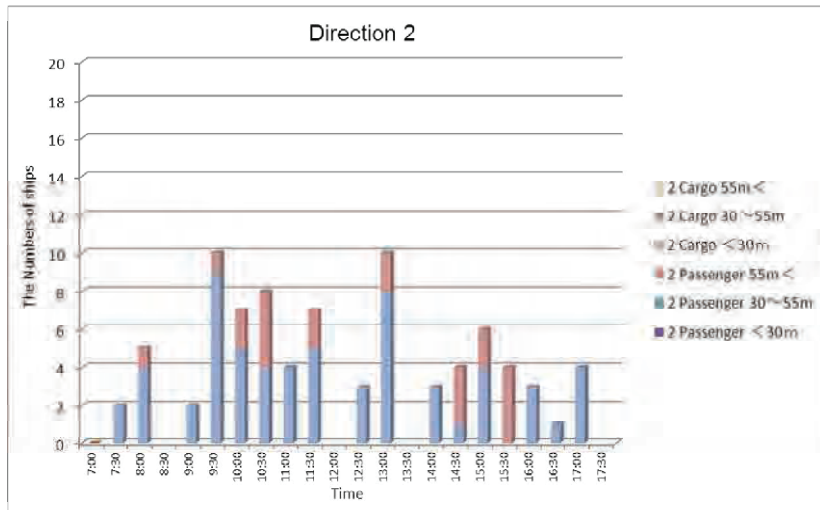


Figure-12(2) The Numbers of Ships (Direction 2) (Gumti Bridge)

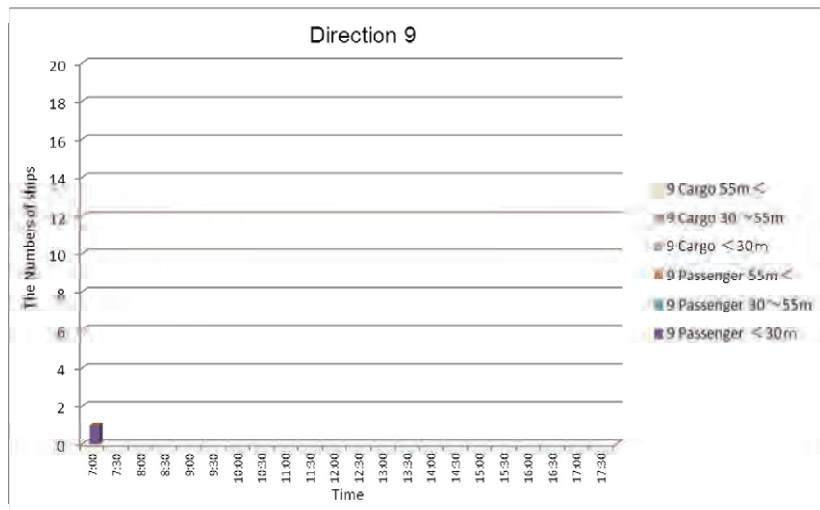


Figure-12(3) The Numbers of Ships (Direction 9) (Gumti Bridge)

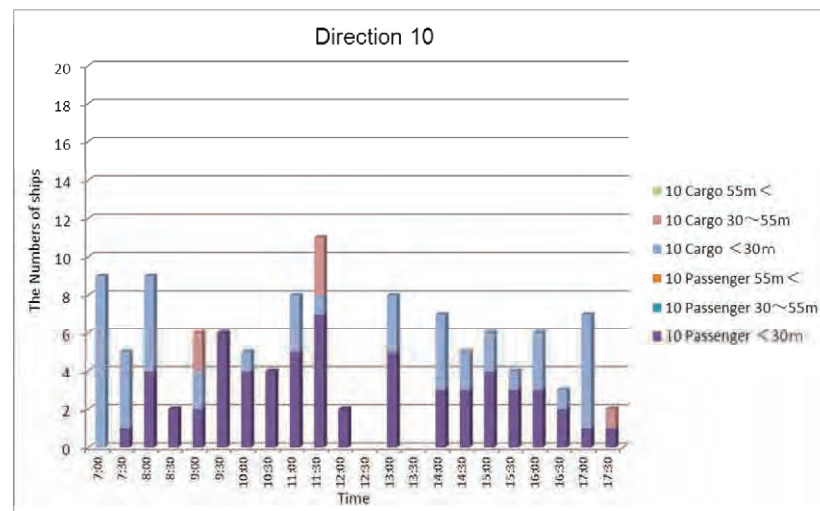


Figure-12(4) The Numbers of Ships (Direction 10) (Gumti Bridge)

【Chittgong Side Flow】

Figure -12(5)~(12) show the results of the number of ships of Gumti Bridge.

(Direction③) : Ship to pass from the Dhaka Side Flow to the downstream of Chittgong Side Flow)

There were 21(all for cargo ships)ships that passed from the Dhaka Side Flow.
From the length point, there were 13 ships with less than 30m, 8 ships with 30 ~ 55m, no ship with more than 55m.
There were huge numbers of passing ships from 9:00 to 10:00, and it would be 6 ships/hour.

(Direction④) : Ship to pass from the downstream side of Chittgong Side Flow to the Dhaka Side Flow)

There were 37(all for cargo ships) ships that passed from the downstream side of Chittgong Side.
From the length point, there were 29 ships with less than 30m, 8 ships with 30 ~ 55m, no ship with more than 55m.
There were huge numbers of passing ships from 10:00 to 11:00, and it would be 8 ships/hour.

(Direction⑤) : Ship to pass from upstream to downstream under the Gumti Bridge(Chittgong Side Flow) and toward the Dhaka-Side Flow)

There were 221(198 for cargo ships, 23 for passenger ships) ships that passed from upstream to downstream under the Gumti Bridge(Chittgong Side Flow).
From the length point, there were 206 ships with less than 30m, 15 ships with 30 ~ 55m, no ship with more than 55m.
There were huge numbers of passing ships from 14:00 to 15:00, and it would be 38 ships/hour.

(Direction⑥) : Ship to pass from Dhaka Side Flow to the Chittgong Side Flow and to pass from downstream to upstream under the Gumti Bridge (Chittgong Side Flow))

There were 225(183 for cargo ships, 42for passenger ships) ships that passed from Dhaka Side Flow to the Chittgong Side Flow.
From the length point, there were 210 ships with less than 30m, 15 ships with 30 ~ 55m, no ship with more than 55m.
There were huge numbers of passing ships from 10:00 to 11:00 and from 16:00 to 17:00, and it would be 27 ships/hour.

(Direction⑦) : Ship to pass from upstream to downstream under Gumti Bridge (Chittagong Side Flow))

There were one(for passenger ship with less than 30m) ship that passed from upstream to downstream under Gumti Bridge (Chittagong Side Flow))

(Direction⑧) : Ship to pass from downstream to upstream under Gumti Bridge (Chittagong Side Flow))

There were 10(all for cargo ships with less than 30m) ships that passed from downstream to upstream under Gumti Bridge (Chittagong Side Flow).
There were huge numbers of passing ships from 7:00 to 8:00, and it would be 3 ships/hour.

(Direction ⑪) : Ship to enter and leave in the range of 250m upstream from Alignment-A without passing under the Gumti Bridge)

Not observed

(Direction ⑫) : Ship to enter and leave in the range of 250m downstream from Alignment-B without passing under the Gumti Bridge)

There were 47(all for cargo ships) ships that entered and left in the range of 250m downstream from Alignment-B without passing under the Gumti Bridge).

From the length point, there were 42 ships with less than 30m, 5 ships with 30 ~ 55m, no ship with more than 55m.

There were huge numbers of passing ships from 9:00 to 10:00, and it would be 9 ships/hour.

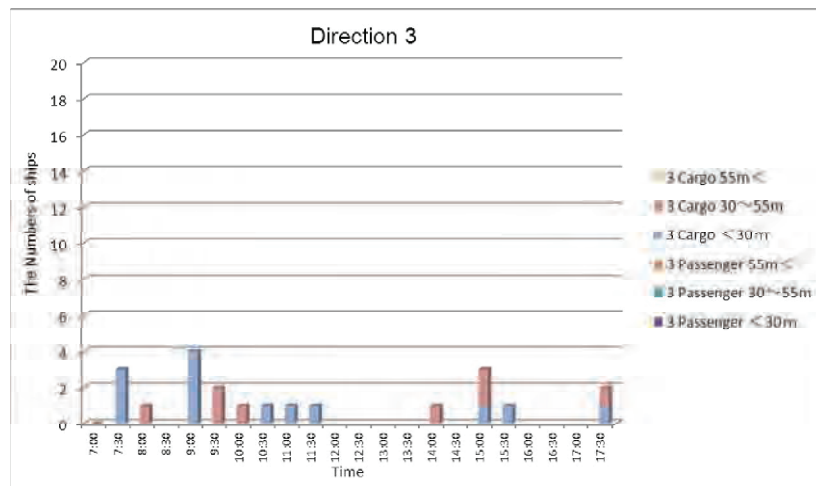


Figure-12(5) The Numbers of Ships (Direction 3) (Gumti Bridge)

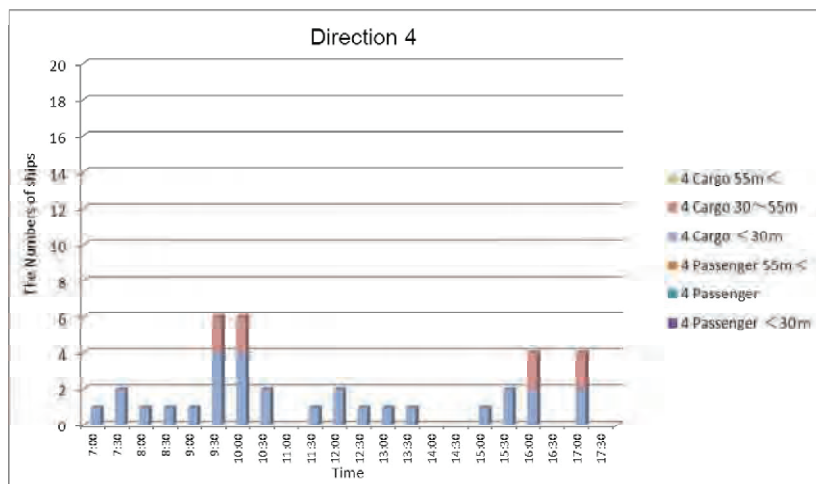


Figure-12(6) The Numbers of Ships (Direction 4) (Gumti Bridge)

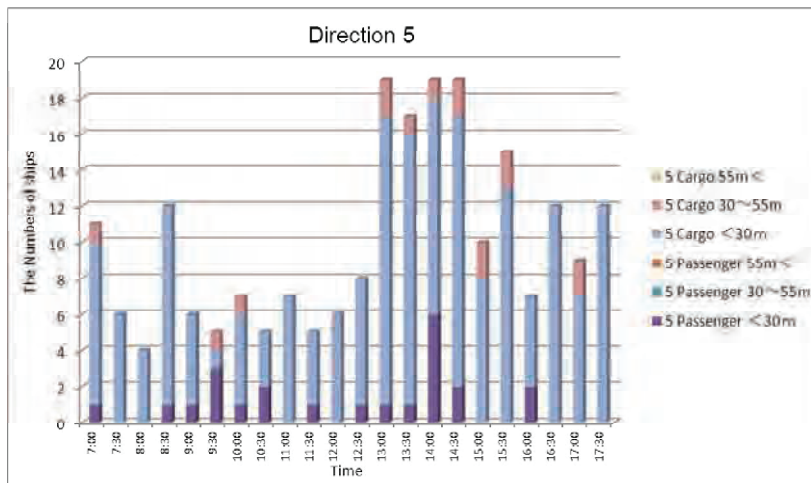


Figure-12(7) The Numbers of Ships (Direction 5) (Gumti Bridge)

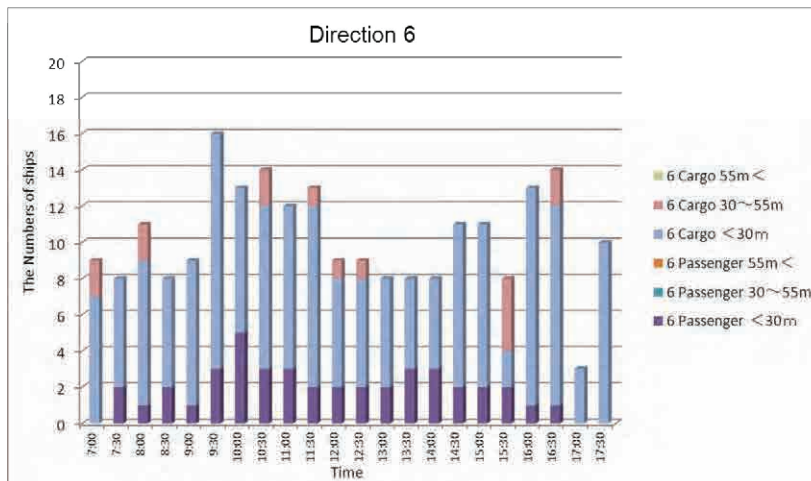


Figure-12(8) The Numbers of Ships (Direction 6) (Gumti Bridge)

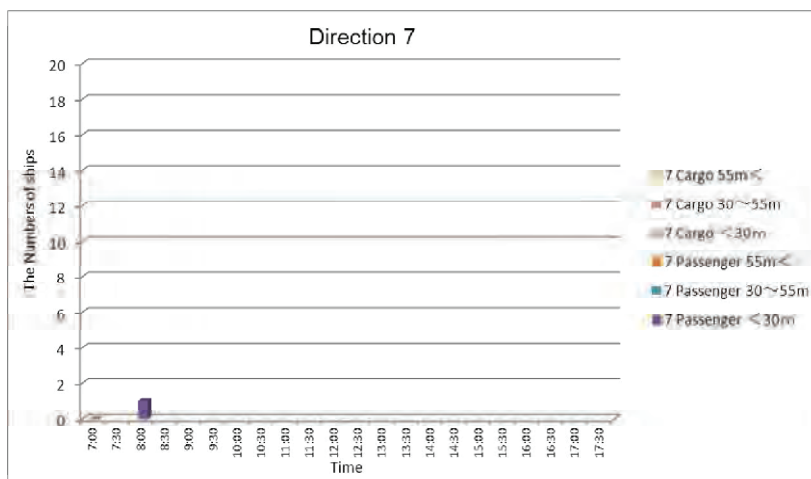


Figure-12(9) The Numbers of Ships (Direction 7) (Gumti Bridge)

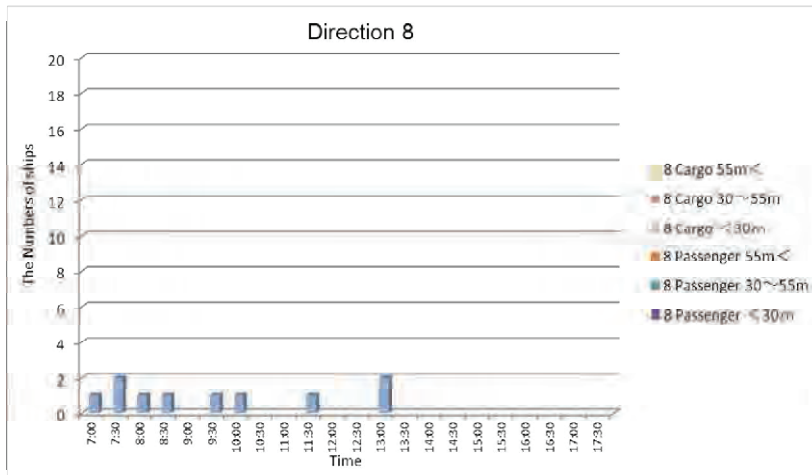


Figure-12(10) The Numbers of Ships (Direction 8) (Gumti Bridge)

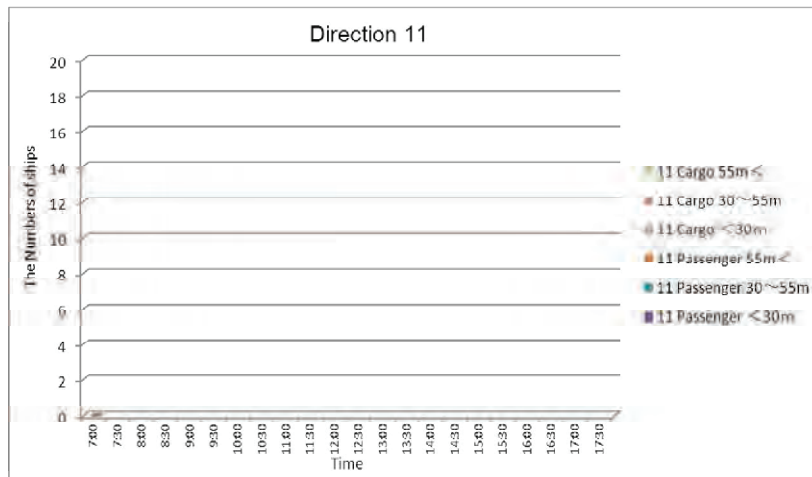


Figure-12(11) The Numbers of Ships (Direction 11) (Gumti Bridge)

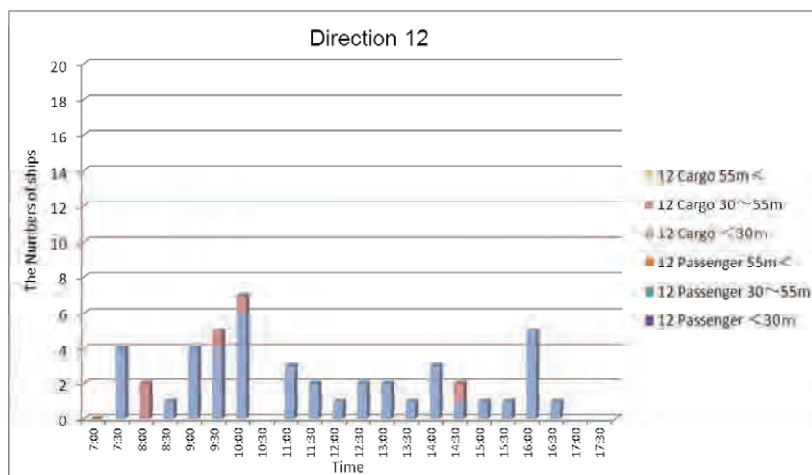


Figure-12(12) The Numbers of Ships (Direction 12) (Gumti Bridge)

Appendix

Table-A The Number of Ships (Kanchpur Bridge)

Direction			1						2						18.13636			
			Passenger			Cargo			Passenger			Cargo			Total	Total		
Size of ship			<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	1+2	1+2+3+4		
7:00 ~ 7:30						1	5						4		10	10		
7:30 ~ 8:00						14	3				3	3			23	23		
8:00 ~ 8:30						4	4				6	3			17	17		
8:30 ~ 9:00						1					5	1			7	7		
9:00 ~ 9:30						7					3	1	1		12	13		
9:30 ~ 10:00						10	2	2			3	6			23	23		
10:00 ~ 10:30						6	1				2	2			11	11		
10:30 ~ 11:00						8						6			14	14		
11:00 ~ 11:30						6					4	2			12	12		
11:30 ~ 12:00						2					8				10	10		
12:00 ~ 12:30						5	5				7	6			23	23		
12:30 ~ 13:00						6	6	1			3	7			23	24		
13:00 ~ 13:30						5	5				8	10			28	28		
13:30 ~ 14:00						10	6			1	3	7			27	27		
14:00 ~ 14:30						9	4				4	3			20	20		
14:30 ~ 15:00						7	2				5	1			15	16		
15:00 ~ 15:30						10	1				7	3			21	21		
15:30 ~ 16:00						8					1	6			15	15		
16:00 ~ 16:30		1				4	3			1	4	2			15	15		
16:30 ~ 17:00						3					9	12			24	25		
17:00 ~ 17:30						2					22	2			26	27		
17:30 ~ 18:00		1				2	1				17	2			23	23		
Total						2	0	0	130	48	3	5	0	0	399	404		
Percentage						0.5%	0.0%	0.0%	32.2%	11.9%	0.7%	1.2%	0.0%	0.0%	30.0%	22.0%	0.2%	100.0%

Direction			3						4							
			Passenger			Cargo			Passenger			Cargo			Total	Total
Size of ship			<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	3+4	
7:00 ~ 7:30															0	
7:30 ~ 8:00															0	
8:00 ~ 8:30															0	
8:30 ~ 9:00															0	
9:00 ~ 9:30													1		1	
9:30 ~ 10:00															0	
10:00 ~ 10:30															0	
10:30 ~ 11:00															0	
11:00 ~ 11:30															0	
11:30 ~ 12:00															0	
12:00 ~ 12:30															0	
12:30 ~ 13:00													1		1	
13:00 ~ 13:30															0	
13:30 ~ 14:00															0	
14:00 ~ 14:30															0	
14:30 ~ 15:00													1		1	
15:00 ~ 15:30															0	
15:30 ~ 16:00															0	
16:00 ~ 16:30															0	
16:30 ~ 17:00												1			1	
17:00 ~ 17:30												1			1	
17:30 ~ 18:00															0	
Total						0	0	0	0	0	0	2	3	0	5	
Percentage						0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.7%	0.0%		

Table-B The Number of Ships (Meghna Bridge)

Direction Passenger/Cargo	1						2						Total 1+2	Total 1+2+3+4
	Passenger			Cargo			Passenger			Cargo				
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30	7			2	8		1			8	7		33	34
7:30 ~ 8:00	3			9	6		1			10	9		38	41
8:00 ~ 8:30	2			10	4		2			16	4		38	39
8:30 ~ 9:00				6	4		1			4	9		24	25
9:00 ~ 9:30				7	5		1			6	10		29	31
9:30 ~ 10:00	4			2	5		1			9	5		26	29
10:00 ~ 10:30				7	8					8	5		28	28
10:30 ~ 11:00				7	1					13	1		22	25
11:00 ~ 11:30	1			7	6					11	6		31	32
11:30 ~ 12:00				8	2					7	4		21	24
12:00 ~ 12:30				7	3					8	3		21	21
12:30 ~ 13:00				8	1					9	3		21	22
13:00 ~ 13:30				6	1					8	2		17	18
13:30 ~ 14:00				5	7		1			12	5		30	31
14:00 ~ 14:30				5	8					11	8		32	34
14:30 ~ 15:00	1			9	10					11	2		33	33
15:00 ~ 15:30				3	8		1			7	4		23	24
15:30 ~ 16:00				12	8		1			4	5		30	31
16:00 ~ 16:30	1			10	9					6	10		36	38
16:30 ~ 17:00	1			10	12					1	4		28	28
17:00 ~ 17:30				4	6					7	8		25	26
17:30 ~ 18:00				7	7					5	6		25	26
Total	20	0	0	151	129	0	10	0	0	181	120	0	611	640
Percentage	3.1%	0.0%	0.0%	23.6%	20.2%	0.0%	1.6%	0.0%	0.0%	28.3%	18.8%	0.0%		100.0%
Direction Passenger/Cargo	3						4						Total 3+4	
	Passenger			Cargo			Passenger			Cargo				
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30	1												1	
7:30 ~ 8:00	2										1		3	
8:00 ~ 8:30	1												1	
8:30 ~ 9:00													1	
9:00 ~ 9:30	1										1		2	
9:30 ~ 10:00	2										1		3	
10:00 ~ 10:30													0	
10:30 ~ 11:00	1			1	1								3	
11:00 ~ 11:30	1												1	
11:30 ~ 12:00	2										1		3	
12:00 ~ 12:30													0	
12:30 ~ 13:00	1												1	
13:00 ~ 13:30	1												1	
13:30 ~ 14:00	1												1	
14:00 ~ 14:30	2												2	
14:30 ~ 15:00													0	
15:00 ~ 15:30	1												1	
15:30 ~ 16:00	1												1	
16:00 ~ 16:30	2												2	
16:30 ~ 17:00													0	
17:00 ~ 17:30	1												1	
17:30 ~ 18:00	1												1	
Total	23	0	0	1	1	0	0	0	0	0	4	0	29	
Percentage	3.6%	0.0%	0.0%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%	0.0%		

Table-C The Number of Ships (Gumti Bridge : Dhaka Side Flow)

Direction		1						2						Total	Total
Passenger/Cargo	Size of ship	Passenger			Cargo			Passenger			Cargo				
		<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30					3									3	13
7:30 ~ 8:00					6	1					2			9	14
8:00 ~ 8:30					4	1					4	1		10	19
8:30 ~ 9:00					4									4	6
9:00 ~ 9:30					3	2					2			7	13
9:30 ~ 10:00					2	3					9	1		15	21
10:00 ~ 10:30					7						5	2		14	19
10:30 ~ 11:00					3	2					4	4		13	17
11:00 ~ 11:30					3	1					4			8	16
11:30 ~ 12:00					10	3					5	2		20	31
12:00 ~ 12:30														0	2
12:30 ~ 13:00					1						3			4	4
13:00 ~ 13:30					8						8	2		18	26
13:30 ~ 14:00														0	0
14:00 ~ 14:30					1						3			4	11
14:30 ~ 15:00						2					1	3		6	11
15:00 ~ 15:30						4					4	2		10	16
15:30 ~ 16:00					2							4		6	10
16:00 ~ 16:30											3			3	9
16:30 ~ 17:00					5	3					1			9	12
17:00 ~ 17:30					1	1					4			6	13
17:30 ~ 18:00					3	2								5	7
Total		0	0	0	66	25	0	0	0	0	62	21	0	174	290
Percentage		0.0%	0.0%	0.0%	22.8%	8.6%	0.0%	0.0%	0.0%	0.0%	21.4%	7.2%	0.0%		100.0%
Direction		9						10						Total	Total
Passenger/Cargo	Size of ship	Passenger			Cargo			Passenger			Cargo				
		<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30		1									9			10	
7:30 ~ 8:00								1			4			5	
8:00 ~ 8:30								4			5			9	
8:30 ~ 9:00								2						2	
9:00 ~ 9:30								2			2	2		6	
9:30 ~ 10:00								6						6	
10:00 ~ 10:30								4			1			5	
10:30 ~ 11:00								4						4	
11:00 ~ 11:30								5			3			8	
11:30 ~ 12:00								7			1	3		11	
12:00 ~ 12:30								2						2	
12:30 ~ 13:00														0	
13:00 ~ 13:30								5			3			8	
13:30 ~ 14:00														0	
14:00 ~ 14:30								3			4			7	
14:30 ~ 15:00								3			2			5	
15:00 ~ 15:30								4			2			6	
15:30 ~ 16:00								3			1			4	
16:00 ~ 16:30								3			3			6	
16:30 ~ 17:00								2			1			3	
17:00 ~ 17:30								1			6			7	
17:30 ~ 18:00								1				1		2	
Total		1	0	0	0	0	0	62	0	0	47	6	0	116	
Percentage		0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	21.4%	0.0%	0.0%	16.2%	2.1%	0.0%		

Table-D The Number of Ships (Gumti Bridge : Chittgong Side Flow①)

Direction Passenger/Cargo Size of ship	3						4						Total 3+4	Total 3+4+5+6	Total 3+4+5+6+7+8+11+12
	Passenger			Cargo			Passenger			Cargo					
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<			
7:00 ~ 7:30										1			1	21	22
7:30 ~ 8:00				3						2			5	19	25
8:00 ~ 8:30					1					1			2	17	21
8:30 ~ 9:00										1			1	21	23
9:00 ~ 9:30				4						1			5	20	24
9:30 ~ 10:00					2					4	2		8	29	35
10:00 ~ 10:30					1					4	2		7	27	35
10:30 ~ 11:00				1						2			3	22	22
11:00 ~ 11:30				1						1			1	20	23
11:30 ~ 12:00				1						1			2	20	23
12:00 ~ 12:30										2			2	17	18
12:30 ~ 13:00										1			1	18	20
13:00 ~ 13:30										1			1	28	32
13:30 ~ 14:00										1			1	26	27
14:00 ~ 14:30					1								1	28	31
14:30 ~ 15:00													0	30	32
15:00 ~ 15:30				1	2					1			4	25	26
15:30 ~ 16:00				1						2			3	26	27
16:00 ~ 16:30										2	2		4	24	29
16:30 ~ 17:00													0	26	27
17:00 ~ 17:30										2	2		4	16	16
17:30 ~ 18:00				1	1								2	24	24
Total	0	0	0	13	8	0	0	0	0	29	8	0	58	504	562
Percentage	0.0%	0.0%	0.0%	2.6%	1.6%	0.0%	0.0%	0.0%	0.0%	5.8%	1.6%	0.0%		100.0%	
Direction Passenger/Cargo Size of ship	5						6						Total 5+6		
	Passenger			Cargo			Passenger			Cargo					
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<			
7:00 ~ 7:30	1			9	1					7	2		20		
7:30 ~ 8:00				6						6			14		
8:00 ~ 8:30				4						8	2		15		
8:30 ~ 9:00	1			11						6			20		
9:00 ~ 9:30	1			5						8			15		
9:30 ~ 10:00	3			1	1					3			21		
10:00 ~ 10:30	1			5	1					5			20		
10:30 ~ 11:00	2			3						3	2		19		
11:00 ~ 11:30				7						3			19		
11:30 ~ 12:00	1			4						2			18		
12:00 ~ 12:30				6						2			15		
12:30 ~ 13:00	1			7						2			17		
13:00 ~ 13:30	1			16	2					2			27		
13:30 ~ 14:00	1			15	1					3			25		
14:00 ~ 14:30	6			12	1					3			27		
14:30 ~ 15:00	2			15	2					2			30		
15:00 ~ 15:30				8	2	2				2			21		
15:30 ~ 16:00				13	2					2	4		23		
16:00 ~ 16:30	2			5						1			20		
16:30 ~ 17:00				12						1	2		26		
17:00 ~ 17:30				7	2					3			12		
17:30 ~ 18:00				12						10			22		
Total	23	0	0	183	15	0	42	0	0	168	15	0	446		
Percentage	4.6%	0.0%	0.0%	36.3%	3.0%	0.0%	8.3%	0.0%	0.0%	33.3%	3.0%	0.0%			

Table-E The Number of Ships (Gumti Bridge : Chittong Side Flow②)

Direction Passenger/Cargo Size of ship	7						8						Total 7+8	Total 7+8+11+12
	Passenger			Cargo			Passenger			Cargo				
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30										1			1	1
7:30 ~ 8:00										2			2	6
8:00 ~ 8:30	1									1			2	4
8:30 ~ 9:00										1			1	2
9:00 ~ 9:30													0	4
9:30 ~ 10:00										1			1	6
10:00 ~ 10:30										1			1	8
10:30 ~ 11:00													0	0
11:00 ~ 11:30													0	3
11:30 ~ 12:00										1			1	3
12:00 ~ 12:30													0	1
12:30 ~ 13:00													0	2
13:00 ~ 13:30										2			2	4
13:30 ~ 14:00													0	1
14:00 ~ 14:30													0	3
14:30 ~ 15:00													0	2
15:00 ~ 15:30													0	1
15:30 ~ 16:00													0	1
16:00 ~ 16:30													0	5
16:30 ~ 17:00													0	1
17:00 ~ 17:30													0	0
17:30 ~ 18:00													0	0
Total	1	0	0	0	0	0	0	0	10	0	0	11	58	
Percentage	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.2%	0.0%	0.0%		100.0%	
Direction Passenger/Cargo Size of ship	11						12						Total 11+12	
	Passenger			Cargo			Passenger			Cargo				
	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<	<30m	30~55m	55m<		
7:00 ~ 7:30													0	
7:30 ~ 8:00													4	
8:00 ~ 8:30													2	
8:30 ~ 9:00													1	
9:00 ~ 9:30													4	
9:30 ~ 10:00													4	
10:00 ~ 10:30													5	
10:30 ~ 11:00													7	
11:00 ~ 11:30													0	
11:30 ~ 12:00													3	
12:00 ~ 12:30													2	
12:30 ~ 13:00													1	
13:00 ~ 13:30													2	
13:30 ~ 14:00													2	
14:00 ~ 14:30													1	
14:30 ~ 15:00													3	
15:00 ~ 15:30													1	
15:30 ~ 16:00													1	
16:00 ~ 16:30													5	
16:30 ~ 17:00													1	
17:00 ~ 17:30													1	
17:30 ~ 18:00													0	
Total	0	0	0	0	0	0	0	0	42	5	0	47		
Percentage	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	72.4%	8.6%	0.0%			