

**MAX = MOMENT ENVELOP @ SPAN 4
OF BOX GIRDER SUPERSTRUCTURE**

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

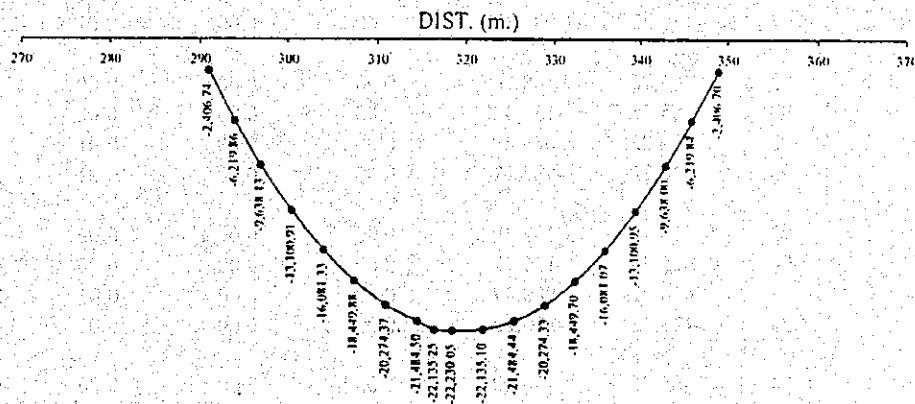
Job No. :	Designed by:	Checked by :	04-Dec-99
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**POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO COMBINED SIDEWALK & LANE LOAD)**

Impact Factor, $I = 15.244 / (L + 38.11) = 11.04\%$

NODE	SIDEWALK LL	EQUIVALENT LANE LOAD			TOTAL + I
		P	W	IMPACT	
93	-45.91	-1,828.90	-297.25	-234.68	-2,406.74
94	-479.74	-2,058.99	-3,110.54	-570.59	-6,219.86
95	-866.47	-2,285.45	-5,614.27	-871.94	-9,638.13
96	-1,257.53	-2,516.45	-8,149.65	-1,177.28	-13,100.91
97	-1,584.51	-2,786.15	-10,269.63	-1,441.04	-16,081.33
98	-1,846.85	-2,983.33	-11,969.29	-1,650.41	-18,449.88
99	-2,044.58	-3,166.85	-13,250.83	-1,812.11	-20,274.37
100	-2,178.03	-3,271.00	-14,116.33	-1,919.14	-21,484.50
101	-2,247.06	-3,349.11	-14,562.11	-1,976.97	-22,135.25
102	-2,257.44	-3,359.13	-14,628.12	-1,985.36	-22,230.05
103	-2,246.91	-3,349.11	-14,562.11	-1,976.97	-22,135.10
104	-2,177.97	-3,271.00	-14,116.33	-1,919.14	-21,484.44
105	-2,044.54	-3,166.85	-13,250.83	-1,812.11	-20,274.33
106	-1,846.67	-2,983.33	-11,969.29	-1,650.41	-18,449.70
107	-1,584.25	-2,786.15	-10,269.63	-1,441.04	-16,081.07
108	-1,257.57	-2,516.45	-8,149.65	-1,177.28	-13,100.95
109	-866.34	-2,285.45	-5,614.27	-871.94	-9,638.00
110	-479.72	-2,058.99	-3,110.54	-570.59	-6,219.84
111	-45.87	-1,828.90	-297.25	-234.68	-2,406.70

MAX POS. LL MOMENT ENVELOP @ SPAN 4



**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No.: Designed by: Checked by: Date: 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.

Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX. POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO SIDE WALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
86	1	86	65.77	262.99	0.00	0.00	0.00	-4,317.35
		87	-65.77	-252.47	0.00	0.00	0.00	-3,801.88
	2	86	426.21	1,705.07	0.00	0.00	-0.01	27,981.30
		87	-426.21	-1,636.89	0.00	0.00	0.01	-24,639.07
87	1	87	65.77	252.48	0.00	0.00	0.00	3,801.90
		88	-65.77	-231.44	0.00	0.00	0.00	-2,834.07
	2	87	426.21	1,636.46	0.00	0.00	-0.01	24,640.22
		88	-426.21	-1,500.10	0.00	0.00	0.01	-18,367.06
88	1	88	65.76	231.55	0.00	0.00	0.00	2,834.20
		89	-65.76	-215.77	0.00	0.00	0.00	-2,163.26
	2	88	426.22	1,499.86	0.00	0.00	-0.01	18,366.96
		89	-426.22	-1,397.59	0.00	0.00	0.01	-14,021.20
89	1	89	65.76	215.63	0.00	0.00	0.00	2,163.31
		90	-65.76	-199.85	0.00	0.00	0.00	-1,540.12
	2	89	426.22	1,397.05	0.00	0.00	-0.01	14,019.95
		90	-426.22	-1,294.78	0.00	0.00	0.01	-9,982.15
90	1	90	65.76	199.90	0.00	0.00	0.00	1,540.12
		91	-65.76	-184.12	0.00	0.00	0.00	-964.06
	2	90	426.22	1,296.18	0.00	0.00	-0.01	9,982.57
		91	-426.22	-1,193.91	0.00	0.00	0.01	-6,246.69
91	1	91	65.76	184.03	0.00	0.00	0.00	964.01
		92	-65.76	-168.25	0.00	0.00	0.00	-435.58
	2	91	426.22	1,193.64	0.00	0.00	-0.01	6,249.58
		92	-426.22	-1,091.37	0.00	0.00	0.01	-2,821.14
92	1	92	65.76	168.26	0.00	0.00	0.00	435.38
		93	-65.76	-152.48	0.00	0.00	0.00	45.77
	2	92	426.22	1,089.49	0.00	0.00	-0.01	2,820.48
		93	-426.22	-987.22	0.00	0.00	0.01	294.75
93	1	93	65.76	152.49	0.00	0.00	0.00	-45.91
		94	-65.76	-136.71	0.00	0.00	0.00	479.62
	2	93	426.22	988.47	0.00	0.00	-0.01	-297.25
		94	-426.22	-886.20	0.00	0.00	0.01	3,109.33
94	1	94	-65.76	136.80	0.00	0.00	0.00	-479.74
		95	-65.76	-121.02	0.00	0.00	0.00	866.42
	2	94	426.22	885.45	0.00	0.00	0.00	-3,110.54
		95	-426.22	-783.18	0.00	0.00	0.00	5,613.86

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX. POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO SIDE WALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
95	1	95	65.76	120.92	0.00	0.00	0.00	-866.47
		96	-65.76	-102.51	0.00	0.00	0.00	1,257.52
	2	95	426.22	784.39	0.00	0.00	0.00	-5,614.27
		96	-426.22	-665.08	0.00	0.00	0.00	8,150.99
96	1	96	65.76	102.59	0.00	0.00	0.00	-1,257.53
		97	-65.76	-84.18	0.00	0.00	0.00	1,584.40
	2	96	426.22	665.17	0.00	0.00	0.00	-8,149.65
		97	-426.22	-545.85	0.00	0.00	0.00	10,268.92
97	1	97	65.76	84.03	0.00	0.00	0.00	-1,584.51
		98	-65.76	-65.62	0.00	0.00	0.00	1,846.49
	2	97	426.22	544.86	0.00	0.00	0.00	-10,269.63
		98	-426.22	-425.54	0.00	0.00	0.00	11,966.70
98	1	98	65.76	65.66	0.00	0.00	0.00	-1,846.85
		99	-65.76	-47.25	0.00	0.00	0.00	2,044.44
	2	98	426.22	425.72	0.00	0.00	0.00	-11,969.29
		99	-426.22	-306.41	0.00	0.00	0.00	13,250.21
99	1	99	65.76	47.37	0.00	0.00	0.00	-2,044.58
		100	-65.76	-28.96	0.00	0.00	0.00	2,178.13
	2	99	426.22	306.75	0.00	0.00	0.00	-13,250.83
		100	-426.22	-187.44	0.00	0.00	0.00	14,116.17
100	1	100	65.76	28.96	0.00	0.00	0.00	-2,178.03
		101	-65.76	-10.55	0.00	0.00	0.00	2,247.12
	2	100	426.22	187.40	0.00	0.00	0.00	-14,116.33
		101	-426.22	-68.08	0.00	0.00	0.00	14,563.00
101	1	101	65.76	10.51	0.00	0.00	0.00	-2,247.06
		102	-65.76	0.01	0.00	0.00	0.00	2,257.80
	2	101	426.22	71.32	0.00	0.00	0.00	-14,562.11
		102	-426.22	-3.14	0.00	0.00	0.00	14,634.18
102	1	102	65.76	0.12	0.00	0.00	0.00	-2,257.44
		103	-65.76	10.40	0.00	0.00	0.00	2,247.34
	2	102	426.22	3.41	0.00	0.00	0.00	-14,628.12
		103	-426.22	64.77	0.00	0.00	0.00	14,567.25
103	1	103	65.76	-10.39	0.00	0.00	0.00	-2,246.91
		104	-65.76	28.80	0.00	0.00	0.00	2,178.28
	2	103	426.22	-68.05	0.00	0.00	0.00	-14,563.38
		104	-426.22	187.37	0.00	0.00	0.00	14,116.28

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. _____ Designed by _____ Checked by _____ Date: 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX. POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO SIDE WALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
104	1	104	65.76	-28.86	0.00	0.00	0.00	-2,177.97
		105	-65.76	47.27	0.00	0.00	0.00	2,044.67
	2	104	426.22	-186.46	0.00	0.00	0.00	-14,114.43
		105	-426.22	305.78	0.00	0.00	0.00	13,252.69
105	1	105	65.76	-47.31	0.00	0.00	0.00	-2,044.54
		106	-65.76	65.72	0.00	0.00	0.00	1,846.75
	2	105	426.22	-306.59	0.00	0.00	0.00	-13,250.30
		106	-426.22	425.90	0.00	0.00	0.00	11,969.05
106	1	106	65.76	-65.74	0.00	0.00	0.00	-1,846.67
		107	-65.76	84.15	0.00	0.00	0.00	1,584.37
	2	106	426.22	-425.88	0.00	0.00	0.00	-11,967.90
		107	-426.22	545.19	0.00	0.00	0.00	10,268.45
107	1	107	65.76	-84.11	0.00	0.00	0.00	-1,584.25
		108	-65.76	102.52	0.00	0.00	0.00	1,257.64
	2	107	426.22	-545.14	0.00	0.00	0.00	-10,267.86
		108	-426.22	664.46	0.00	0.00	0.00	8,150.60
108	1	108	65.76	-102.56	0.00	0.00	0.00	-1,257.57
		109	-65.76	120.97	0.00	0.00	0.00	866.39
	2	108	426.22	-664.83	0.00	0.00	0.00	-8,150.24
		109	-426.22	784.14	0.00	0.00	0.00	5,614.86
109	1	109	65.76	-120.98	0.00	0.00	0.00	-866.34
		110	-65.76	136.76	0.00	0.00	0.00	479.75
	2	109	426.22	-784.74	0.00	0.00	0.00	-5,613.39
		110	-426.22	887.01	0.00	0.00	0.00	3,108.67
110	1	110	65.76	-136.77	0.00	0.00	0.00	-479.72
		111	-65.76	152.55	0.00	0.00	0.00	45.82
	2	110	426.22	-885.89	0.00	0.00	0.00	-3,108.80
		111	-426.22	988.16	0.00	0.00	0.00	297.02
111	1	111	65.76	-152.57	0.00	0.00	0.00	-45.87
		112	-65.76	168.35	0.00	0.00	0.00	-435.62
	2	111	426.22	-987.40	0.00	0.00	0.00	-294.79
		112	-426.22	1,089.67	0.00	0.00	0.00	-2,820.17
112	1	112	65.76	-168.19	0.00	0.00	0.00	435.64
		113	-65.76	183.97	0.00	0.00	0.00	-963.95
	2	112	426.22	-1,090.76	0.00	0.00	0.00	2,822.76
		113	-426.22	1,193.03	0.00	0.00	0.00	-6,248.28

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. _____ Designed by _____ Checked by _____ Date: 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX. POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO SIDE WALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
113	1	113	65.76	-184.12	0.00	0.00	0.00	964.11
		114	-65.76	199.90	0.00	0.00	0.00	-1,540.06
	2	113	426.22	-1,192.72	0.00	0.00	0.00	6,249.21
		114	-426.22	1,294.99	0.00	0.00	0.00	-9,980.39
114	1	114	65.76	-199.85	0.00	0.00	0.00	1,540.11
		115	-65.76	215.63	0.00	0.00	0.00	-2,163.31
	2	114	426.22	-1,294.39	0.00	0.00	0.00	9,982.70
		115	-426.22	1,396.65	0.00	0.00	0.00	-14,019.57
115	1	115	65.76	-215.62	0.00	0.00	0.00	2,163.54
		116	-65.76	231.40	0.00	0.00	0.00	-2,833.91
	2	115	426.22	-1,397.43	0.00	0.00	0.00	14,021.23
		116	-426.22	1,499.70	0.00	0.00	0.00	-18,367.14
116	1	116	65.76	-231.42	0.00	0.00	0.00	2,834.07
		117	-65.76	252.46	0.00	0.00	0.00	-3,801.84
	2	116	426.22	-1,499.82	0.00	0.00	0.00	18,367.77
		117	-426.22	1,636.18	0.00	0.00	0.00	-24,639.50
117	1	117	65.77	-252.53	0.00	0.00	0.00	3,801.84
		118	-65.77	263.05	0.00	0.00	0.00	-4,317.41
	2	117	426.23	-1,636.17	0.00	0.00	0.00	24,640.28
		118	-426.23	1,704.35	0.00	0.00	0.00	-27,980.59

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RUPSA RIVER IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/2/99

**MAX POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO CONC. LANE LOAD, P = 292.40 KN)**

MEMB	FY/FZ	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
86 MAX	285.82	0.00	1	4.431.41	0.00	34			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	11.48	2.00	90	176.56	2.00	1		
	0.00	2.00	41	0.00	0.00	21	6.14 C	2.00	1
87 MAX	285.83	0.00	1	4.035.79	0.00	35			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	-9.80	4.00	3	-573.93	4.00	3		
	0.00	4.00	41	0.00	0.00	21	6.14 C	4.00	1
88 MAX	280.96	0.00	4	3.275.74	0.00	38			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	-14.98	3.00	6	-837.68	3.00	6		
	0.00	3.00	41	0.00	0.00	21	6.14 C	3.00	1
89 MAX	275.62	0.00	7	2.736.66	0.00	40			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	-20.58	3.00	9	-1.095.59	3.00	9		
	0.00	3.00	41	0.00	0.00	21	6.14 C	3.00	1
90 MAX	269.85	0.00	10	2.229.64	0.00	43			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	-26.67	3.00	12	-1,346.86	3.00	12		
	0.00	3.00	41	0.00	0.00	22	6.14 C	3.00	1
91 MAX	263.57	0.00	13	1.759.50	0.00	46			
	0.00	0.00	54	0.00	0.00	41	46.94 C	0.00	47
	MIN	-33.30	3.00	15	-1.591.04	3.00	15		
	0.00	3.00	41	0.00	0.00	22	6.14 C	3.00	1
92 MAX	256.77	0.00	16	1.332.39	0.00	50			
	0.00	0.00	54	0.00	3.00	62	46.94 C	0.00	47
	MIN	-40.57	3.00	18	-1.828.19	3.00	18		
	0.00	3.00	41	0.00	0.00	22	6.14 C	3.00	1
93 MAX	249.36	0.00	19	955.10	0.00	54			
	0.00	0.00	54	0.00	3.00	62	46.94 C	0.00	47
	MIN	-48.55	3.00	21	-2.058.99	3.00	21		
	0.00	3.00	41	0.00	0.00	22	6.14 C	3.00	1
94 MAX	240.93	0.00	22	634.53	0.00	59			
	0.00	0.00	14	0.00	3.00	42	46.94 C	0.00	47
	MIN	-57.34	3.00	24	-2,285.45	3.00	24		
	0.00	3.00	25	0.00	3.00	31	6.14 C	3.00	1
95 MAX	232.05	0.00	25	375.23	0.00	64			
	0.00	0.00	28	0.00	3.50	56	46.94 C	0.00	47

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RUPSA RIVER IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/2/99

**MAX POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO CONC. LANE LOAD, P = 292.40 KN)**

MEMB	FY/FZ	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-66.82	3.50	27	-2.494.10	3.21	27			
	0.00	3.50	15	0.00	3.50	40	6.14 C	3.50	1
96 MAX	222.10	0.00	28	151.03	0.00	72			
	0.00	0.00	28	0.00	3.50	32	46.94 C	0.00	47
MIN	-80.98	3.50	31	-2.786.15	3.50	31			
	0.00	3.50	46	0.00	3.50	46	6.14 C	3.50	1
97 MAX	207.66	0.00	32	17.24	0.00	85			
	0.00	0.00	28	0.00	3.50	32	46.94 C	0.00	47
MIN	-92.36	3.50	34	-2.952.92	2.92	34			
	0.00	3.50	46	0.00	3.50	58	6.14 C	3.50	1
98 MAX	196.15	0.00	35	-25.18	0.00	90			
	0.00	0.00	32	0.00	3.50	32	46.94 C	0.00	47
MIN	-108.34	3.50	38	-3.166.85	3.50	38			
	0.00	3.50	46	0.00	3.50	58	6.14 C	3.50	1
99 MAX	179.95	0.00	39	-65.38	0.00	90			
	0.00	0.00	32	0.00	3.50	32	46.94 C	0.00	47
MIN	-120.75	3.50	41	-3.258.06	2.92	41			
	0.00	3.50	46	0.00	3.50	58	6.14 C	3.50	1
100 MAX	167.41	0.00	42	-105.55	0.00	90			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-137.77	3.50	45	-3.349.11	3.50	45			
	0.00	3.50	46	0.00	3.50	58	6.14 C	3.50	1
101 MAX	150.72	0.00	46	-93.07	2.00	1			
	0.00	0.00	65	0.00	2.00	65	46.94 C	0.00	47
MIN	-146.13	2.00	47	-3.359.13	2.00	47			
	0.00	2.00	37	0.00	2.00	37	6.14 C	2.00	1
102 MAX	142.36	0.00	48	-79.97	2.00	1			
	0.00	0.00	65	0.00	2.00	65	46.94 C	0.00	47
MIN	-154.12	2.00	49	-3.358.33	0.00	47			
	0.00	2.00	37	0.00	2.00	37	6.14 C	2.00	1
103 MAX	133.47	0.00	50	-56.94	3.50	1			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-167.40	3.50	52	-3.349.08	0.00	49			
	0.00	3.50	37	0.00	3.50	37	6.14 C	3.50	1
104 MAX	120.89	0.00	53	-33.97	3.50	1			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-184.03	3.50	56	-3.257.91	0.58	53			
	0.00	3.50	46	0.00	3.50	37	6.14 C	3.50	1

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RUPSA RIVER IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/2/99

**MAX POS. LL MOMENT ENVELOPE @ SPAN 4
(DUE TO CONC. LANE LOAD, P = 292.40 KN)**

MEMB	FY/FZ	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
105 MAX	104.27	0.00	57	-10.98	3.50	1			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-196.08	3.21	59	-3.166.88	0.00	56			
	0.00	3.50	46	0.00	3.50	37	6.14 C	3.50	1
106 MAX	92.27	0.00	60	17.20	3.50	9			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-211.30	3.50	63	-2.952.99	0.58	60			
	0.00	3.50	46	0.00	3.50	37	6.14 C	3.50	1
107 MAX	77.38	0.00	64	151.05	3.50	22			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-222.09	3.50	66	-2.786.01	0.00	63			
	0.00	3.50	37	0.00	3.50	37	6.14 C	3.50	1
108 MAX	66.91	0.00	67	375.21	3.50	30			
	0.00	0.00	65	0.00	3.50	65	46.94 C	0.00	47
MIN	-235.11	3.50	70	-2.493.96	0.29	67			
	0.00	3.50	37	0.00	3.50	37	6.14 C	3.50	1
109 MAX	54.34	0.00	71	634.41	3.00	35			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-243.80	3.00	73	-2.285.51	0.00	70			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
110 MAX	45.90	0.00	74	955.15	3.00	40			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-251.75	3.00	76	-2.058.89	0.00	73			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
111 MAX	38.19	0.00	77	1.332.05	3.00	44			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-259.01	3.00	79	-1.828.07	0.00	76			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
112 MAX	31.08	0.00	80	1.759.39	3.00	48			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-265.64	3.00	82	-1.590.99	0.00	79			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
113 MAX	24.65	0.00	83	2.229.52	3.00	51			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-271.79	3.00	85	-1.346.76	0.00	82			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
114 MAX	18.68	0.00	86	2.736.27	3.00	54			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RUPSA RIVER IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date : 12/2/99
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**MAX POS. LL MOMENT ENVELOP @ SPAN 4
(DUE TO CONC. LANE LOAD, P = 292.40 KN)**

MEMB	FY/FZ	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-277.40	3.00	88	-1.095.52	0.00	85			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
115 MAX	13.24	0.00	89	3.275.60	3.00	56			
	0.00	0.00	65	0.00	3.00	65	46.94 C	0.00	47
MIN	-280.93	3.00	90	-837.67	0.00	88			
	0.00	3.00	37	0.00	3.00	37	6.14 C	3.00	1
116 MAX	-6.57	0.00	1	4.035.77	4.00	59			
	0.00	0.00	65	0.00	4.00	65	46.94 C	0.00	47
MIN	-280.92	4.00	90	-381.50	0.00	90			
	0.00	4.00	37	0.00	4.00	37	6.14 C	4.00	1
117 MAX	-6.57	0.00	1	4.431.29	2.00	60			
	0.00	0.00	65	0.00	2.00	65	46.94 C	0.00	47
MIN	-280.88	2.00	90	222.14	0.00	1			
	0.00	2.00	37	0.00	2.00	37	6.14 C	2.00	1

MAX - MOMENT ENVELOP @ SPAN 1 & 2
OF BOX GIRDER SUPERSTRUCTURE

THE STUDY ON THE CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA, PHASE-2

Job No. : _____ Designed by : _____ Checked by : _____ 1274799

P1- Concentrated Lane Load P= 292.4 Kn loaded @ span 1

P2- Concentrated Lane Load P= 292.4 Kn loaded @ span 2

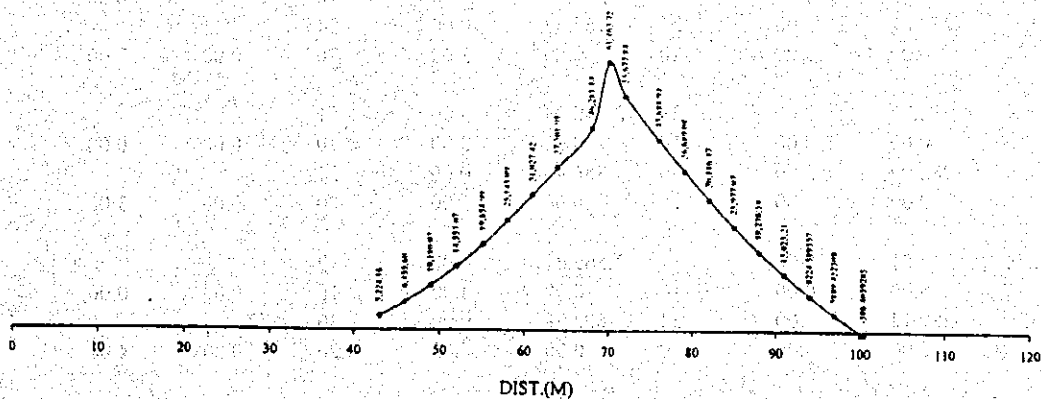
MAX. NEG. LL MOMENT ENVELOP @ SPAN 1 & 2 (DUE TO COMBINED SIDEWALK & LANE LOAD)

Impact factor, $I = 15.244 / (L_{ave} + 38.11) = 12.38\%$

$L_{ave} = 1/2(L_1 + L_2)$

NODE	SIDEWALK SW	EQUIVALENT LANE LOAD				DIST.	TOTAL LL + I
		W	P ₁	P ₂	IMPACT		
13	227.60	1,475.03	-78.84	1,270.21	330.16	43.00	3224.16
14	606.42	3,930.24	-84.34	1,358.81	644.47	46.00	6455.60
15	1,032.58	6,692.13	0.00	1,447.44	1,007.88	49.00	10180.03
16	1,506.08	9,760.89	316.10	1,536.03	1,437.97	52.00	14557.07
17	2,026.92	13,136.41	924.71	1,624.67	1,942.28	55.00	19654.99
18	2,595.10	16,818.77	1,533.36	1,713.28	2,484.58	58.00	25145.09
19	3,210.61	20,807.92	2,142.10	1,801.90	3,064.89	61.00	31027.42
20	3,873.48	25,103.95	2,750.73	1,890.57	3,683.18	64.00	37301.91
21	4,830.94	31,309.25	3,565.25	2,008.67	4,567.03	68.00	46281.14
22	6,264.68	40,601.27	3,982.74	4,533.16	6,081.90	70.00	61463.75
23	5,689.50	36,873.43	1,693.24	4,134.26	5,287.41	72.00	53677.84
24	4,602.29	29,827.29	1,586.02	3,366.73	4,306.61	76.00	43688.94
25	3,842.13	24,900.46	1,505.52	2,821.86	3,619.11	79.00	36689.08
26	3,129.26	20,280.71	1,425.10	2,307.92	2,973.48	82.00	30116.47
27	2,463.78	15,967.85	1,344.65	1,830.43	2,370.36	85.00	23977.07
28	1,845.61	11,961.58	1,264.23	1,394.74	1,810.38	88.00	18276.54
29	1,274.73	8,261.84	1,183.74	1,008.44	1,294.46	91.00	13023.21
30	750.83	4,868.82	1,103.33	678.08	823.46	94.00	8224.52
31	275.27	1,783.91	1,022.90	409.14	398.21	97.00	3889.43
32	-220.50	-1,428.84	929.07	174.18	-40.32	100.50	-586.41

MAX. NEG. MOMENT ENVELOP @ SPAN 1 & 2



**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 1)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
12 MAX	69.04	0.00	6	-72.42	0.00	35			
	0.00	0.00	10	0.00	3.50	10	0.00	2.00	16
	MIN -234.03	3.50	9	-2,747.89	0.29	6			
	0.00	3.50	20	0.00	3.50	20	0.00	3.50	3
13 MAX	55.14	0.00	10	-78.84	0.00	35			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	10
	MIN -243.47	3.00	12	-2,510.85	0.00	9			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	15
14 MAX	46.04	0.00	13	-84.34	0.00	35			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	9
	MIN -251.81	3.00	15	-2,251.61	0.00	12			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	21
15 MAX	37.94	0.00	16	316.10	3.00	1			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	22
	MIN -259.35	3.00	18	-1,987.74	0.00	15			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	21
16 MAX	30.71	0.00	19	924.71	3.00	1			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	1
	MIN -266.10	3.00	21	-1,718.85	0.00	18			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	11
17 MAX	24.19	0.00	22	1,533.36	3.00	1			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	5
	MIN -272.25	3.00	24	-1,445.33	0.00	21			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	1
18 MAX	18.21	0.00	25	2,142.10	3.00	1			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	4
	MIN -277.87	3.00	27	-1,167.57	0.00	24			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	21
19 MAX	12.77	0.00	28	2,750.73	3.00	1			
	0.00	0.00	10	0.00	3.00	10	0.00	0.00	23
	MIN -282.99	3.00	30	-886.46	0.00	27			
	0.00	3.00	20	0.00	3.00	20	0.00	3.00	19
20 MAX	7.81	0.00	31	3,565.25	4.00	2			
	0.00	0.00	10	0.00	4.00	10	0.00	0.00	7
	MIN -289.14	4.00	34	-602.78	0.00	30			
	0.00	4.00	20	0.00	4.00	20	0.00	4.00	3
21 MAX	1.84	0.00	35	3,982.74	2.00	3			
	0.00	0.00	10	0.00	2.00	10	0.00	0.00	6

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 1)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-290.56	2.00	35	-221.77	0.00	34			
	0.00	2.00	20	0.00	2.00	20	0.00	2.00	8
22 MAX	26.82	0.00	3	1,746.88	0.00	3			
	0.00	0.00	7	0.00	0.00	5	2.10	0.00	35
MIN	0.77	2.00	35	54.48	2.00	35			
	0.00	2.00	5	0.00	0.00	7	4.41	2.00	3
23 MAX	26.82	0.00	3	1,693.24	0.00	3			
	0.00	0.00	7	0.00	0.00	5	2.10	0.00	35
MIN	0.77	4.00	35	51.41	4.00	35			
	0.00	4.00	5	0.00	0.00	7	4.41	4.00	3
24 MAX	26.84	0.00	3	1,586.02	0.00	3			
	0.00	0.00	7	0.00	0.00	5	2.10	0.00	35
MIN	0.77	3.00	35	49.10	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
25 MAX	26.83	0.00	2	1,505.52	0.00	3			
	0.00	0.00	7	0.00	0.00	5	2.10	0.00	35
MIN	0.77	3.00	35	46.81	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
26 MAX	26.83	0.00	3	1,425.10	0.00	3			
	0.00	0.00	7	0.00	3.00	4	2.10	0.00	35
MIN	0.77	3.00	35	44.50	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
27 MAX	26.82	0.00	2	1,344.65	0.00	3			
	0.00	0.00	7	0.00	3.00	4	2.10	0.00	35
MIN	0.77	3.00	35	42.20	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
28 MAX	26.81	0.00	3	1,264.23	0.00	3			
	0.00	0.00	7	0.00	3.00	4	2.10	0.00	35
MIN	0.77	3.00	35	39.90	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
29 MAX	26.79	0.00	2	1,183.74	0.00	3			
	0.00	0.00	7	0.00	3.00	17	2.10	0.00	35
MIN	0.77	3.00	35	37.59	3.00	35			
	0.00	3.00	5	0.00	0.00	10	4.41	3.00	3
30 MAX	26.80	0.00	3	1,103.33	0.00	3			
	0.00	0.00	14	0.00	3.00	14	2.10	0.00	35
MIN	0.77	3.00	35	35.29	3.00	35			
	0.00	3.00	25	0.00	3.00	10	4.42	3.00	3

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 1)**

MEMB.	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
31 MAX	26.82	0.00	3	1.022.90	0.00	3			
	0.00	0.00	7	0.00	3.50	7	2.10	0.00	35
	MIN	0.77	3.50	35	32.60	3.50	35		
	0.00	3.50	19	0.00	3.50	10	4.41	3.50	3
32 MAX	26.83	0.00	3	929.07	0.00	3			
	0.00	0.00	7	0.00	3.50	8	2.10	0.00	35
	MIN	0.77	3.50	35	29.91	3.50	35		
	0.00	3.50	6	0.00	3.50	16	4.41	3.50	3
33 MAX	26.83	0.00	3	835.23	0.00	3			
	0.00	0.00	7	0.00	3.50	8	2.10	3.50	35
	MIN	0.77	3.50	35	27.23	3.50	35		
	0.00	3.50	31	0.00	0.00	20	4.41	3.50	3

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
12 MAX	-2.45	0.00	88	1.270.21	3.50	32			
	0.00	0.00	25	0.00	3.50	25	.00 C	0.00	18
MIN	-29.55	3.50	32	96.96	0.00	88			
	0.00	3.50	32	0.00	3.50	32	.00 T	3.50	14
13 MAX	-2.46	0.00	88	1.358.81	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	19
MIN	-29.54	3.00	31	105.55	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	23
14 MAX	-2.45	0.00	88	1.447.44	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	16
MIN	-29.55	3.00	31	112.91	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	17
15 MAX	-2.46	0.00	88	1.536.03	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	23
MIN	-29.54	3.00	32	120.28	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	26
16 MAX	-2.45	0.00	88	1.624.67	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	24
MIN	-29.55	3.00	31	127.64	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	31
17 MAX	-2.45	0.00	88	1.713.28	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	20
MIN	-29.58	3.00	32	135.01	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	31
18 MAX	-2.46	0.00	88	1.801.90	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	14
MIN	-29.52	3.00	31	142.37	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	27
19 MAX	-2.46	0.00	88	1.890.57	3.00	32			
	0.00	0.00	25	0.00	3.00	25	.00 C	0.00	14
MIN	-29.57	3.00	32	149.73	0.00	88			
	0.00	3.00	32	0.00	3.00	32	.00 T	3.00	26
20 MAX	-2.46	0.00	88	2.008.67	4.00	32			
	0.00	0.00	25	0.00	4.00	25	.00 C	0.00	13
MIN	-29.54	4.00	31	157.10	0.00	88			
	0.00	4.00	32	0.00	4.00	32	.00 T	4.00	29
21 MAX	-2.46	0.00	88	2.067.76	2.00	32			
	0.00	0.00	25	0.00	2.00	25	.00 C	0.00	15

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No.: Designed by: Checked by: Date: 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-29.54	2.00	31	166.92	0.00	88			
	0.00	2.00	32	0.00	2.00	32	0.00 T	2.00	24
22 MAX	283.03	0.00	1	4.533.16	0.00	32			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	11.52	2.00	88	388.34	2.00	88			
	0.00	2.00	37	0.00	0.00	16	7.01 C	2.00	88
23 MAX	283.03	0.00	1	4.134.26	0.00	33			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-9.37	4.00	1	-547.58	4.00	1			
	0.00	4.00	37	0.00	0.00	16	7.01 C	4.00	88
24 MAX	281.40	0.00	2	3.366.73	0.00	36			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-14.36	3.00	4	-801.83	3.00	4			
	0.00	3.00	37	0.00	3.00	25	7.01 C	3.00	88
25 MAX	276.27	0.00	5	2.821.86	0.00	38			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-19.82	3.00	7	-1,051.88	3.00	7			
	0.00	3.00	37	0.00	3.00	25	7.01 C	3.00	88
26 MAX	270.62	0.00	8	2,307.92	0.00	41			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-25.77	3.00	10	-1,296.91	3.00	10			
	0.00	3.00	37	0.00	3.00	25	7.01 C	3.00	88
27 MAX	264.53	0.00	11	1,830.43	0.00	44			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-32.30	3.00	13	-1,536.63	3.00	13			
	0.00	3.00	37	0.00	3.00	25	7.01 C	3.00	88
28 MAX	257.78	0.00	14	1,394.74	0.00	47			
	0.00	0.00	17	0.00	0.00	32	52.43 C	0.00	35
MIN	-39.39	3.00	16	-1,770.85	3.00	16			
	0.00	3.00	37	0.00	3.00	25	7.01 C	3.00	88
29 MAX	250.37	0.00	17	1,008.44	0.00	51			
	0.00	0.00	17	0.00	0.00	30	52.43 C	0.00	35
MIN	-47.31	3.00	19	-2,000.27	3.00	19			
	0.00	3.00	56	0.00	3.00	25	7.01 C	3.00	88
30 MAX	242.41	0.00	20	678.08	0.00	56			
	0.00	0.00	17	0.00	3.00	17	52.44 C	0.00	35
MIN	-55.87	3.00	22	-2,227.19	3.00	22			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
31 MAX	233.32	0.00	23	409.14	0.00	62			
	0.00	0.00	55	0.00	3.50	55	52.43 C	0.00	35
	MIN -65.56	3.50	25	-2.437.30	3.21	25			
	0.00	3.50	5	0.00	3.50	43	7.01 C	3.50	88
32 MAX	223.47	0.00	26	174.18	0.00	69			
	0.00	0.00	55	0.00	3.50	55	52.43 C	0.00	35
	MIN -79.56	3.50	29	-2.733.25	3.50	29			
	0.00	3.50	43	0.00	3.50	43	7.01 C	3.50	88
33 MAX	209.21	0.00	30	26.83	0.00	81			
	0.00	0.00	55	0.00	3.50	55	52.43 C	0.00	35
	MIN -90.99	3.50	32	-2.903.79	2.92	32			
	0.00	3.50	43	0.00	3.50	43	7.01 C	3.50	88

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date 04-Dec-99
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Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
12	1	12	0.00	-99.98	0.00	0.00	0.00	-154.53
		13	0.00	118.39	0.00	0.00	0.00	-227.60
	2	12	0.00	-647.92	0.00	0.00	0.00	-1,001.46
		13	0.00	767.24	0.00	0.00	0.00	-1,475.04
13	1	13	0.00	-118.38	0.00	0.00	0.00	227.60
		14	0.00	134.16	0.00	0.00	0.00	-606.42
	2	13	0.00	-767.27	0.00	0.00	0.00	1,475.03
		14	0.00	869.54	0.00	0.00	0.00	-3,930.18
14	1	14	0.00	-134.16	0.00	0.00	0.00	606.42
		15	0.00	149.94	0.00	0.00	0.00	-1,032.58
	2	14	0.00	-869.51	0.00	0.00	0.00	3,930.24
		15	0.00	971.78	0.00	0.00	0.00	-6,692.11
15	1	15	0.00	-149.94	0.00	0.00	0.00	1,032.58
		16	0.00	165.72	0.00	0.00	0.00	-1,506.08
	2	15	0.00	-971.80	0.00	0.00	0.00	6,692.13
		16	0.00	1,074.07	0.00	0.00	0.00	-9,760.83
16	1	16	0.00	-165.73	0.00	0.00	0.00	1,506.08
		17	0.00	181.51	0.00	0.00	0.00	-2,026.92
	2	16	0.00	-1,074.04	0.00	0.00	0.00	9,760.89
		17	0.00	1,176.31	0.00	0.00	0.00	-13,136.39
17	1	17	0.00	-181.50	0.00	0.00	0.00	2,026.92
		18	0.00	197.28	0.00	0.00	0.00	-2,595.09
	2	17	0.00	-1,176.30	0.00	0.00	0.00	13,136.41
		18	0.00	1,278.57	0.00	0.00	0.00	-16,818.75
18	1	18	0.00	-197.28	0.00	0.00	0.00	2,595.10
		19	0.00	213.06	0.00	0.00	0.00	-3,210.61
	2	18	0.00	-1,278.60	0.00	0.00	0.00	16,818.77
		19	0.00	1,380.87	0.00	0.00	0.00	-20,807.96
19	1	19	0.00	-213.06	0.00	0.00	0.00	3,210.61
		20	0.00	228.84	0.00	0.00	0.00	-3,873.48
	2	19	0.00	-1,380.88	0.00	0.00	0.00	20,807.92
		20	0.00	1,483.15	0.00	0.00	0.00	-25,103.94
20	1	20	0.00	-228.84	0.00	0.00	0.00	3,873.48
		21	0.00	249.88	0.00	0.00	0.00	-4,830.92
	2	20	0.00	-1,483.11	0.00	0.00	0.00	25,103.95
		21	0.00	1,619.47	0.00	0.00	0.00	-31,309.12

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date 04-Dec-99
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Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
21	1	21	0.00	-249.91	0.00	0.00	0.00	4.830.94
		22	0.00	260.43	0.00	0.00	0.00	-5.341.22
	2	21	0.00	-1.619.55	0.00	0.00	0.00	31.309.25
		22	0.00	1.687.73	0.00	0.00	0.00	-34.616.25
22	1	22	25.57	292.81	0.00	0.00	0.00	6.264.68
		23	-25.57	-282.29	0.00	0.00	0.00	-5.689.52
	2	22	165.69	1.897.81	0.00	0.00	0.00	40.601.27
		23	-165.69	-1.829.63	0.00	0.00	0.00	-36.873.44
23	1	23	25.57	282.32	0.00	0.00	0.00	5.689.50
		24	-25.57	-261.28	0.00	0.00	0.00	-4.602.29
	2	23	165.70	1.829.69	0.00	0.00	0.00	36.873.43
		24	-165.70	-1.693.33	0.00	0.00	0.00	-29.827.37
24	1	24	25.57	261.29	0.00	0.00	0.00	4.602.29
		25	-25.57	-245.51	0.00	0.00	0.00	-3.842.10
	2	24	165.69	1.693.44	0.00	0.00	0.00	29.827.29
		25	-165.69	-1.591.17	0.00	0.00	0.00	-24,900.51
25	1	25	25.57	245.52	0.00	0.00	0.00	3,842.13
		26	-25.57	-229.74	0.00	0.00	0.00	-3,129.24
	2	25	165.69	1,590.89	0.00	0.00	0.00	24,900.46
		26	-165.69	-1,488.62	0.00	0.00	0.00	-20,281.02
26	1	26	25.57	229.73	0.00	0.00	0.00	3,129.26
		27	-25.57	-213.95	0.00	0.00	0.00	-2,463.76
	2	26	165.69	1,488.71	0.00	0.00	0.00	20,280.71
		27	-165.69	-1,386.44	0.00	0.00	0.00	-15,967.74
27	1	27	25.57	213.97	0.00	0.00	0.00	2,463.78
		28	-25.57	-198.19	0.00	0.00	0.00	-1,845.55
	2	27	165.69	1,386.65	0.00	0.00	0.00	15,967.85
		28	-165.69	-1,284.38	0.00	0.00	0.00	-11,961.28
28	1	28	25.57	198.16	0.00	0.00	0.00	1,845.61
		29	-25.57	-182.38	0.00	0.00	0.00	-1,274.79
	2	28	165.69	1,284.38	0.00	0.00	0.00	11,961.58
		29	-165.69	-1,182.11	0.00	0.00	0.00	-8,261.63
29	1	29	25.57	182.37	0.00	0.00	0.00	1,274.73
		30	-25.57	-166.59	0.00	0.00	0.00	-751.33
	2	29	165.70	1,182.03	0.00	0.00	0.00	8,261.84
		30	-165.70	-1,079.76	0.00	0.00	0.00	-4,869.37

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
 Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 1 & 2
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
30	1	30	25.57	166.26	0.00	0.00	0.00	750.83
		31	-25.57	-150.48	0.00	0.00	0.00	-275.68
	2	30	165.71	1,079.57	0.00	0.00	0.00	4,868.82
		31	-165.71	-977.30	0.00	0.00	0.00	-1,783.80
31	1	31	25.57	150.87	0.00	0.00	0.00	275.27
		32	-25.57	-132.46	0.00	0.00	0.00	220.62
	2	31	165.69	977.69	0.00	0.00	0.00	1,783.91
		32	-165.69	-858.37	0.00	0.00	0.00	1,429.52
32	1	32	25.57	132.41	0.00	0.00	0.00	-220.50
		33	-25.57	-114.00	0.00	0.00	0.00	651.71
	2	32	165.69	858.23	0.00	0.00	0.00	-1,428.84
		33	-165.69	-738.91	0.00	0.00	0.00	4,224.17
33	1	33	25.57	114.05	0.00	0.00	0.00	-651.67
		34	-25.57	-95.64	0.00	0.00	0.00	1,018.60
	2	33	165.70	739.19	0.00	0.00	0.00	-4,223.29
		34	-165.70	-619.87	0.00	0.00	0.00	6,601.49

**MAX – MOMENT ENVELOP @ SPAN 2 & 3
OF BOX GIRDER SUPERSTRUCTURE**

УВАЖАЮЩИМ ОБРАЗОМ
ПОСЛАТЬ КОПИЮ ДОКЛАДА
НА ПРАВИТЕЛЬСТВО РАИОНА

THE STUDY ON THE CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA, PHASE-2

Job No. : _____ Designed by : _____ Checked by : _____ 12/4/99

P1 : Concentrated Lane Load P= 292.4 Kn loaded @ span 2

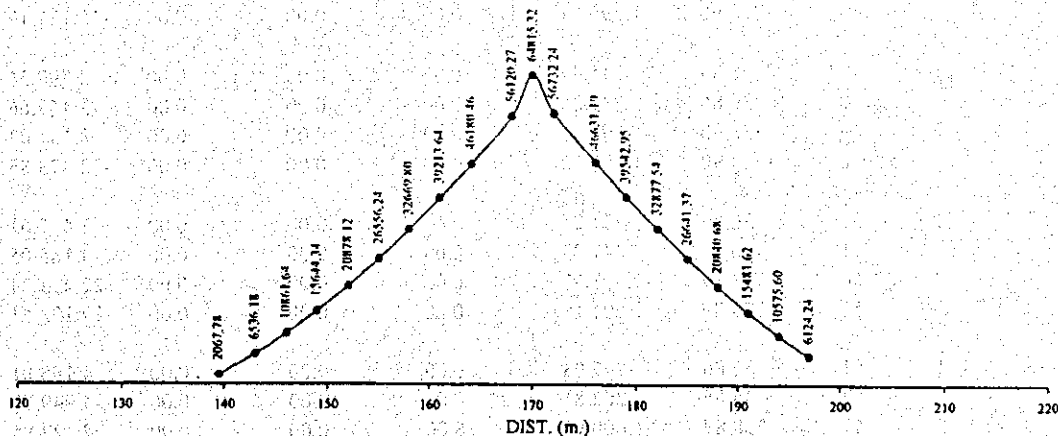
P2 : Concentrated Lane Load P= 292.4 Kn loaded @ span 3

MAX. NEG. LL MOMENT ENVELOP @ SPAN 2 & 3 (DUE TO COMBINED SIDEWALK & LANE LOAD)

Impact factor, $I = 15.244 / (L_{ave} + 38.11) = 11.04\%$ $L_{ave} = 1/2(L_1 + L_2)$

NODE	SIDEWALK SW	EQUIVALENT LANE LOAD				DIST.	TOTAL LL + I
		W	P ₁	P ₂	IMPACT		
44	89.85	582.49	151.05	1.047.78	196.61	139.50	2067.78
45	590.76	3.828.84	371.83	1.153.75	591.00	143.00	6536.18
46	1,071.40	6.944.28	628.11	1.244.66	973.19	146.00	10861.64
47	1,599.53	10.366.37	946.81	1.335.52	1,396.11	149.00	15644.34
48	2,174.86	14.095.41	1,322.22	1,426.45	1,859.18	152.00	20878.12
49	2,797.56	18.131.03	1,748.63	1,517.31	2,361.71	155.00	26556.24
50	3,467.61	22,473.24	2,217.95	1,608.19	2,902.81	158.00	32669.80
51	4,185.01	27,122.95	2,724.68	1,699.01	3,481.99	161.00	39213.64
52	4,949.74	32,079.23	3,263.10	1,789.89	4,098.50	164.00	46180.46
53	6,042.99	39,164.91	4,023.41	1,911.08	4,977.88	168.00	56120.27
54	6,704.55	43,452.13	4,418.77	4,463.43	5,776.44	170.00	64815.32
55	6,116.50	39,640.98	1,876.68	4,066.67	5,031.41	172.00	56732.24
56	5,003.41	32,427.34	1,758.53	3,303.94	4,137.97	176.00	46631.19
57	4,223.91	27,375.35	1,670.00	2,762.84	3,510.85	179.00	39542.95
58	3,491.74	22,629.67	1,581.52	2,253.54	2,921.07	182.00	32877.54
59	2,806.93	18,191.51	1,492.88	1,780.81	2,369.24	185.00	26641.37
60	2,169.41	14,060.24	1,404.35	1,350.68	1,856.00	188.00	20840.68
61	1,579.22	10,234.51	1,315.64	970.30	1,381.95	191.00	15481.62
62	1,036.59	6,717.61	1,227.22	645.96	948.22	194.00	10575.60
63	540.86	3,505.58	1,138.63	384.16	555.01	197.00	6124.24

MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3



**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date 04-Dec-99
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Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
43	1	43	36.86	-115.52	0.00	0.00	0.00	-346.69
		44	-36.86	133.93	0.00	0.00	0.00	-89.81
	2	43	238.89	-748.68	0.00	0.00	0.00	-2,246.98
		44	-238.89	868.00	0.00	0.00	0.00	-582.10
44	1	44	36.86	-133.92	0.00	0.00	0.00	89.85
		45	-36.86	152.33	0.00	0.00	0.00	-590.77
	2	44	238.90	-867.86	0.00	0.00	0.00	582.49
		45	-238.90	987.17	0.00	0.00	0.00	-3,828.67
45	1	45	36.86	-152.35	0.00	0.00	0.00	590.76
		46	-36.86	168.13	0.00	0.00	0.00	-1,071.50
	2	45	238.89	-987.44	0.00	0.00	0.00	3,828.84
		46	-238.89	1,089.71	0.00	0.00	0.00	-6,944.48
46	1	46	36.86	-168.18	0.00	0.00	0.00	1,071.40
		47	-36.86	183.96	0.00	0.00	0.00	-1,599.60
	2	46	238.92	-1,089.60	0.00	0.00	0.00	6,944.28
		47	-238.92	1,191.87	0.00	0.00	0.00	-10,366.49
47	1	47	36.86	-183.89	0.00	0.00	0.00	1,599.53
		48	-36.86	199.67	0.00	0.00	0.00	-2,174.87
	2	47	238.88	-1,191.88	0.00	0.00	0.00	10,366.37
		48	-238.88	1,294.15	0.00	0.00	0.00	-14,095.29
48	1	48	36.86	-199.70	0.00	0.00	0.00	2,174.86
		49	-36.86	215.48	0.00	0.00	0.00	-2,797.62
	2	48	238.90	-1,294.07	0.00	0.00	0.00	14,095.41
		49	-238.90	1,396.34	0.00	0.00	0.00	-18,131.17
49	1	49	36.86	-215.47	0.00	0.00	0.00	2,797.56
		50	-36.86	231.25	0.00	0.00	0.00	-3,467.66
	2	49	238.90	-1,396.45	0.00	0.00	0.00	18,131.03
		50	-238.90	1,498.72	0.00	0.00	0.00	-22,473.85
50	1	50	36.86	-231.25	0.00	0.00	0.00	3,467.61
		51	-36.86	247.03	0.00	0.00	0.00	-4,185.05
	2	50	238.89	-1,498.92	0.00	0.00	0.00	22,473.24
		51	-238.89	1,601.19	0.00	0.00	0.00	-27,123.51
51	1	51	36.86	-247.03	0.00	0.00	0.00	4,185.01
		52	-36.86	262.81	0.00	0.00	0.00	-4,949.77
	2	51	238.87	-1,600.99	0.00	0.00	0.00	27,122.95
		52	-238.87	1,703.26	0.00	0.00	0.00	-32,079.44

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date 04-Dec-99
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Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
52	1	52	36.86	-262.81	0.00	0.00	0.00	4.949.74
		53	-36.86	283.85	0.00	0.00	0.00	-6.043.04
	2	52	238.89	-1.703.22	0.00	0.00	0.00	32.079.23
		53	-238.89	1.839.58	0.00	0.00	0.00	-39.164.89
53	1	53	36.86	-283.86	0.00	0.00	0.00	6.042.99
		54	-36.86	294.38	0.00	0.00	0.00	-6.621.26
	2	53	238.88	-1.839.39	0.00	0.00	0.00	-39.164.91
		54	-238.88	1.907.57	0.00	0.00	0.00	-42.912.05
54	1	54	34.03	299.30	0.00	0.00	0.00	6.704.55
		55	-34.03	-288.78	0.00	0.00	0.00	-6.116.53
	2	54	220.54	1.939.59	0.00	0.00	0.00	43.452.13
		55	-220.54	-1.871.41	0.00	0.00	0.00	-39.640.99
55	1	55	34.03	288.77	0.00	0.00	0.00	6,116.50
		56	-34.03	-267.73	0.00	0.00	0.00	-5.003.49
	2	55	220.55	1,871.57	0.00	0.00	0.00	39,640.98
		56	-220.55	-1,735.21	0.00	0.00	0.00	-32,427.48
56	1	56	34.03	267.69	0.00	0.00	0.00	5,003.41
		57	-34.03	-251.91	0.00	0.00	0.00	-4,224.01
	2	56	220.54	1,735.18	0.00	0.00	0.00	32,427.34
		57	-220.54	-1,632.91	0.00	0.00	0.00	-27,375.41
57	1	57	34.03	251.93	0.00	0.00	0.00	4,223.91
		58	-34.03	-236.15	0.00	0.00	0.00	-3,491.79
	2	57	220.56	1,632.86	0.00	0.00	0.00	27,375.35
		58	-220.56	-1,530.59	0.00	0.00	0.00	-22,630.22
58	1	58	34.03	236.17	0.00	0.00	0.00	3,491.74
		59	-34.03	-220.39	0.00	0.00	0.00	-2,806.93
	2	58	220.57	1,530.42	0.00	0.00	0.00	22,629.67
		59	-220.57	-1,428.15	0.00	0.00	0.00	-18,191.85
59	1	59	34.03	220.42	0.00	0.00	0.00	2,806.93
		60	-34.03	-204.64	0.00	0.00	0.00	-2,169.37
	2	59	220.53	1,428.25	0.00	0.00	0.00	18,191.51
		60	-220.53	-1,325.98	0.00	0.00	0.00	-14,059.96
60	1	60	34.03	204.64	0.00	0.00	0.00	2,169.41
		61	-34.03	-188.86	0.00	0.00	0.00	-1,579.22
	2	60	220.55	1,326.22	0.00	0.00	0.00	14,060.24
		61	-220.55	-1,223.95	0.00	0.00	0.00	-10,234.84

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date 04-Dec-99
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Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
61	1	61	34.03	188.81	0.00	0.00	0.00	1.579.22
		62	-34.03	-173.03	0.00	0.00	0.00	-1.036.41
	2	61	220.54	1,223.53	0.00	0.00	0.00	10.234.51
		62	-220.54	-1,121.26	0.00	0.00	0.00	-6.717.46
62	1	62	34.03	173.17	0.00	0.00	0.00	1.036.59
		63	-34.03	-157.39	0.00	0.00	0.00	-540.76
	2	62	220.54	1,121.90	0.00	0.00	0.00	6.717.61
		63	-220.54	-1,019.63	0.00	0.00	0.00	-3,504.98
63	1	63	34.03	157.24	0.00	0.00	0.00	540.86
		64	-34.03	-138.83	0.00	0.00	0.00	-22.72
	2	63	220.55	1,019.26	0.00	0.00	0.00	3,505.58
		64	-220.55	-899.95	0.00	0.00	0.00	-147.04

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
43 MAX	77.94	0.00	62	151.05	3.50	21			
	0.00	0.00	55	0.00	3.50	55	52.43 C	0.00	35
	MIN -221.56	3.21	64	-2,774.47	0.00	61			
	0.00	3.50	43	0.00	3.50	43	7.01 C	3.50	88
44 MAX	67.38	0.00	65	371.83	3.50	28			
	0.00	0.00	55	0.00	3.50	55	52.43 C	0.00	35
	MIN -234.72	3.50	68	-2,484.62	0.29	65			
	0.00	3.50	43	0.00	3.50	43	7.01 C	3.50	88
45 MAX	54.69	0.00	69	628.11	3.00	33			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -243.51	3.00	71	-2,277.55	0.00	68			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
46 MAX	46.08	0.00	72	946.81	3.00	38			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -251.60	3.00	74	-2,052.07	0.00	71			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
47 MAX	38.35	0.00	75	1,322.22	3.00	42			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -258.86	3.00	77	-1,822.03	0.00	74			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
48 MAX	31.26	0.00	78	1,748.63	3.00	46			
	0.00	0.00	55	0.00	3.00	55	52.44 C	0.00	35
	MIN -265.50	3.00	80	-1,585.65	0.00	77			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
49 MAX	24.73	0.00	81	2,217.95	3.00	49			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -271.68	3.00	83	-1,342.24	0.00	80			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
50 MAX	18.81	0.00	84	2,724.68	3.00	52			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -277.34	3.00	86	-1,091.56	0.00	83			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
51 MAX	13.26	0.00	87	3,263.10	3.00	54			
	0.00	0.00	55	0.00	3.00	55	52.43 C	0.00	35
	MIN -280.87	3.00	88	-834.36	0.00	86			
	0.00	3.00	43	0.00	3.00	43	7.01 C	3.00	88
52 MAX	-9.37	0.00	1	4,023.41	4.00	57			
	0.00	0.00	55	0.00	4.00	55	52.44 C	0.00	35

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-280.88	4.00	88	-378.71	0.00	88			
	0.00	4.00	43	0.00	4.00	43	7.01 C	4.00	88
53 MAX	-9.37	0.00	1	4.418.77	2.00	58			
	0.00	0.00	55	0.00	2.00	55	52.43 C	0.00	35
MIN	-280.83	2.00	88	314.48	0.00	1			
	0.00	2.00	43	0.00	2.00	43	7.01 C	2.00	88
54 MAX	29.52	0.00	59	1.935.72	0.00	59			
	0.00	0.00	78	0.00	0.00	24	15.41 C	0.00	19
MIN	1.88	2.00	1	123.33	2.00	1			
	0.00	2.00	65	0.00	0.00	55	25.31 T	2.00	68
55 MAX	29.52	0.00	59	1.876.68	0.00	59			
	0.00	0.00	78	0.00	0.00	24	15.41 C	0.00	19
MIN	1.88	4.00	1	115.82	4.00	1			
	0.00	4.00	65	0.00	0.00	55	25.30 T	4.00	68
56 MAX	29.51	0.00	57	1.758.53	0.00	59			
	0.00	0.00	78	0.00	3.00	43	15.41 C	0.00	19
MIN	1.88	3.00	1	110.18	3.00	1			
	0.00	3.00	65	0.00	0.00	55	25.30 T	3.00	68
57 MAX	29.52	0.00	60	1.670.00	0.00	59			
	0.00	0.00	78	0.00	3.00	43	15.41 C	0.00	19
MIN	1.88	3.00	1	104.55	3.00	1			
	0.00	3.00	65	0.00	0.00	55	25.30 T	3.00	68
58 MAX	29.57	0.00	59	1.581.52	0.00	59			
	0.00	0.00	78	0.00	3.00	43	15.41 C	0.00	19
MIN	1.88	3.00	1	98.91	3.00	1			
	0.00	3.00	65	0.00	0.00	55	25.30 T	3.00	68
59 MAX	29.54	0.00	58	1.492.88	0.00	59			
	0.00	0.00	78	0.00	3.00	43	15.41 C	0.00	19
MIN	1.88	3.00	1	93.29	3.00	1			
	0.00	3.00	65	0.00	0.00	55	25.30 T	3.00	68
60 MAX	29.50	0.00	59	1.404.35	0.00	59			
	0.00	0.00	78	0.00	3.00	43	15.41 C	0.00	19
MIN	1.88	3.00	1	87.65	3.00	1			
	0.00	3.00	65	0.00	3.00	57	25.31 T	3.00	68
61 MAX	29.55	0.00	58	1.315.64	0.00	59			
	0.00	0.00	55	0.00	3.00	43	15.41 C	0.00	19
MIN	1.87	3.00	1	82.03	3.00	1			
	0.00	3.00	51	0.00	3.00	57	25.30 T	3.00	68

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date : 12/4/99
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**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 2)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
62 MAX	29.53	0.00	58	1.227.22	0.00	59			
	0.00	0.00	66	0.00	3.00	66	15.41 C	0.00	18
MIN	1.89	3.00	1	76.37	3.00	1			
	0.00	3.00	51	0.00	3.00	51	25.31 T	3.00	68
63 MAX	29.53	0.00	58	1.138.63	0.00	59			
	0.00	0.00	47	0.00	3.50	47	15.42 C	0.00	19
MIN	1.88	3.50	1	69.81	3.50	1			
	0.00	3.50	63	0.00	3.50	53	25.31 T	3.50	68

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
43 MAX	-2.39	0.00	88	1.047.78	3.50	32			
	0.00	0.00	30	0.00	3.50	30	1.23 C	0.00	82
	MIN	-30.28	3.50	31	78.84	0.00	88		
	0.00	3.50	11	0.00	3.50	11	17.02 T	3.50	26
44 MAX	-2.39	0.00	88	1.153.75	3.50	32			
	0.00	0.00	30	0.00	3.50	30	1.23 C	0.00	82
	MIN	-30.29	3.50	31	87.21	0.00	88		
	0.00	3.50	11	0.00	3.50	11	17.02 T	3.50	26
45 MAX	-2.39	0.00	88	1.244.66	3.00	32			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.30	3.00	32	95.58	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
46 MAX	-2.39	0.00	88	1.335.52	3.00	31			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.31	3.00	31	102.74	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
47 MAX	-2.40	0.00	88	1.426.45	3.00	31			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.32	3.00	31	109.91	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
48 MAX	-2.39	0.00	88	1.517.31	3.00	32			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.34	3.00	32	117.09	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
49 MAX	-2.39	0.00	88	1.608.19	3.00	31			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.33	3.00	31	124.26	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
50 MAX	-2.39	0.00	88	1,699.01	3.00	31			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.31	3.00	31	131.43	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
51 MAX	-2.39	0.00	88	1,789.89	3.00	31			
	0.00	0.00	30	0.00	3.00	30	1.23 C	0.00	82
	MIN	-30.29	3.00	30	138.61	0.00	88		
	0.00	3.00	11	0.00	3.00	11	17.02 T	3.00	26
52 MAX	-2.39	0.00	88	1,911.08	4.00	31			
	0.00	0.00	30	0.00	4.00	30	1.23 C	0.00	82

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-30.30	4.00	31	145.78	0.00	88			
	0.00	4.00	11	0.00	4.00	11	17.02 T	4.00	26
53 MAX	-2.39	0.00	88	1.971.66	2.00	31			
	0.00	0.00	30	0.00	2.00	30	1.23 C	0.00	82
MIN	-30.30	2.00	31	155.34	0.00	88			
	0.00	2.00	11	0.00	2.00	11	17.02 T	2.00	26
54 MAX	282.75	0.00	1	4.463.43	0.00	32			
	0.00	0.00	52	0.00	0.00	39	44.93 C	0.00	40
MIN	11.52	2.00	88	384.54	2.00	88			
	0.00	2.00	39	0.00	0.00	40	8.50 C	2.00	88
55 MAX	282.75	0.00	1	4.066.67	0.00	33			
	0.00	0.00	52	0.00	0.00	39	44.94 C	0.00	40
MIN	-9.65	4.00	1	-565.55	4.00	1			
	0.00	4.00	39	0.00	0.00	40	8.50 C	4.00	88
56 MAX	281.12	0.00	2	3.303.94	0.00	36			
	0.00	0.00	52	0.00	0.00	39	44.94 C	0.00	40
MIN	-14.78	3.00	4	-826.43	3.00	4			
	0.00	3.00	39	0.00	0.00	40	8.50 C	3.00	88
57 MAX	275.86	0.00	5	2.762.84	0.00	38			
	0.00	0.00	52	0.00	0.00	39	44.94 C	0.00	40
MIN	-20.29	3.00	7	-1.082.06	3.00	7			
	0.00	3.00	39	0.00	0.00	30	8.50 C	3.00	88
58 MAX	270.15	0.00	8	2.253.54	0.00	41			
	0.00	0.00	52	0.00	0.00	39	44.94 C	0.00	40
MIN	-26.33	3.00	10	-1.331.56	3.00	10			
	0.00	3.00	39	0.00	0.00	30	8.50 C	3.00	88
59 MAX	263.91	0.00	11	1.780.81	0.00	44			
	0.00	0.00	52	0.00	3.00	34	44.94 C	0.00	40
MIN	-32.95	3.00	13	-1.574.49	3.00	13			
	0.00	3.00	39	0.00	0.00	30	8.50 C	3.00	88
60 MAX	257.09	0.00	14	1,350.68	0.00	48			
	0.00	0.00	52	0.00	3.00	49	44.94 C	0.00	40
MIN	-40.17	3.00	16	-1,810.97	3.00	16			
	0.00	3.00	39	0.00	0.00	30	8.50 C	3.00	88
61 MAX	249.55	0.00	17	970.30	0.00	52			
	0.00	0.00	52	0.00	3.00	49	44.94 C	0.00	40
MIN	-48.07	3.00	19	-2,041.59	3.00	19			
	0.00	3.00	39	0.00	0.00	30	8.50 C	3.00	88

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 2 & 3
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
62 MAX	241.60	0.00	20	645.96	0.00	57			
	0.00	0.00	31	0.00	3.00	19	44.94 C	0.00	40
MIN	-56.74	3.00	22	-2.268.61	3.00	22			
	0.00	3.00	61	0.00	3.00	35	8.50 C	3.00	88
63 MAX	232.53	0.00	23	384.16	0.00	62			
	0.00	0.00	11	0.00	3.50	47	44.94 C	0.00	40
MIN	-66.39	3.50	25	-2.477.84	3.21	25			
	0.00	3.50	39	0.00	3.50	39	8.50 C	3.50	88

**MAX – MOMENT ENVELOP @ SPAN 3 & 4
OF BOX GIRDER SUPERSTRUCTURE**

54

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
PHYSICAL CHEMISTRY LABORATORY
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THE STUDY ON THE CONSTRUCTION OF THE BRIDGE OVER THE RIVER RUPSA IN KHULNA, PHASE-2

Job No. : _____ Designed by : _____ Checked by : _____ 12/4/99

P1 : Concentrated Lane Load P= 292.4 Kn loaded @ span 3

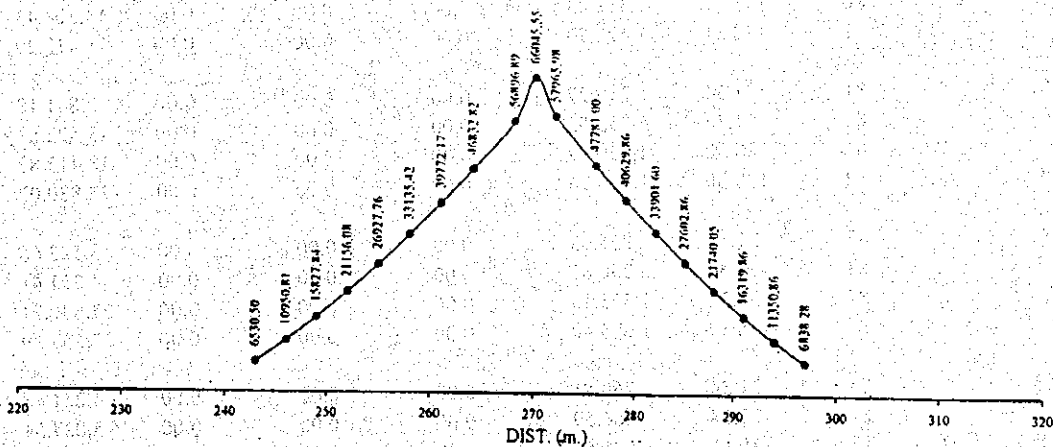
P2 : Concentrated Lane Load P= 292.4 Kn loaded @ span 4

MAX. NEG. LL MOMENT ENVELOP @ SPAN 3 & 4 (DUE TO COMBINED SIDEWALK & LANE LOAD)

Impact factor, $I = 15.244 / (L_{ave} + 38.11) = 11.04\%$ $L_{ave} = 1/2(L_1 + L_2)$

NODE	SIDEWALK SW	EQUIVALENT LANE LOAD				DIST.	TOTAL LL + I
		W	P ₁	P ₂	IMPACT		
76	74.60	783.29	1,058.94	147.83	219.65	239.50	2284.31
77	588.81	3,816.17	1,164.99	369.90	590.63	243.00	6530.50
78	1,080.94	7,005.44	1,255.97	627.36	981.10	246.00	10950.81
79	1,620.37	10,501.39	1,346.91	946.89	1,412.28	249.00	15827.84
80	2,207.04	14,304.43	1,437.89	1,323.11	1,883.61	252.00	21156.08
81	2,841.19	18,413.82	1,528.88	1,749.57	2,394.30	255.00	26927.76
82	3,522.66	22,830.21	1,619.74	2,219.18	2,943.63	258.00	33135.42
83	4,251.43	27,553.36	1,710.73	2,725.75	3,530.90	261.00	39772.17
84	5,027.55	32,583.61	1,801.58	3,264.47	4,155.61	264.00	46832.82
85	6,135.98	39,767.78	1,922.86	4,024.43	5,045.84	268.00	56896.89
86	6,858.91	44,451.97	4,431.41	4,419.87	5,883.39	270.00	66045.55
87	6,265.67	40,607.61	4,035.79	1,917.69	5,139.22	272.00	57965.98
88	5,142.39	33,327.61	3,275.74	1,796.81	4,238.45	276.00	47781.00
89	4,355.18	28,225.90	2,736.66	1,706.27	3,605.85	279.00	40629.86
90	3,615.21	23,430.42	2,229.64	1,615.74	3,010.59	282.00	33901.60
91	2,922.80	18,942.12	1,759.50	1,525.14	2,453.30	285.00	27602.86
92	2,277.51	14,760.99	1,332.39	1,434.51	1,934.65	288.00	21740.05
93	1,679.60	10,886.02	955.10	1,343.84	1,455.30	291.00	16319.86
94	1,129.00	7,317.95	634.53	1,253.29	1,016.09	294.00	11350.86
95	625.96	4,056.80	375.23	1,162.76	617.53	297.00	6838.28

MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4



**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
75	1	75	21.34	-119.31	0.00	0.00	0.00	-375.25
		76	-21.34	137.72	0.00	0.00	0.00	-74.51
	2	75	138.30	-773.18	0.00	0.00	0.00	-2,432.00
		76	-138.30	892.49	0.00	0.00	0.00	-482.89
76	1	76	21.34	-137.71	0.00	0.00	0.00	74.60
		77	-21.34	156.12	0.00	0.00	0.00	-588.79
	2	76	138.28	-892.56	0.00	0.00	0.00	483.28
		77	-138.28	1,011.87	0.00	0.00	0.00	-3,816.08
77	1	77	21.34	-156.14	0.00	0.00	0.00	588.81
		78	-21.34	171.92	0.00	0.00	0.00	-1,080.90
	2	77	138.28	-1,011.86	0.00	0.00	0.00	3,816.17
		78	-138.28	1,114.13	0.00	0.00	0.00	-7,005.40
78	1	78	21.34	-171.89	0.00	0.00	0.00	1,080.94
		79	-21.34	187.67	0.00	0.00	0.00	-1,620.30
	2	78	138.28	-1,114.15	0.00	0.00	0.00	7,005.44
		79	-138.28	1,216.42	0.00	0.00	0.00	-10,501.01
79	1	79	21.34	-187.67	0.00	0.00	0.00	1,620.37
		80	-21.34	203.45	0.00	0.00	0.00	-2,207.04
	2	79	138.32	-1,216.53	0.00	0.00	0.00	10,501.39
		80	-138.32	1,318.80	0.00	0.00	0.00	-14,304.20
80	1	80	21.34	-203.50	0.00	0.00	0.00	2,207.04
		81	-21.34	219.28	0.00	0.00	0.00	-2,841.26
	2	80	138.31	-1,318.43	0.00	0.00	0.00	14,304.43
		81	-138.31	1,420.70	0.00	0.00	0.00	-18,413.29
81	1	81	21.34	-219.27	0.00	0.00	0.00	2,841.19
		82	-21.34	235.05	0.00	0.00	0.00	-3,522.63
	2	81	138.30	-1,420.99	0.00	0.00	0.00	18,413.82
		82	-138.30	1,523.26	0.00	0.00	0.00	-22,830.02
82	1	82	21.34	-235.03	0.00	0.00	0.00	3,522.66
		83	-21.34	250.81	0.00	0.00	0.00	-4,251.41
	2	82	138.32	-1,523.13	0.00	0.00	0.00	22,830.21
		83	-138.32	1,625.40	0.00	0.00	0.00	-27,553.29
83	1	83	21.34	-250.81	0.00	0.00	0.00	4,251.43
		84	-21.34	266.59	0.00	0.00	0.00	-5,027.54
	2	83	138.31	-1,625.53	0.00	0.00	0.00	27,553.36
		84	-138.31	1,727.80	0.00	0.00	0.00	-32,583.45

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. :	Designed by :	Checked by :	Date
			04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
84	1	84	21.34	-266.59	0.00	0.00	0.00	5.027.55
		85	-21.34	287.63	0.00	0.00	0.00	-6.136.02
	2	84	138.31	-1.727.72	0.00	0.00	0.00	32.583.61
		85	-138.31	1.864.08	0.00	0.00	0.00	-39.767.29
85	1	85	21.34	-287.65	0.00	0.00	0.00	6.135.98
		86	-21.34	298.17	0.00	0.00	0.00	-6.721.84
	2	85	138.31	-1.864.11	0.00	0.00	0.00	39.767.78
		86	-138.31	1.932.28	0.00	0.00	0.00	-43.563.80
86	1	86	29.29	301.90	0.00	0.00	0.00	6.858.91
		87	-29.29	-291.38	0.00	0.00	0.00	-6.265.58
	2	86	189.78	1.956.34	0.00	0.00	0.00	44,451.97
		87	-189.78	-1.888.16	0.00	0.00	0.00	-40,607.98
87	1	87	29.29	291.34	0.00	0.00	0.00	6.265.67
		88	-29.29	-270.30	0.00	0.00	0.00	-5,142.39
	2	87	189.81	1,888.16	0.00	0.00	0.00	40,607.61
		88	-189.81	-1,751.80	0.00	0.00	0.00	-33,327.72
88	1	88	29.28	270.30	0.00	0.00	0.00	5,142.39
		89	-29.28	-254.52	0.00	0.00	0.00	-4,355.17
	2	88	189.80	1,751.67	0.00	0.00	0.00	33,327.61
		89	-189.80	-1,649.40	0.00	0.00	0.00	-28,225.97
89	1	89	29.29	254.51	0.00	0.00	0.00	4,355.18
		90	-29.29	-238.73	0.00	0.00	0.00	-3,615.29
	2	89	189.79	1,649.52	0.00	0.00	0.00	28,225.90
		90	-189.79	-1,547.25	0.00	0.00	0.00	-23,430.58
90	1	90	29.28	238.70	0.00	0.00	0.00	3,615.21
		91	-29.28	-222.92	0.00	0.00	0.00	-2,922.83
	2	90	189.79	1,547.02	0.00	0.00	0.00	23,430.42
		91	-189.79	-1,444.75	0.00	0.00	0.00	-18,942.52
91	1	91	29.28	222.98	0.00	0.00	0.00	2,922.80
		92	-29.28	-207.20	0.00	0.00	0.00	-2,277.51
	2	91	189.82	1,444.83	0.00	0.00	0.00	18,942.12
		92	-189.82	-1,342.56	0.00	0.00	0.00	-14,760.82
92	1	92	29.29	207.14	0.00	0.00	0.00	2,277.51
		93	-29.29	-191.36	0.00	0.00	0.00	-1,679.71
	2	92	189.77	1,342.81	0.00	0.00	0.00	14,760.99
		93	-189.77	-1,240.54	0.00	0.00	0.00	-10,885.86

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date 04-Dec-99

Note : Load 1 : Sidewalk Live Load, w = 5.26 KN/m.
 Load 2 : Uniform Lane Load, w = 34.09 KN/m.

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO SIDEWALK & UNIFORM LANE LOAD)**

MEMB	LOAD	NODE	P-AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
93	1	93	29.29	191.36	0.00	0.00	0.00	1.679.60
		94	-29.29	-175.58	0.00	0.00	0.00	-1.129.25
	2	93	189.79	1.240.38	0.00	0.00	0.00	10.886.02
		94	-189.79	-1.138.11	0.00	0.00	0.00	-7.318.15
94	1	94	29.28	175.49	0.00	0.00	0.00	1.129.00
		95	-29.28	-159.71	0.00	0.00	0.00	-626.17
	2	94	189.82	1.137.98	0.00	0.00	0.00	7.317.95
		95	-189.82	-1.035.71	0.00	0.00	0.00	-4.057.27
95	1	95	29.28	159.82	0.00	0.00	0.00	625.96
		96	-29.28	-141.41	0.00	0.00	0.00	-98.81
	2	95	189.77	1.035.80	0.00	0.00	0.00	4.056.80
		96	-189.77	-916.49	0.00	0.00	0.00	-640.33

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 4)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
75 MAX	-2.41	0.00	88	1.058.94	3.50	32			
	0.00	0.00	20	0.00	3.50	20	5.11 C	0.00	76
	MIN	-30.34	3.50	31	79.69	0.00	88		
	0.00	3.50	39	0.00	3.50	39	20.25 T	3.50	24
76 MAX	-2.41	0.00	88	1.164.99	3.50	32			
	0.00	0.00	20	0.00	3.50	20	5.11 C	0.00	76
	MIN	-30.31	3.50	31	88.13	0.00	88		
	0.00	3.50	39	0.00	3.50	39	20.26 T	3.50	24
77 MAX	-2.41	0.00	88	1.255.97	3.00	32			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.32	3.00	32	96.58	0.00	88		
	0.00	3.00	60	0.00	3.00	39	20.25 T	3.00	24
78 MAX	-2.42	0.00	88	1.346.91	3.00	32			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.33	3.00	32	103.81	0.00	88		
	0.00	3.00	39	0.00	3.00	39	20.26 T	3.00	24
79 MAX	-2.42	0.00	88	1.437.89	3.00	31			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.36	3.00	31	111.05	0.00	88		
	0.00	3.00	39	0.00	3.00	39	20.25 T	3.00	24
80 MAX	-2.42	0.00	88	1.528.88	3.00	32			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.38	3.00	32	118.30	0.00	88		
	0.00	3.00	39	0.00	3.00	39	20.26 T	3.00	24
81 MAX	-2.41	0.00	88	1.619.74	3.00	32			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.33	3.00	32	125.54	0.00	88		
	0.00	3.00	39	0.00	3.00	39	20.25 T	3.00	24
82 MAX	-2.41	0.00	88	1.710.73	3.00	31			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.36	3.00	31	132.79	0.00	88		
	0.00	3.00	60	0.00	3.00	39	20.26 T	3.00	24
83 MAX	-2.41	0.00	88	1.801.58	3.00	32			
	0.00	0.00	20	0.00	3.00	20	5.11 C	0.00	76
	MIN	-30.32	3.00	32	140.02	0.00	88		
	0.00	3.00	39	0.00	3.00	39	20.25 T	3.00	24
84 MAX	-2.41	0.00	88	1,922.86	4.00	31			
	0.00	0.00	20	0.00	4.00	20	5.11 C	0.00	76

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : _____ Designed by : _____ Checked by : _____ Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 4)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-30.33	4.00	31	147.26	0.00	88			
	0.00	4.00	39	0.00	4.00	39	20.25 T	4.00	24
85 MAX	-2.42	0.00	88	1.983.49	2.00	31			
	0.00	0.00	20	0.00	2.00	20	5.11 C	0.00	76
MIN	-30.34	2.00	31	156.91	0.00	88			
	0.00	2.00	60	0.00	2.00	39	20.25 T	2.00	24
86 MAX	282.61	0.00	1	4.431.41	0.00	32			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	11.48	2.00	88	382.43	2.00	88			
	0.00	2.00	39	0.00	0.00	19	9.00 C	2.00	1
87 MAX	282.60	0.00	1	4.035.79	0.00	33			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	-9.80	4.00	1	-573.93	4.00	1			
	0.00	4.00	39	0.00	0.00	19	9.00 C	4.00	1
88 MAX	280.96	0.00	2	3.275.74	0.00	36			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	-14.98	3.00	4	-837.68	3.00	4			
	0.00	3.00	39	0.00	0.00	19	9.00 C	3.00	1
89 MAX	275.62	0.00	5	2.736.66	0.00	38			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	-20.58	3.00	7	-1,095.59	3.00	7			
	0.00	3.00	39	0.00	0.00	19	9.00 C	3.00	1
90 MAX	269.85	0.00	8	2.229.64	0.00	41			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	-26.67	3.00	10	-1,346.86	3.00	10			
	0.00	3.00	39	0.00	0.00	20	9.00 C	3.00	1
91 MAX	263.57	0.00	11	1.759.50	0.00	44			
	0.00	0.00	52	0.00	0.00	39	46.94 C	0.00	45
MIN	-33.30	3.00	13	-1,591.04	3.00	13			
	0.00	3.00	39	0.00	0.00	20	9.00 C	3.00	1
92 MAX	256.77	0.00	14	1.332.39	0.00	48			
	0.00	0.00	52	0.00	3.00	60	46.94 C	0.00	45
MIN	-40.57	3.00	16	-1,828.19	3.00	16			
	0.00	3.00	39	0.00	0.00	20	9.00 C	3.00	1
93 MAX	249.36	0.00	17	955.10	0.00	52			
	0.00	0.00	52	0.00	3.00	60	46.94 C	0.00	45
MIN	-48.55	3.00	19	-2,058.99	3.00	19			
	0.00	3.00	39	0.00	0.00	20	9.00 C	3.00	1

THE STUDY ON THE CONSTRUCTION OF THE BRIDGE			
OVER THE RIVER RUPSA IN KHULNA, PHASE-2			
Job No. :	Designed by :	Checked by :	Date : 12/4/99

MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 4)

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
94 MAX	240.93	0.00	20	634.53	0.00	57			
	0.00	0.00	12	0.00	3.00	40	46.94 C	0.00	45
	MIN	-57.34	3.00	22	-2.285.45	3.00	22		
	0.00	3.00	23	0.00	3.00	29	9.00 C	3.00	1
95 MAX	232.05	0.00	23	375.23	0.00	62			
	0.00	0.00	26	0.00	3.50	54	46.94 C	0.00	45
	MIN	-66.82	3.50	25	-2.494.10	3.21	25		
	0.00	3.50	13	0.00	3.50	38	9.00 C	3.50	1
	0.00	0.00	70	0.00	3.50	70	7.18 C	0.00	15
MIN	2.04	3.50	1	74.51	3.50	1			
	0.00	3.50	53	0.00	3.50	50	25.16 T	3.50	66

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
75 MAX	77.64	0.00	62	147.83	3.50	20			
	0.00	0.00	61	0.00	3.50	61	44.94 C	0.00	40
MIN	-221.85	3.50	64	-2.787.26	0.00	61			
	0.00	3.50	32	0.00	3.50	32	8.50 C	3.50	88
76 MAX	67.16	0.00	65	369.90	3.50	28			
	0.00	0.00	61	0.00	3.50	61	44.94 C	0.00	40
MIN	-234.91	3.50	68	-2.495.79	0.29	65			
	0.00	3.50	32	0.00	3.50	32	8.50 C	3.50	88
77 MAX	54.49	0.00	69	627.36	3.00	33			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-243.67	3.00	71	-2.287.79	0.00	68			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
78 MAX	46.06	0.00	72	946.89	3.00	38			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-251.61	3.00	74	-2.061.30	0.00	71			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
79 MAX	38.25	0.00	75	1.323.11	3.00	42			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-258.92	3.00	77	-1.830.51	0.00	74			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
80 MAX	31.17	0.00	78	1.749.57	3.00	46			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-265.57	3.00	80	-1.593.24	0.00	77			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
81 MAX	24.75	0.00	81	2.219.18	3.00	49			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-271.70	3.00	83	-1.348.82	0.00	80			
	0.00	3.00	35	0.00	3.00	32	8.50 C	3.00	88
82 MAX	18.75	0.00	84	2.725.75	3.00	52			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-277.36	3.00	86	-1.097.33	0.00	83			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
83 MAX	13.27	0.00	87	3.264.47	3.00	54			
	0.00	0.00	61	0.00	3.00	61	44.94 C	0.00	40
MIN	-280.88	3.00	88	-839.10	0.00	86			
	0.00	3.00	32	0.00	3.00	32	8.50 C	3.00	88
84 MAX	-9.65	0.00	1	4,024.43	4.00	57			
	0.00	0.00	61	0.00	4.00	61	44.94 C	0.00	40

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Design'd by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
MIN	-280.88	4.00	88	-382.72	0.00	88			
	0.00	4.00	32	0.00	4.00	32	8.50 C	4.00	88
85 MAX	-9.66	0.00	1	4.419.87	2.00	58			
	0.00	0.00	61	0.00	2.00	61	44.94 C	0.00	40
MIN	-280.88	2.00	88	322.27	0.00	1			
	0.00	2.00	32	0.00	2.00	32	8.50 C	2.00	88
86 MAX	30.20	0.00	59	1,978.09	0.00	59			
	0.00	0.00	46	0.00	0.00	35	7.18 C	0.00	15
MIN	2.03	2.00	1	132.45	2.00	1			
	0.00	2.00	52	0.00	0.00	72	25.15 T	2.00	66
87 MAX	30.20	0.00	59	1,917.69	0.00	59			
	0.00	0.00	46	0.00	0.00	35	7.18 C	0.00	15
MIN	2.03	4.00	1	124.32	4.00	1			
	0.00	4.00	52	0.00	0.00	72	25.16 T	4.00	66
88 MAX	30.23	0.00	58	1,796.81	0.00	59			
	0.00	0.00	46	0.00	0.00	35	7.18 C	0.00	15
MIN	2.03	3.00	1	118.22	3.00	1			
	0.00	3.00	52	0.00	0.00	72	25.16 T	3.00	66
89 MAX	30.19	0.00	59	1,706.27	0.00	59			
	0.00	0.00	46	0.00	0.00	35	7.18 C	0.00	15
MIN	2.04	3.00	1	112.11	3.00	1			
	0.00	3.00	52	0.00	0.00	72	25.16 T	3.00	66
90 MAX	30.27	0.00	58	1,615.74	0.00	59			
	0.00	0.00	46	0.00	0.00	35	7.18 C	0.00	15
MIN	2.03	3.00	1	106.03	3.00	1			
	0.00	3.00	52	0.00	0.00	61	25.16 T	3.00	66
91 MAX	30.27	0.00	59	1,525.14	0.00	59			
	0.00	0.00	46	0.00	0.00	32	7.18 C	0.00	15
MIN	2.03	3.00	1	99.93	3.00	1			
	0.00	3.00	52	0.00	0.00	61	25.16 T	3.00	66
92 MAX	30.23	0.00	59	1,434.51	0.00	59			
	0.00	0.00	46	0.00	0.00	32	7.18 C	0.00	15
MIN	2.03	3.00	1	93.82	3.00	1			
	0.00	3.00	52	0.00	0.00	61	25.16 T	3.00	66
93 MAX	30.19	0.00	59	1,343.84	0.00	59			
	0.00	0.00	46	0.00	0.00	32	7.18 C	0.00	15
MIN	2.03	3.00	1	87.73	3.00	1			
	0.00	3.00	52	0.00	3.00	47	25.16 T	3.00	66

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA, PHASE-2**

Job No. : Designed by : Checked by : Date : 12/4/99

**MAX NEG. LL MOMENT ENVELOP @ SPAN 3 & 4
(DUE TO CONC. LANE LOAD P, LOADED @ SPAN 3)**

MEMB	FY/FY	DIST	LD	MZ/MY	DIST	LD	FX	DIST	LD
94 MAX	30.21	0.00	59	1.253.29	0.00	59			
	0.00	0.00	74	0.00	3.00	46	7.18 C	0.00	15
MIN	2.03	3.00	1	81.63	3.00	1			
	0.00	3.00	52	0.00	3.00	52	25.15 T	3.00	66
95 MAX	30.25	0.00	59	1.162.76	0.00	59			
	0.00	0.00	70	0.00	3.50	70	7.18 C	0.00	15
MIN	2.04	3.50	1	74.51	3.50	1			
	0.00	3.50	53	0.00	3.50	50	25.16 T	3.50	66

**DESIGN LOADING
OF BOX GIRDER SUPERSTRUCTUE**

1910

1911

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA- PHASE 2**

Job No. : _____ Date : 11/28/99 Designed by : _____ Checked by : _____

LOADING

A. Dead Load, DL

A.1. Selfweight of the Structure

A.2. Superimposed Dead Load

a. Railings	=	0.009807 sq.m.	x	50.00 KN/m. ³	=	0.49 KN/m.
b. Outer Curb	=	0.469000 sq.m.	x	24.00 KN/m. ³	=	11.26 KN/m.
c. Curb Cover	=	0.056250 sq.m.	x	24.00 KN/m. ³	=	1.35 KN/m.
d. Inner Curb	=	0.119000 sq.m.	x	24.00 KN/m. ³	=	2.86 KN/m.
e. Barrier	=	0.336000 sq.m.	x	24.00 KN/m. ³	=	8.06 KN/m.
f. Asphalt Pavement	=	0.810000 sq.m.	x	24.00 KN/m. ³	=	19.44 KN/m.
g. Utility Pipe	=	0.009807 sq.m.	x	100.00 KN/m. ³	=	0.98 KN/m.
h. Utility Pipe	=	0.009807 sq.m.	x	100.00 KN/m. ³	=	0.98 KN/m.
				Load Per Side =		<u>45.42 KN/m.</u>
				x 2 sides		<u>90.84 KN/m.</u>
				Total Superimposed Dead Load =		90.84 KN/m.

B. Live Load + Impact, LL + I

B.1. Highway Loading

Since the span is too long, equivalent lane load governs

Percentage of Lane Loading @ each lane

a. First and Second Lane	=	100.00 %
b. Third Lane	=	90.00 %
c. Fourth lane	=	75.00 %
Total	=	<u>365.00 %</u> or 3.65 lanes be applied

Uniform Load, w	=	3.65 lanes x	9.34 KN/m.	=	34.09 KN/m.
Concentrated Load, P					
For Moment, P	=	3.65 lanes x	80.10 KN/lane	=	292.37 KN
For Shear, P	=	3.65 lanes x	115.60 KN/lane	=	421.94 KN

B.2. Impact, I

$$I = \frac{15.24}{L+38.10}$$

For Positive Moment, L = span under consideration

For Negative Moment, L = average of adjacent span

For Shear, L = distance from point of analysis to farther reaction

B.3. Sidewalk

$$SL = (1.44 + 43.78/L)((16.76 - W)/L)$$

For both 70m and 100m span, adopt SL = ^{2.10} ~~2.65~~ KN/m. per sidewalk ✓

Total Sidewalk Live Load, SL x 2 = ^{4.20} ~~5.26~~ KN/m.

**THE STUDY ON THE CONSTRUCTION OF THE BRIDGE
OVER THE RIVER RUPSA IN KHULNA- PHASE 2**

Job No. : _____ Date : 11/28/99 | Designed by : _____ | Checked by : _____

C. Wind Load, WL

C.1. Design Wind Velocity, $V_{z=10} =$ 238 Km./hr at 10m height from the National Building Code of Bangladesh

Design Wind loads of AASHTO Div. 1, Art. 3.15 shall be corrected based on the design wind velocity in Bangladesh

Correction of wind velocity by height, $V_D = 2.5 \times V_o \times V_{z=10} / V_B \times \ln(Z/Z_o)$

where: $V_D =$ corrected wind velocity, Km/hr.

$V_o =$ 13.21 Km./hr ; friction velocity in open country

$V_B =$ 161 Km./hr ; base wind velocity

$Z_o =$ 0.07 ; friction height in open country

$Z =$ design height of structure

C.2 Wind Load on the Superstructure

Average Superstructure Height, $Z =$ 18.20 m.

Design Wind Velocity at $Z = 18.20m.$, $V_D =$ 271 Km./hr.

Base Wind Pressure, $W_B =$ 2.394 KN/m.²

Design Wind Pressure on Superstructure, $W = W_B(V_D/V_B)^2 =$ 6.78 KN/m.²

Ave. width of the superstructure deck = 16.30 m.

Ave. height of the superstructure sides = 6.00 m.

Design Wind Load (longitudinal), $wwl =$ 110.51 KN/m.

Design Wind Load (transverse), $wwt =$ 40.68 KN/m.